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Government of Mauritius
Executing Agency: Ministry of Agro-Industry, Food Production and Security

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Expanding coverage and strengthening management effectiveness of the protected area network on the island of Mauritius

Brief description

Mauritius, like most oceanic islands, has high levels of floral and faunal endemism and has suffered high extinction rates caused by a growing human population, habitat destruction and degradation. In order to safeguard the remaining biodiversity, the Government of Mauritius have established a terrestrial protected area network on the mainland, and associated offshore islets, comprising 20 formal state protected areas (8027ha). This is supplemented by a number of different types of less secure conservation areas (7,168ha), under varying levels of protection. Under current conditions, the terrestrial protected area network (PAN) is however not effectively safeguarding the country's unique terrestrial biodiversity because: (i) a number of natural ecosystem processes, habitats and species are not adequately represented in the existing PAS; (ii) the capacity of the institutions responsible for the planning and management of the protected areas is generally weak; and (iii) the technical knowledge to cost-effectively contain the threats to biodiversity within the PAN is under-developed.

This project seeks to strengthen the systemic, institutional and operational capacity to: (i) identify, prioritize and target gaps in representation that can be filled through protected area expansion, and complementary conservation, efforts on private and state-owned land; (ii) develop regulatory drivers and an incentives framework to support PA expansion, and complementary conservation, efforts on private and state-owned land; (iii) establish and administer a conservation stewardship program to implement PA expansion initiatives on privately owned or managed land; (iv) effectively plan, resource and manage an expanded PAN comprising both private and state protected areas; (v) cost-effectively mitigate the threats to, and pressures on, the unique biodiversity contained within the expanded PAN (notably the spread of invasive alien species); (vi) ensure better integration of the PAN into the country's socio-economic development priorities, in particular development of the tourism industry, to ensure its long-term financial sustainability; and (vi) respond effectively to the needs of, and meaningfully involve, different stakeholder groups in the ongoing planning and operational management of the expanded PAN.

The global environmental benefits of the project are represented by: (i) adding 6,893 ha of terrestrial landscapes under formal protection; (ii) increasing management effectiveness at the PA level (from a METT baseline of <37% -65% to a METT target of all PAs scoring >55% and IUCN category II PAs >70%); (iii) improving the overall PA institutional capacity (from baseline of 56% in the Capacity Assessment Scorecard to >65%); and (iv) increasing the financial sustainability of the PAN (from a financial sustainability baseline score of 17% to >45%).

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ACRONYMS

APM	Assistant Project Manager
AOP	Annual Operational Plan
APR	Annual Project Report
ARR	Annual Review Report
AWP	Annual Work Plan
BRGNP	Black River Gorges National Park
CBD	Convention on Biological Diversity
CBO	Community-Based Organization
CDR	Combined Delivery Report
CITES	Convention on International Trade on Endangered Species
CMA	Conservation Management Area
CPD	Centre of Plant Biodiversity
EA	Executing Agency
EIS	Environmental Information System
EPA	Environment Protection Act
ESA	Environmental Sensitive Area
FP	Forestry Policy
FS	Forestry Service
GDP	Gross Domestic Product
GM	Government of Mauritius
IA	Implementing Agency
IAS	Invasive alien species
IPM	Integrated Pest Management
IPPC	International Plant Protection Convention
IR	(Project) Inception Report
IRS	Integrated Resort Scheme
IUCN	International Union for the Conservation of Nature
IW	Inception Workshop
M&E	Monitoring and evaluation
MDCF	Mauritius Deer Cooperative Federation
MEA	Multilateral Environmental Agreement
METT	Management Effectiveness Tracking Tool
MoA	Ministry of Agro-Industry, Food Production and Security
MoE NDU	Ministry of Environment and National Development Unit
MoF	Ministry of Finance and Economic Empowerment
MoHL	Ministry of Housing and Lands
MoT	Ministry of Tourism, Leisure and External Communications
MoU	Memorandum of Understanding
MRC	Mauritius Research Council
MSIRI	Mauritius Sugar Industry Research Institute
MTEF	Medium-Term Expenditure Framework
MTEF	Medium Term Expenditure Framework
MUR	Mauritian Rupees
MWF	Mauritian Wildlife Foundation

NIASS	National Invasive Alien Species Strategy
NBSAP	National Biodiversity Strategy and Action Plan
NCSA	National Capacity Needs Self Assessment (for Global Environmental Management)
NDS	National Development Strategy
NEF	National Environment Fund
NEP	National Environment Policy
NES	National Environment Strategy
NEX	National Execution
NFAP	National Forestry Action Programme
NGO	Non-Government Organization
NIASSAP	National Invasive Alien Species Strategy and Action Plan
NPCF	National Parks Conservation Fund
NPCS	National Parks and Conservation Service
NPD	National Project Director
PA	Protected Area
PAN	Protected Area Network
PBB	Performance-Based Budgeting
PCU	Project Coordinating Unit
PIR	Project Implementation Review
PM	Project Manager
PPR	Project Progress Report
PSC	Project Steering Committee
PTR	Project Technical Report
PoWPA	Programme of Work on Protected Areas
RCU	(UNDP-GEF) Regional Coordinating Unit
RES	Real Estate Schemes
RM	Republic of Mauritius
SBAA	Standard Basic Assistance Agreement
SIDS	Small Island Developing State
SGP	(UNDP-GEF) Small Grants Programme
SLM	Sustainable Land Management
SMART	Specific, Measurable, Achievable, Relevant and Time-bound
SMP	Strategic Management Plan
SO	Strategic Objective
SPS	(World Trade Organization) Sanitary and Phyto-sanitary agreement
TBD	To Be Determined
TCPA	Town and Country Planning Act
TOR	Terms of Reference
UM	University of Mauritius
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNDP-CO	UNDP Country Office
UNFCCC	United Nations Framework Convention on Climate Change
VRS	Voluntary Retirement Scheme
WWF	World Wide Fund for Nature

SECTION I: Elaboration of the Narrative

PART I: Situation Analysis

CONTEXT AND GLOBAL SIGNIFICANCE

Environmental context

1. The Republic of Mauritius (RM) consists of the main islands of Mauritius¹ (1865 km²) and Rodrigues (109 km²) and two groups of outer islands, St. Brandon Archipelago (3 km²) and Agalega (21 km²). The total surface land area of the RM is 2,040 km², with an Exclusive Economic Zone (EEZ) extending over more than two million square kilometers².

2. Biogeographically, the main island of Mauritius ('Mauritius') forms part of the Mascarene Archipelago, along with Rodrigues and Reunion Island (France). All three are of volcanic origin and share many similarities in terms of their biodiversity. The island of Mauritius was formed some 8 million years ago and is encircled by fringing coral reefs that enclose coastal lagoons of varying widths. It has no proper continental shelf, with the seabed dropping off to a depth of 3000 meters within a few kilometres offshore. The land rises to a central plateau about 600m above sea level. The highest mountains are Piton de la Rivière Noire (828m), Pieter Both (828m) and Le Pouce (812m).

3. The RM is classified as a Small Island Developing State (SIDS) with the characteristics of remote location, large population size (around 600 inhabitants per km²), limited land mass, limited natural resources and a high ratio of coastline to land area.

4. The volcanic origins of Mauritius, along with the tropical climate, topography and over a million of years of isolation, resulted in the evolution of a diverse biota with a high degree of endemism. In Mauritius, around 46 per cent of all higher plants, 80 percent of birds, 94 percent of reptiles and 20 percent of the bat species are (or were) endemic to the island. Much of the indigenous plant and animal species has disappeared from Mauritius over the past 400 years of human settlement as a result of the introduction of domestic and invasive exotic species, and land transformation.

5. As a result, Mauritius now has one of the most threatened island floras in the world, with 94% of the endemic flora considered threatened. There are 671 species of indigenous flowering plant recorded in Mauritius, of which 311 are endemic (Mauritius has eight endemic plant genera), and 150 endemic to the Mascarene Archipelago (Page & d'Argent, 1997; Strahm, 1994). Seventy seven of the country's indigenous species are already classified as extinct while 155 of its flowering plant species are listed as critically endangered (79 taxa are represented by ten or fewer known individuals in the wild and 10 taxa are represented by only a single known individual), 93 species are endangered and 241 are classified as vulnerable. The most recent study of lower plants estimates that there are 207 taxa consisting of 89 genera of mosses and 59 genera of hepatics (Tixier & Gueho, 1997). There are about 200 species, subspecies and varieties of pteridophytes, of which 13 species are endemic, and 40 are extinct (Bachraz, 2000). Fifteen vegetation types (based on vegetation structure and physiognomy) have been classified, ranging from marsh communities to scrub associations to forest communities. All the islands vegetation communities can be loosely grouped into two main categories: the 'upland associations' and 'lowland associations'. The upland

¹ Including the offshore islets

² Mauritius also claims sovereignty over the Chagos islands, which lie around 1,000 km to the north-east. The British territory, which was separated from Mauritius in 1965, is home to the US military base on Diego Garcia.

plant communities are typically located in regions above 400 m (or 200 m in the south), while the lowland plant communities are generally found below 400 m (or 200 m in the south), and experience reduced rainfall between 1000-1800 mm per annum. On the west coast, where lowland areas lie in the rain shadow of the flanking mountain chains, a distinctive dry season is experienced, and many plant species become semi-deciduous throughout this period (Vaughan & Wi  h  , 1937). The lowland regions of the south and east often receive a higher rainfall and these areas support an intermediate community between the lowlands and uplands.

6. Of the 52 native species of vertebrates that were known to have occurred on Mauritius and the adjacent islets, 24 are now extinct, including the Dodo (*Raphus cucullatus*), a giant parrot (*Lophopsittacus mauritianus*) and two species of giant tortoise (*Cylindropsis* spp.). Of the approximately 30 species of land birds known to have been present on Mauritius when the first settlers arrived, only twelve of these have so far escaped extinction. Of these 12, nine are now threatened. Of the 17 native reptile species that once inhabited mainland Mauritius, only 12 remain, 11 of which are endemic. Seven of these are restricted to remnant populations on the northern offshore islets. Of the invertebrate fauna, only butterflies and land snails have been well studied. There are 39 native species of butterfly, of which five are endemic, and 125 known native species of land snail of which 43 are already extinct.

Table 1: Native diversity of selected groups in Mauritius, including the number of extinctions (numbers in brackets indicate the number of endemic species).

	Number of native species	% species endemic	Number of extinct species	Number of extant species
Angiosperms¹	671 (311)	46%	77 (42)	594 (269)
Mammals²	5 (2)	40%	2 (1)	3 (1)
Birds²	30 (24)	80%	18 (15)	12 (9)
Reptiles²	17 (16)	94%	5 (5)	12 (11)
Butterflies³	37 (5)	14%	4 (1)	33 (4)
Snails⁴	125 (81)	65%	43 (36)	82 (45)

1. Page & D' Argent, 1997; 2. Cheke, A. S. & Hume, J. P. 2008; 3. Williams, 1989; 4. Griffiths & Florens, 2007.

7. Due to its global biodiversity significance, Mauritius has been identified as a Centre of Plant Biodiversity (CPD Site 102) by the IUCN and also forms part of one of the 25 internationally recognized biodiversity 'hotspots' – Madagascar and the Indian Ocean Islands (Myers *et al.*, 2000).

8. A more detailed overview of the terrestrial biodiversity features of mainland Mauritius and the islets is provided in the report *Assessment of terrestrial biodiversity priority areas* (see Section IV, Part III).

Socio-economic context and land use

9. Mauritian society comprises people of Indian (the majority), African, Chinese and European origins. It has a total population of 1.3 million (World Bank, 2008). The country scored a Human Development Index (HDI) of 0.804 in 2007/8 which ranked it 65th among the 177 countries assessed (UNDP Human Development Report 2007/8). Table 2 below summarizes the key socio-economic indicators for Mauritius.

Table 2: Socio-economic indicators for Mauritius (2007)

<i>Urban population</i>	42.5%
<i>Economically active population</i>	44.6%

<i>Income per capita</i>	US\$5,800
<i>Real Gross Domestic Product (GDP) growth</i>	5.6%
<i>Tax revenue as % of GDP</i>	19.2%
<i>Public expenditure as a % of GDP</i>	23.5%
<i>Inflation rate</i>	8.8%
<i>Illiteracy rate</i>	12.9%
<i>Life expectancy at birth</i>	72.8 years
<i>Access to health/safe water</i>	100%
<i>Infant mortality per 1000</i>	14

10. The RM has one of the most successful and competitive economies in Africa; 2008 Gross Domestic Product (GDP) at market prices was estimated at \$7.99 billion and per capita income at \$12,0740 Purchasing Power Parity (PPP), one of the highest in Africa. The RM has realised a fair degree of diversification in its economy with tourism, textiles, sugar, and financial services emerging as the main pillars of the economy. In recent years, information and communication technology - particularly business process outsourcing - and seafood have also emerged as important business sectors. The World Bank 2009 *Doing Business Survey* ranks the RM first in Africa and 24th in the world for ease of doing business. Over the past two decades, real output growth averaged just below 6% per year, leading to a more than doubling of per capita income and a marked improvement in social indicators. The unemployment rate has fallen from a peak of 9.6% in 2005 to 8.5% in 2008. A more detailed profile of the economy of Mauritius is described in the *Economics Input* report (see Section IV, Part III).

11. Most of the useable land on the island of Mauritius has been put to productive use. Of the total surface area of mainland Mauritius, 43.3% is devoted to agriculture, 29.4% to forest, scrub, grazing areas, inland waters and degraded lands (including plantations, deer farms abandoned agricultural land) and the remainder (27.2%) is either built upon or unusable. Table 3 below summarizes the extent of the different categories of land uses on the island of Mauritius as at 2005 (CSO, 2008).

Table 3: Land use, by category, for the island of Mauritius (2005)

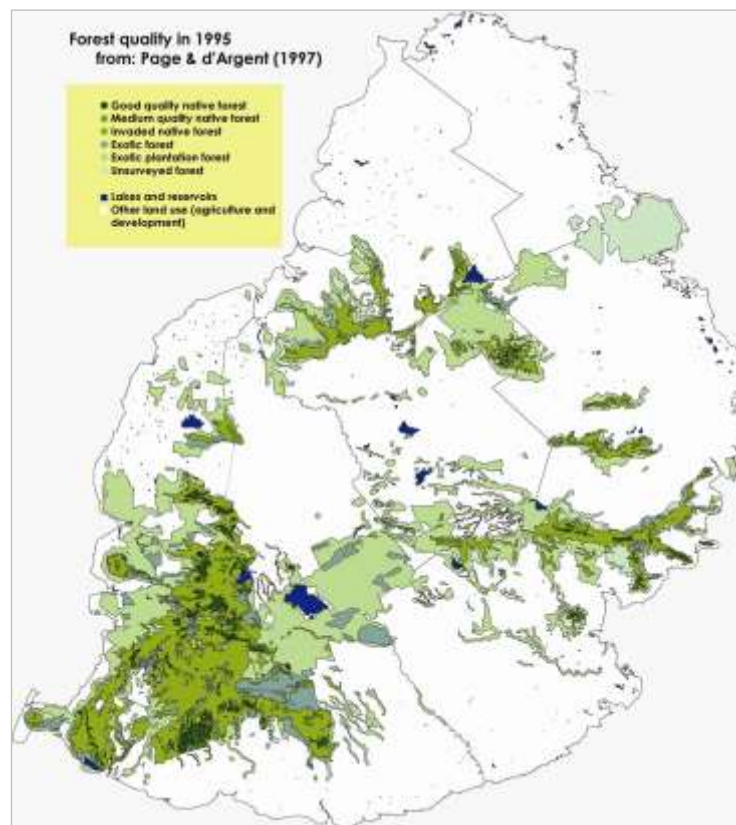
Land use category	Extent (ha)	Percentage of mainland (%)
<i>Sugar cane plantations</i>	72,000	38.6
<i>Tea plantations</i>	674	0.4
<i>Other agricultural activities</i>	8,000	4.3
<i>Forests, scrub and grazing land</i>	47,200	25.3
<i>Infrastructure</i>	4,500	2.3
<i>Inland waters</i>	2,900	1.6
<i>Built up areas</i>	46,500	24.9
<i>Abandoned cane fields</i>	4,726	2.5
TOTAL	186,500	100

12. While Mauritius has achieved a fair degree of farming system diversification, sugar cane production still remains the major agricultural product and covers an area of some 72,000ha. The crops sector in Mauritius involves around 13,000 small growers cultivating 0.25 to 2.5 hectares, and some 30 growers operating over larger areas. Fruit production consists of mainly banana, pineapple, and seasonal fruits such as litchi and mangoes, over an equivalent of 725 ha of land. Livestock production is being undertaken mostly by some 3,500 small breeders and around 100 medium to large producers - including the poultry sector - over some 700ha of land. Exotic plantations (mainly *Pinus elliottii* and *P. taeda*, *Eucalyptus tereticornis* and *Cryptomeria japonica*) cover some 14,416ha (11,816ha of state land and 2,600ha of private land).

13. The introduced Rusa deer (*Cervus timorensis*) from Java is reared on extensive deer farms and estates for hunting purposes. It is estimated that there are about 70,000 head of exotic deer on some 25,000ha of semi-natural forest areas at a stocking rate of 2.8 deer/ha. Of this area, some 10,000ha is state-owned and leased to private land owners for deer ranching.

14. Much of the remaining natural forest area on mainland Mauritius is badly degraded, and heavily infested with invasive alien species (see figure 1 below). Forty seven percent of this forested land is state owned and managed, while the remainder is under private management (i.e. leased from the state) and/or freehold title. The extent of reasonable quality native forest (i.e. that with more than 50% native plant coverage) is currently estimated at approximately 2,600ha, less than 2% of the total area of the island (Page & d'Argent 1997).

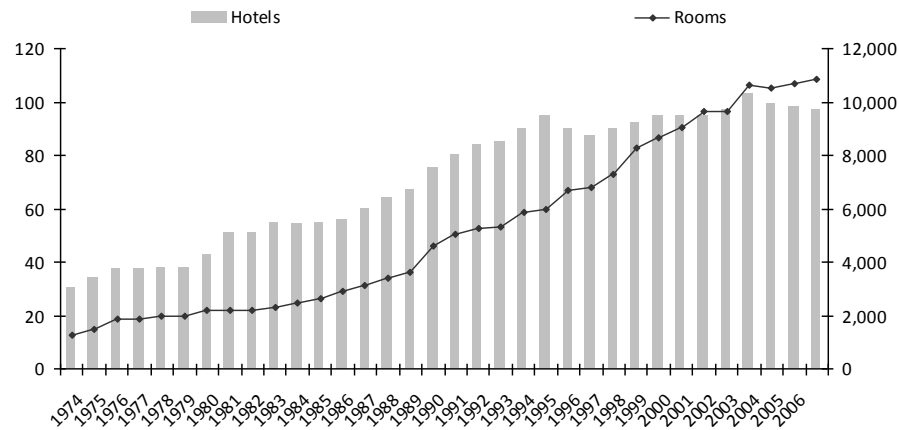
Figure 1. Distribution (circa. 1995) of the remaining forest cover, by quality (good, medium, invaded, exotic) of mainland Mauritius



Tourism

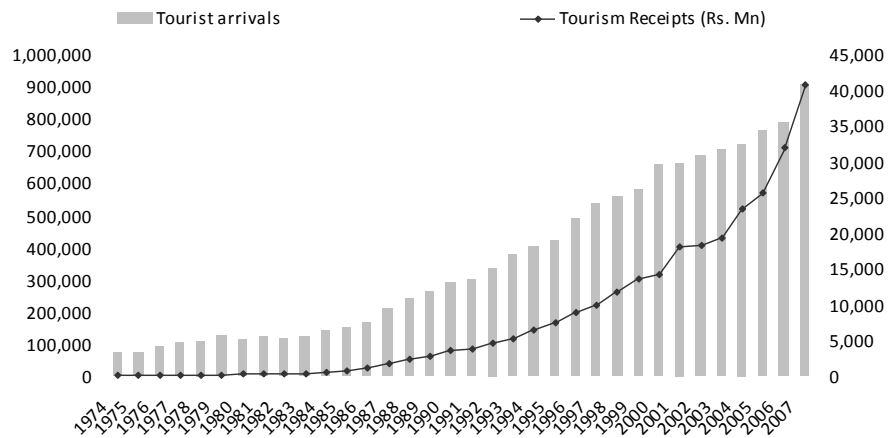
15. An economic emphasis on the tourism industry in Mauritius started as early as the 1970s, following independence. In order to diversify the economy and reduce dependence on sugar exports, the government encouraged the creation of hotels with several fiscal incentives to support the initiatives. These incentives resulted in rising tourist arrivals and the incentives provided by the government led to a rapidly increasing number of hotels and hotel capacity (see Figure 2). In 2007, Mauritius had 97 hotels with an accommodation capacity of nearly 11,000 rooms.

Figure 2. Growth in rooms and hotels: 1974-2007



16. International tourism to Mauritius could be classified as essentially beach-based. Tourist arrivals rose from 72,915 to 906,971 over the period 1974-2007, while tourism receipts rose from MUR111 million to MUR40,687 million over the same period (see Figure 3). Total tourism arrivals were estimated to be 930,456 in 2008, but are expected to decline in 2009 due to the global economic downturn. In 2006 a tourist spent on average 9.8 nights in Mauritius. Tourists on package tours (~91% of visitors in 2006) spent on average almost four nights less in the country than those not on package tours. The average party size was 2.1. Repeat tourists accounted for 33% of total visitors interviewed in 2006.

Figure 3. Tourist arrivals and total receipts: 1974-2007



17. The government aims to encourage the growth of the tourism industry to achieve two million tourist arrivals by 2015. In order to minimize the impacts of the global recession, the 2009 Budget will implement a second stimulus package to sustain the economy, including some specific fiscal incentives including *inter alia*: exemption of airlines from contributing towards the Maurice Ile Durable Fund; payment of the Environmental Protection Fee will be paid by only profitable organizations; establishment of a Hotel Reconstruction Scheme to relieve hotels from paying high leasing fees; and the possibility for hotels to sell back or lease their rooms and villas to foreigners.

18. It is only in recent years that nature-based tourism ventures and attractions have been developed in the inland areas of the island of Mauritius. These include: Sir Seewoosagur Ramgoolam Botanical Garden; Grand Bassin Lake; the seven coloured earths of Chamarel; Black River Gorges National Park; and private

developments such as Parc Aventure Chamarel, La Vallée de Ferney, Casela Nature and Leisure Park, Vanilla Crocodile Park, Casela Yemen Nature Escapade, and Domaine de le Etoile. By example, the Casela Nature and Leisure Park attracted 160,000 visitors in 2007 and generated tourism revenue of MUR18 million. Similarly the Black River Gorge attracted approximately 208,000 visitors per annum in 1994³. The nature-based tourism sub-sector is however still in a state of infancy and considerable opportunities for growth still remain.

Protected area system: Current status and coverage

19. The island of Mauritius has eleven **formal** state protected areas - one *National Park*, seven *Nature Reserves*, three *Forest Reserves* and one *Bird Sanctuary* - covering a total area of 7,292ha. The offshore islets of the island of Mauritius have 9 formal state protected areas - 1 *National Park*, seven *Nature Reserves* and one *Ancient Monument* - covering a total area of 735ha (see Table 4 and figure 4 below). Mainland *Nature Reserves* and *Forest Reserves* are managed by the Forestry Services, while the *National Parks* and *Conservation Service (NPCS)* oversee the management of the *National Parks*, most offshore islet *Nature Reserves*, the *Bird Sanctuaries* and the *Ancient Monument*. The offshore islet, Ile aux Aigrettes *Nature Reserve*, is leased for conservation management to the Mauritian Wildlife Foundation.

20. Some 6,553ha of privately owned or administered land is classified as *Mountain Reserve* or *River Reserve* in terms of the Forest and Reserves Act of 1983. *Mountain Reserves* occupy the upper third of mountains while *River Reserves* vary in width between 3, 8 and 16 m on each side, depending on the size of the river. Deforestation is not permitted in these reserves, although the enforcement of this remains weak. The Forest Service is responsible for overseeing the administration of the *Mountain* and *River reserves*.

21. The *Pas Géométriques* forms a narrow coastal belt of state-owned land around the island, theoretically 250 French feet (81.21 m) in width, but in reality narrower or non-existent in many places. The conservation value of the remaining 635ha of undeveloped land within the *Pas Géométriques* areas is however limited to acting as a physical buffer to coastal developments. The undeveloped areas of the *Pas Géométriques* are managed by the Forestry Service, primarily for recreational use.

22. Approximately 50% of the state plantation areas (some 6,000ha of exotic plantations) have been set aside for protection of ecosystem services (water catchments, soil protection, etc.).

Table 4: The current status, and size, of the terrestrial conservation estate of the mainland and offshore islets of Mauritius

Name	Conservation status	Area (ha)
Formal State Protected areas – mainland		
<i>Black River Gorges</i>	National Park	6,574.00
<i>Perrier</i>	Nature Reserve	1.44
<i>Les Mares</i>		5.10
<i>Gouly Pere</i>		10.95
<i>Cabinet</i>		17.73
<i>Bois Sec</i>		5.91
<i>Pouce</i>		68.80
<i>Corps de Garde</i>		90.33
<i>Mare Sarcelles</i>		Forest Reserve ⁴

³ Currently the BRGNP does not charge entry fees, so this is an estimate of visitor numbers.

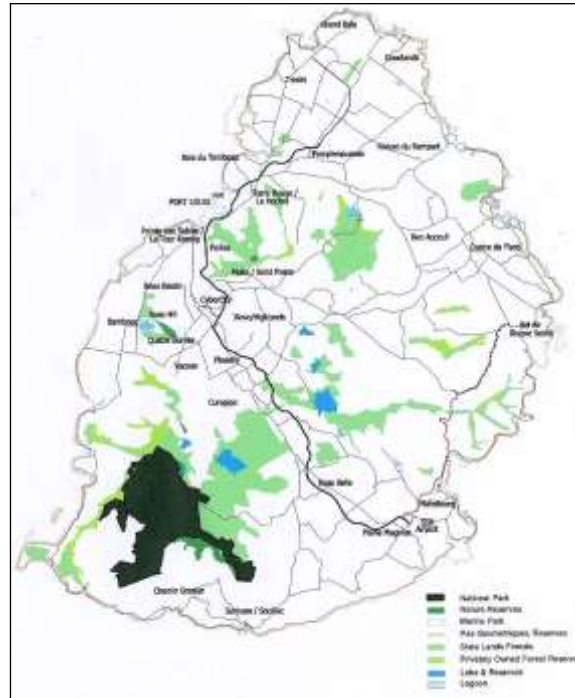
⁴ It has been proposed by the Forestry Service that the coastal forest at Bras d'Eau and the wetland at Mare Sarcelle be proclaimed as a national park, either in its entirety, or the wetland portion (Mare Sarcelle) considered as a RAMSAR site. Portions of the site

Name	Conservation status	Area (ha)
<i>Bras d'Eau</i>		452.00
<i>Poste La Fayette</i>		20.00
<i>Rivulet Terre Rouge Estuary</i>	Bird Sanctuary	26.00
TOTAL – MAINLAND		7,292ha
Formal State Protected areas – offshore islets		
<i>Pigeon Rock</i>	National Park	0.63
<i>Ile D'Ambre</i>		128.00
<i>Rocher des Oiseaux</i>		0.10
<i>Ile aux Fous</i>		0.30
<i>Ile aux Vacoas</i>		1.36
<i>Ile aux Fouquets</i>		2.49
<i>Ilot Flamants</i>		0.80
<i>Ile aux Oiseaux</i>		0.70
<i>Round Island</i>		Nature Reserves
<i>Ile aux Serpents</i>	31.66	
<i>Flat Island</i>	253.00	
<i>Gabriel Island</i>	42.20	
<i>Gunner's Quoin</i>	75.98	
<i>Ilot Mariannes</i>	1.98	
<i>Ile aux Aigrettes</i>	24.96	
<i>Ile de la Passe</i>	Ancient Monument	
TOTAL – OFFSHORE ISLETS		735ha
Pas Géométriques		
<i>Plantations – varied</i>	Pas Géométriques	226
<i>Leased for grazing and tree planting</i>		230
<i>Unplanted, protective or to be planted</i>		179
TOTAL – PAS GEOMETRIQUE		635ha
Privately owned/managed conservation areas		
<i>Varied</i>	Mountain Reserve	3,800
<i>Varied</i>	River Reserve	2,740
<i>Mondrain</i>	'Private Reserve' ⁵	5
<i>Emile Series</i>		8
TOTAL – PRIVATELY OWNED/MANAGED CONSERVATION AREAS		6,553ha

proposed are however in private ownership and would either need to be acquired or incorporated under a conservation management agreement.

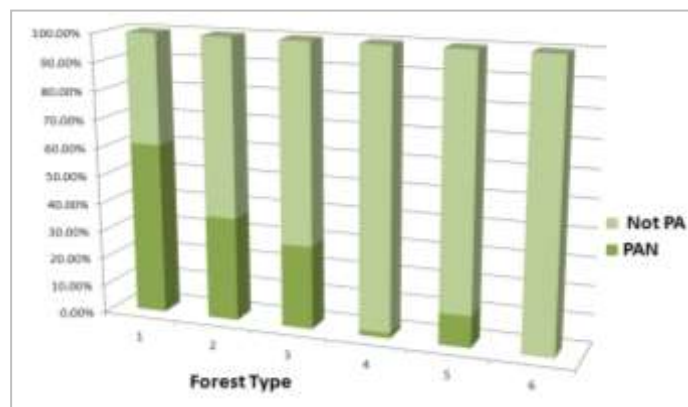
⁵ The 'private reserve' category does not currently appear to have formal protected area status

Figure 4. Map of the distribution and status of terrestrial protected area estate on the mainland of Mauritius



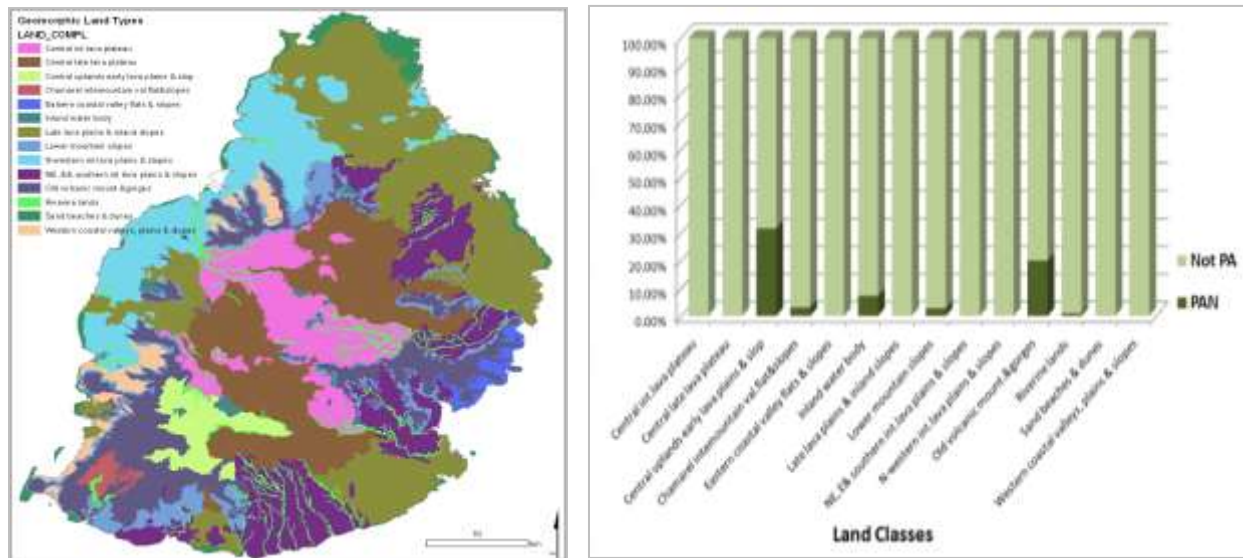
23. Of the two highest forest grade categories (grades 1 & 2 = native forest with no or very few alien species: refer to figure 1) which together cover only 1.3% of the island, only 60% of grade 1 and 30% of grade two fall within the existing PAN (see figure 5). The PAN target for both these forest grades is however 100%.

Figure 5. The extent of representation of the different forest types in the current PAN



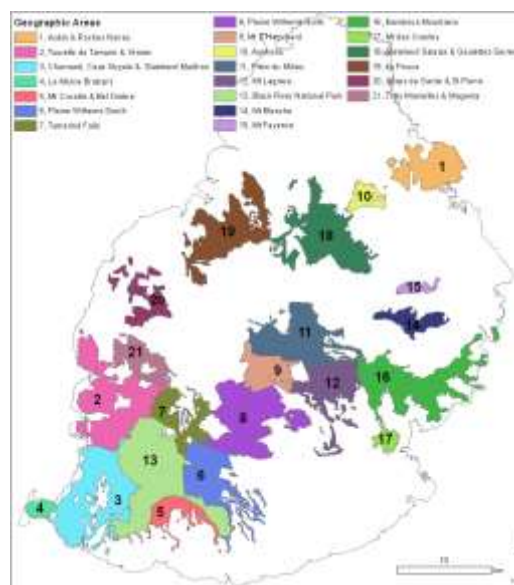
24. Using geo-morphological land types from the Mauritian Agro-Climatic Atlas as a proxy for vegetation or habitat types, currently only 3 of the 14 land types identified (see figure 6) have more than 10% of their original extent within the current PAN. More importantly, however, no lowland or coastal habitat types are currently represented in the PAN.

Figure 6. The distribution of morphological land types on the mainland island of Mauritius and the extent of representation of the these land types in the current PAN



25. Presently only 7 of the 21 geographic areas⁶ mapped on the mainland (see figure 7) have protected areas within them. From the existing species distribution data 50% of flowering plant species are recorded from only 1 geographic area and 75% of species are recorded from 3 or less geographic areas. The long-term PAN species target is to have each species represented in between 1-5 geographically independent areas (i.e. at least 1 known population in a minimum of 1 protected area). From the current species data this would imply that to represent each native plant species at least once in the PAN will require a PA in 16 of the geographic areas or all 21 geographic areas if the target is increased to at least 3 independent populations.

Figure 7. The extent of geographic areas used to conduct the terrestrial conservation assessment of the mainland Mauritius



⁶ In the absence of other data three coarse-filter biodiversity surrogates are used here to assess gaps. The remaining forest coverage on Mauritius was divided into 21 geographic areas with each area comprising a separate patch of remaining forest or a geographically distinct area such as an individual mountain range or peak.

26. A more detailed profile of the current conservation estate in Mauritius is provided in the *Overview of the Forests and Terrestrial Protected Area Network on the Island of Mauritius* (2006) report (see Section IV, Part IV). A more detailed discussion of the representivity of the current PAN can be found in the technical report, *Assessment of the terrestrial biodiversity priority areas: review and rapid biodiversity survey* appended in Section IV, Part VII.

Institutional context

27. Government responsibility for the control of formal protected areas is divided between two sub-divisions - the *Forestry Service* (FS) and the *National Parks and Conservation Service* (NPCS) - of the *Ministry of Agro-Industry, Food Production and Security* (MoA).

28. The Forestry Service is responsible for the management of all state land under forestry plantation and native vegetation including Nature Reserves. The service also has a *droit de regard* on the River Reserves and Mountain Reserves which are privately owned, and is the lessor of state land for shooting and fishing leases. The Forestry Service maintains “institutional ownership” of all protected areas (although the NPCS have been given responsibility for the management of some of these – i.e. National Parks and Bird Sanctuaries).

29. The National Parks and Conservation Service (NPCS) was created in 1994 under Section 8 of the Wildlife and National Park Act of 1993. The NPCS is responsible for the protection and preservation of terrestrial biodiversity and is responsible for the management of the national parks, including the Black River Gorges National Park, the offshore islets and the Bird Sanctuary at Terre Rouge.

30. The declaration of a Nature Reserve is the prerogative of the Forestry Service under the Forest and Reserve Act of 1983 while the declaration of a National Park is the prerogative of the NPCS, under the Wildlife and National Parks Act of 1993.

31. The total staff complement of the NPCS and FS in 2008/9 is 165 and 919 respectively. Although overall staffing levels are reasonably high, there are very low numbers of staff deployed to manage protected areas *in situ*. The 2008/09 budget for protected area management in the NPCS and FS is estimated at MUR 26,920,000⁷ and MUR 51,964,000⁸ respectively. The total revenue generated by the NPCS and FS for 2008/9 is estimated at MUR 25,700,000. A National Parks and Conservation Fund (NPCF) has been set up in terms of Section 25 of the Wildlife and National Parks Act to finance the activities of the NPCS. Income to the fund may include: (i) allocations from the government; (ii) grants or donations; (iii) proceeds from the sale of any produce (except timber); (iv) fees, rent and any other charges payable under the Act; (v) voluntary contribution from the export of live monkeys (currently \$100/monkey) (vi) license or other fees paid in accordance with the Act.

32. The *Ministry of Environment and National Development Unit* (MoE NDU) is the National Focal Point for the UN Convention on Biological Diversity (CBD), although in practice most CBD-related activities are carried out by the NPCS. The MoE NDU is directly involved with environmental protection through the identification of Environmentally Sensitive Areas (ESA), administration of Environmental Impact Assessments (EIA) and pollution abatement activities. The Ministry has sections specializing in information and education, pollution control, integrated coastal zone management, policy and planning, environmental law and environmental assessment.

⁷ US\$ 1 = MUR 33.6

⁸ This represents approximately 30% of the total FS budget allocation.

33. There are a number of committees established to facilitate inter-institutional coordination and collaboration in Mauritius. A *National Environment Commission* (chaired by the Prime Minister) is mandated to steer the work of the Ministry of Environment and National Development Unit by setting national goals and objectives for the protection of the environment. However this Commission has not met since 1995, making it largely ineffectual. An amendment to the Environment Protection Act in 2008 provides for the setting up of a *Multilateral Environmental Agreements Co-ordinating Committee* to oversee the countries progress in meeting the obligations of international environmental agreements and conventions. The *Wildlife and National Parks Advisory Council* was established under the Wildlife and National Parks Act to advise the Minister of Agro-Industry, Food Production and Security, with reference to any matter related to wildlife, national parks and other reserved land generally. The *Nature Reserves Board* was established under the Forest and Reserves Act to advise the Minister of Agro-Industry, Food Production and Security on all matters relating to nature reserves. A *National Invasive Alien Species Committee* was created in 2003 in order to advise different sectors on issues relating to invasive alien species. In addition there is the *National Biodiversity Strategy and Action Plan Committee*, the *Threatened Plants Committee* and a plethora of smaller committees that relate to more focused biodiversity conservation projects and programmes in Mauritius.

34. The *Mauritian Wildlife Foundation* (MWF), a local NGO, was established in 1984 to help save critically threatened birds and plants from extinction. The Mauritian Wildlife Foundation has played a major role in Mauritius in monitoring and research programs, in implementing *in situ* and *ex situ* species conservation management and restoration projects, and in strengthening conservation partnerships with the private sector. The MWF was instrumental in driving the establishment of Conservation Management Areas (CMA) from their inception in the 1980's. MWF, and its partner organisations, have formed strong collaborative working partnerships with the Forestry Service and the NPCCS, and maintain a Memorandum of Agreement with the Government to support this collaboration. MWF is currently actively involved in islet restoration, ecotourism on Ile aux Aigrettes, species recovery management for rare birds, forest surveys, rare plant propagation, and public education and awareness. In 2007/8, the MWF included 106 local staff, 10 local volunteers and 30 expatriate staff and volunteers at any one time. The total income/expenditure for 2008 was estimated at MUR 27.8 million.

35. The *National Capacity Self Assessment* (NCSA, 2006) provides a broad overview of the current institutional constraints to, and the opportunities for, the effective implementation of the CBD in Mauritius and, more specifically, the management of the PA network. A more detailed appraisal of the institutional capacity to specifically plan, administer and manage the PAN is presented in the *Assessment of the current institutional context for Mauritian protected area network and identification of strengths, weaknesses, opportunities and threats* report (see Section IV, Part V).

Policy and Legislative context

36. There are three groups of key national legislation that support the establishment and management of Mauritius's terrestrial protected areas:

37. The first group is the enabling legislative framework for land use planning and development. The *Town and Country Planning Act* (TCPA) of 1954 (as amended in 2002 and 2006) and the partially proclaimed *Planning and Development Act* (2004) prescribe the policies and procedures for the granting of development rights in Mauritius. The TCPA also regulates the preparation and administration of 'outline schemes' (land use plans) and the granting of permits for land development by each local authority. The *Business Facilitation Act* of 2006 (as amended in 2007), the *Investment Promotion Act* of 2000 and the *Local Government Act* of 2003 (as amended in 2006 and 2007) seek to facilitate and stimulate investment and business opportunities, and impose strict time limits on local municipalities in the processing of applications for Building and Land Use Permits (BLUP).

38. The second group is the legislative framework for broad environmental management. The *Environment Protection Act* (EPA) of 2002 (as amended in 2008) is the overarching environmental law and makes provision for *inter alia*: (i) the establishment, functions and powers and organization of public bodies involved in the oversight and administration of environmental affairs; (ii) the inter-institutional co-ordination of environmental governance; (iii) pollution prevention measures; (iv) environmental impact assessment; (v) development of environmental standards and guidelines; (vi) enforcement provisions; and (vii) various other matters relating to environment protection. The *Plant Protection Act* of 2006 provides for: the establishment of a National Plant Protection Office; the implementation of the obligations of Mauritius in terms of the International Plant Protection Convention; and the control, containment and eradication of listed pests. The *Rivers and Canals Act* of 1863 - read with the *Central Water Authority Act* of 1971 - regulates water use rights and provides control mechanisms for building development within the vicinity of rivers and streams. The *Wildlife Regulations* of 1998 give effect to the CITES Convention in Mauritian law.

39. The third group is the enabling legislative framework for the establishment, planning, management and monitoring of the conservation estate. The *Forest and Reserves Act* of 1983 governs the management of forest resources and designates the power to declare national forests, nature reserves, mountain reserves, river reserves and road reserves. The *Wildlife and National Parks Act* of 1993 provides for the protection of flora and fauna, the establishment of national parks and reserves, and establishes and mandates the National Parks and Conservation Service. This act is currently under amendment. The *National Parks and Reserves Regulations* of 1996 lay down specific rules regarding approved activities in the formal state protected areas.

40. Various policy documents frame government policy regarding the conservation of terrestrial biodiversity and the establishment and management of protected areas:

41. The Government of Mauritius has prepared a *National Environmental Strategy* (NES, 1999) for the period 1999-2009. The NES comprises a 10 year *National Environment Action Plan* (NEAP2) and its supportive *Environmental Investment Programme* (EIP2). The program on terrestrial biodiversity has as its strategic goal: 'ensure that native Mauritian biodiversity survives, flourishes and retains its genetic diversity and potential for evolutionary development'. The strategy focuses on rationalizing and strengthening the political, institutional, legislative and financial foundation by: i) bringing management of all protected areas under the portfolio responsibility of NPCS; ii) increasing the capacity of NPCS to prioritize, plan, co-ordinate and report; iii) maximizing the role of NGOs to undertake specific conservation projects; iv) increasing involvement of the private sector and the public in conservation activities; and v) identifying options to fund conservation management activities.

42. To complement the NES, the *National Development Strategy* (NDS, 2004) identified the following strategic priorities to underpin sustainable development in Mauritius: i) to safeguard valued elements of the natural and built environments; ii) to use natural resources in a sensitive and sustainable manner; iii) to promote land and property development and management practices which will benefit the environment, and iv) to ensure that development makes a positive contribution to the environment. The NDS specifically includes the designation of a network of Environmentally Sensitive Areas (ESA) to reinforce a 'general presumption' against development in these areas using the precautionary approach. The policy intent of the NDS is reflected in the *Outline Schemes* (2006) prepared for the District Council Areas of Pamplemousses - Rivière du Rempart, Moka-Flacq, Black River and Grand Port Savanne. The identification and demarcation of *Environmentally Sensitive Areas* is envisaged by the NDS (see below).

43. A *Strategic Management Plan for Environmentally Sensitive Areas* (ESA) is currently in preparation. The strategy envisages the identification, description and mapping of three categories of Environmentally Sensitive Areas: Category 1 ESA - protection; Category 2 ESA – conservation and mitigation; and Category 3 ESA – sustainable use. These ESA's overlap with most, if not all, areas of high terrestrial and marine

biodiversity significance in the RM. The strategy then seeks to: (i) regulate applications for development; (ii) define allowable activities and uses; and (iii) describe the ongoing management measures, for each category and type⁹ of ESA. A draft bill '*The Environmentally Sensitive Areas Conservation and Management Act*' (2009) has been prepared to guide and support implementation of the strategy. The draft bill makes provision for *inter alia*: conservation easements; financial reparation (reduction in property tax, income tax and/or tax on production of goods) for loss of property value; conservation payments (in form of government subsidies or benefits); direct financial payments for provision of ecosystem services; land acquisition by the state; land exchange; and filing of performance bonds with development permit approval.

44. The *National Environmental Policy* (NEP, 2007) frames the current environmental policy for the RM, and defines the country's overarching environmental objectives and strategies. The NEP consolidates all the existing environmental policy and strategy documents into a single comprehensive policy statement in order to ensure a common approach for the various sectoral and cross-sectoral approaches to environmental management. The NEP specifically provides for the implementation of the Forestry Policy and the National Biodiversity Strategy and Action Plan (see above), and sustains the priority strategic foci of the NES, NDS and NEAP2. Relevant priority objectives in the NEP include: conservation of environmental resources; integration of environmental concerns in economic and social development; enhancement of partnerships across society; and development of environmental ethics in the citizen. It strongly promotes innovative public-private partnerships in biodiversity management. The NEP policy will be implemented mainly through the *National Environment Strategy and Action Plan* (2008).

45. The *National Forestry Policy* (2006) describes, in general terms, the goals, objectives and strategies that the forestry sector will adopt in the next 10 years to address ten identified issues and problems. The forestry policy specifically provides for: expanding the formal protection of critical areas of forests of national importance; development of incentives for rehabilitation, restoration and reforestation of native forests in sensitive areas; research, planning, regulation co-operation and operational support in the control of invasive alien species; more effective regulation and control of the effects of deer ranching and sugar cane cultivation on native forests; and the sustainable development of ecotourism facilities, services and infrastructure in protected areas. It also identifies the enabling framework required to implement the policy and provides for the development of the *National Forestry Action Plan* (NFAP) to put the policy into operation.

46. The *National Biodiversity Strategy and Action Plan* (NBSAP, 2006) has as its mission statement 'Mauritius will continue to work towards achieving a significant reduction in the rate of biodiversity loss by 2015'. It has five key objectives: (i) establish a representative and viable Protected Area Network (PAN); ii) manage key components of biodiversity; iii) enable sustainable use of biodiversity; iv) maintain ecosystem services; and v) manage biotechnology and its products. Each strategic objective has a number of work programs. Work program 1a) (Terrestrial PAN) has as its objective the incorporation of 10% of Mauritius's terrestrial area within the PAN by 2015, with at least 1000ha of this under intensive management (alien invasive control and restoration of fauna and flora). It specifically envisages fostering and incentivizing private sector involvement in the ownership and/or management of PAs. Work program 1b (Inland Water Ecosystems) envisages the incorporation of priority inland water ecosystems into the PA network. Work program 2 a) (Invasive Alien Species) has as its objective the implementation of a comprehensive IAS strategy and action plan. Work program 4a) (Forest Management) has as its objective the protection of watersheds and soils by increasing the native cover of forests by up to 50% by 2015, and incorporating these areas of high conservation value into the PA network.

⁹ The strategy identifies 10 terrestrial (lakes and reservoirs; coastal marshlands; forests – high native content; rivers and streams; upland marsh; caves; steep slopes; boreholes; offshore islets; and sand beaches and dunes) and 4 marine (mangroves; tidal mudflats; coral reefs; sea grass beds) *ESA types*.

47. The *National Invasive Alien Species Strategy* (NIASS, 2008) provides a high level overview of the actions needed to minimise the negative economic, environmental and human health impacts of invasive species in the Republic of Mauritius for the period 2008-2017. The Strategy comprises eleven interlinked elements: five hierarchical “Management Elements” (prevention; early detection and rapid response; eradication; control and management; and restoration) and six “Cross-Cutting Elements” (legal, policy and institutional; capacity building and education; information management and research; public awareness and engagement; international cooperation; and provision of adequate resources). The strategy recognises the critical need to develop and implement cost-effective control and management approaches in larger areas than those that are currently being managed for biodiversity conservation (i.e. the conservation estate).

48. A more detailed review of the policy and legal framework for conservation and protected area management in Mauritius is described in the *Policy and Legal Input* report (see Section IV, Part VI).

THREATS, ROOT CAUSES AND IMPACTS

49. The key threats to the terrestrial biodiversity of Mauritius and the offshore islets, and their root causes and barriers, may be summarized as follows (see threats, root causes and barriers matrix in Annex D):

Land conversion and habitat fragmentation

50. Land conversion is the most direct and rapid cause of biodiversity loss in Mauritius. Although most of the forest cover on the island had been lost by 1935, a “sugar boom” fuelled by a highly subsidized producer price for sugar in the late 1970s led to accelerated clearing of the remaining forest areas for sugar cane plantings, much of it on increasingly marginal sites and steep slopes¹⁰. During the 1970’s and early 1980’s large areas of upland forests were converted to forestry plantations, many of which have never been used for commercial forestry purposes. The pressures on high quality land, particularly in prime coastal areas where land is very scarce, are growing and land is being continually sought after for development. Large private and public development infrastructure and residential projects pose serious threats to the integrity of the remaining lowland habitats. The National Development Strategy (2004) estimates that, over the next 20 years, a further 15,000 ha of land may need to be released from the agricultural and forestry (including native forests) sectors to meet the projected needs for development of housing and social amenities.

51. Due mainly to this extensive deforestation, forest remnants on Mauritius have become extremely fragmented. On mainland Mauritius, the remaining native terrestrial biodiversity is today primarily confined to marginal lands of low suitability to agriculture and urban development such as steep mountain and valley slopes or to marshy and rocky soils where the land is largely undevelopable. The largest such area occurs in and around the Black River Gorges National Park in the South West, followed by the Bambou Mountain Range in the South East and the Moka-Port Louis Ranges in the North West. A few isolated mountain peaks also harbour remnants of native forest, for example, Mt Blanche, Corps de Garde, Trois Mamelles and Le Morne Brabant. The result of this fragmentation is that previously large contiguous populations of native species have now been reduced into small, and for most cases severely isolated, populations. Despite some high profile conservation success stories like the Mauritius Kestrel, Pink Pigeon and Echo Parakeet, the combination of extensive habitat destruction and fragmentation, and impact of invasive species is contributing toward a general decline, or local extinction, of many native species.

Habitat modification for deer ranching

52. The introduced Rusa deer from Java (*Cervus timorensis russa*) is reared on extensive farms and estates for hunting purposes. The meat is used exclusively for the local market and trophy horns for the local and foreign hunting fraternity. It is estimated that there are about 70,000 head of exotic deer on some 25,000ha

¹⁰ With the recent reduction of the sugar price brought about by the reform of the EU Sugar Regime, many of these marginal sites have now been abandoned.

(15,000 ha in private ownership and 10,000 ha in state ownership leased to the private sector for deer ranching purposes) of semi-natural forest areas at a stocking rate of ~2.8 deer/ha. Deer ranching in the 15,000ha of privately owned land remains largely unregulated, with large proportions of natural forest habitats transformed to pasture lands. Although some of this privately owned land may be classified as Mountain Reserve or River Reserve, it receives very limited legal protection and is heavily impacted by Rusa deer and other invading plant and animal species. The monitoring and enforcement of the Forests and Reserves Act by the FS is weak on the privately owned deer ranches. There are currently no incentives for private landowners to conserve the native forests used for deer ranching. Some 10 000ha of state-owned land is also leased to private land owners for deer ranching in terms of the Shooting and Fishing Act of 1966. This Act stipulates that state lease agreements do not exceed 14 years, cleared land for grazing by deer should not exceed 5%¹¹ of the area leased and the stocking rates are maintained at or below 2.5 deer/ha. The lease conditions are however not effectively monitored or enforced by the FS, and there are no incentives in the Act to encourage the conservation of the natural forests in the leased area. Lessees are also placing pressure on the GM to increase the percentage area of land converted to pasture for deer ranching to 15% so that they can increase venison production to meet market demand.

Invasive alien species and fire

53. A diverse suite of invasive alien plants is threatening all the remaining fragments of native forests. With poor controls on the spread of these IAS on both state and private land, many have undergone population explosions, and have reached pest proportions. By example, the Chinese guava (*Psidium cattleianum*, Myrtaceae), a native of Brazil, can now reach densities of up to about seven million stems per km² in Mauritius (Ramlugun, 2003) and is now a pervasive invader in all natural areas across the entire island. There are at least 17 plant species that have been identified as particularly aggressive invaders. Among the main invasive woody species are four forest trees (*Acacia nilotica*, *Ligustrum robustum* var. *walkeri*, *Litsea monopetala*, *Tabebuia pallida*), four fruit trees and spice plants (*Flacourtia indica*, *Psidium cattleianum*, *Schinus terebrinthifolius*, *Syzigium jambos*), six ornamentals (*Ardisia crenata*, *Hiptage benghalensis*, *Homolanthus populifolius*, *Lantana camara*, *Livistona chinensis*, *Ravenala madagascariensis*), one fodder plant (*Luecaena leucocephala*) and two accidental introductions (*Clidemia hirta*, *Rubus alceifolius*). The effect of competition for light, water and minerals with native plants is massive, leading to major reduction in reproductive output. Invasive alien plants also increase native plants mortality and reduces growth rate, contributing further to the gradual replacement of native communities by alien plants which in turn constitute poor habitats for most native animals. Areas which are composed chiefly of exotic plants with little or fragmented native canopy are no longer cyclone resistant and, as observed during cyclone 'Hollanda' in February of 1994, become defoliated and uprooted leading to localized severe erosion.

54. At least 21 introduced species of mammals, reptiles and molluscs are naturalized in Mauritius. Exotic animals such as the rusa deer (*C. timorensis*) are exacerbating the effects of invasive plant species by browsing native shrubs, saplings and seedlings. Similarly: feral pigs (*Sus scrofa*) disturb the soil, disperse seeds of alien plants and suppress native plant regeneration; Javanese macaques (*Macaca fascicularis*) damage unripe native fruits; Pink Pigeons (*Columba mayeri*) are constantly at risk of predation by feral cats; and rats (*Rattus rattus* and *R. norvegicus*) are aggressive seed predators. It is suggested that predation by feral pigs was partly responsible for the extinction of several ground-nesting endemic species and the giant tortoises. Javanese macaques and rats are also reported to eat the eggs and chicks of native birds while rats are also known to predate on native reptiles and invertebrates. Predation by rats, tenrecs (*Tenrec ecaudatus*) and the carnivorous rosy wolfsnail, for example, appears to pose a serious threat to the survival of endemic snails.

55. Very little information exists on the impact of insect pests and diseases on Mauritian biodiversity, but it is likely that their effect on ecosystem degradation has been under-estimated. Insect introductions to

¹¹ The act however is not clear on whether this forest cover refers only to native forest cover

Mauritius accelerated considerably in the late 20th century in line with increased international traffic. Of the 22 significant pests to have entered Mauritius, fourteen arrived after 1975. No reliable information exists on the effect of such pest species on native biodiversity. Pink pigeons for example are known to be very prone to three serious pathogens: *Trichomonas*, a protozoan transmitted directly or via contaminated food or drinking water; *Leucocytozoon marchouxi* a protozoan transmitted by blackfly (Simuliids); and avian pox, a virus spread by contact, contaminated surfaces or insect vectors notably mosquitoes. Psittacine beak and feather disease is causing a problem for the recovery programme of the Echo Parakeet.

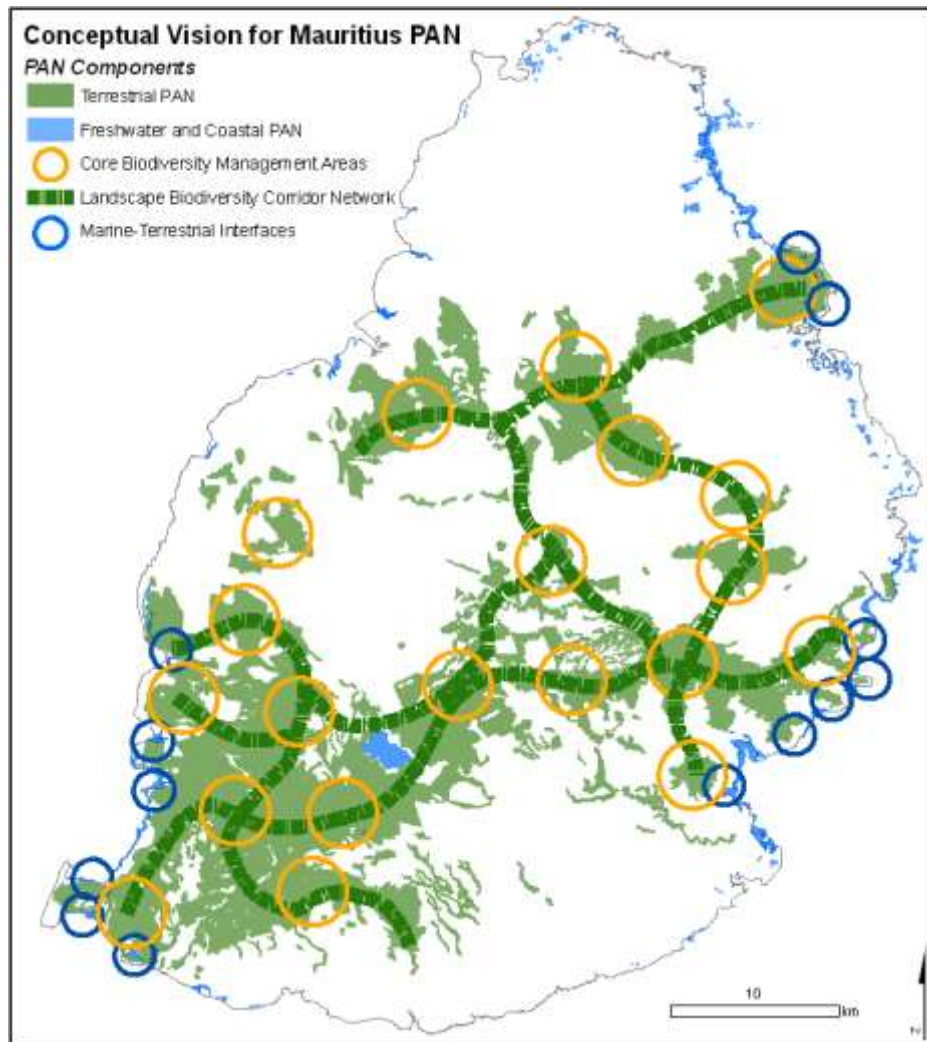
56. A detailed review of IAS in Mauritius is provided in the report *Invasive Alien Species Strategy and Action Plan development for the PAN* (see Section IV, Part VIII).

57. Fire-degraded mountain slopes occupy the western rain shadow side of mountains of north-western Mauritius. These slopes were almost certainly previously covered with natural forests. However, with the iterative removal of the native forests for wood and regular outbreaks of fire on these now degraded areas, grassland habitats have tended to predominate. The dominance of alien grasses precipitated the opportunistic grazing by livestock on these dry slopes, perpetuating the dominance of grass species and inhibiting the recovery of native forest species. Many of these slopes now lie fallow and unused for grazing and a number of fire-adapted woody invasive species have subsequently encroached into these grassland areas. With the regular outbreaks of wildfires in the mid-to late dry season, the invasive tree species are regularly “killed back” and nearly all of the grass cover is burnt leaving the steep slopes almost fully exposed to the first rains of the next rainy season.

LONG-TERM SOLUTION AND BARRIERS TO ACHIEVING THE SOLUTION

58. The long-term solution proposed by this project is a reconfigured network of private and state protected areas that is designed to safeguard a representative sample of Mauritius’s terrestrial biodiversity (see figure 8 below) under an effective and adaptive management regime. This ideal solution requires that PA agencies have adequate systemic, institutional and operational capacity to: (i) identify, prioritize and target gaps in representation that can be filled through protected area expansion, and complementary conservation, efforts on private and state-owned land; (ii) develop regulatory drivers and an incentives framework to support PA expansion, and complementary conservation, efforts on private and state-owned land; (iii) establish and administer a conservation stewardship program to implement PA expansion initiatives on privately owned or managed land; (iv) effectively plan, resource and manage an expanded PAN comprising both private and state protected areas; (v) mitigate the threats to, and pressures on, the unique biodiversity contained within the expanded PAN; (vi) ensure better integration of the PAN into the country’s socio-economic development priorities, in particular development of the tourism industry, to ensure its long-term financial sustainability; and (vi) respond effectively to the needs of, and meaningfully involve, different stakeholder groups in the ongoing planning and operational management of the expanded PAN.

Figure 8. The conceptual vision for a network of private and state protected areas that effectively conserves a representative sample of the biodiversity of mainland Mauritius



59. Three sets of barriers are currently impeding efforts to secure the conservation status and ecological integrity of the remaining natural habitats on private and state land in Mauritius. These are: i) capacity deficits at the systemic level; ii) limited capacities at the institutional level; and iii) weak technical capability at the operational level.

Capacity deficits at the systemic level

60. Although the enabling legal and policy framework for biodiversity conservation is generally sound, it is still highly fragmented. There is no unified legislative, regulatory or policy framework for protected areas and no explicit reference in the current legislative framework to the establishment and management of a **‘national system’** of PAs. Areas requiring specific attention include the need to: (a) properly define what constitutes a ‘protected area’; (b) classify, and rationalize the nomenclature for, the different protected area categories (e.g. *Pas Géométriques*, national parks, forest reserves, nature reserves, ancient monuments, marine protected areas, world heritage sites, bird sanctuaries, mountain reserves, river reserves) provided for in different pieces of legislation and align them with international best practice; (c) clarify the declaration procedures for privately owned land proclaimed as a formal protected area; (d) standardize the approach to the establishment, planning, management and performance monitoring of the different categories of PAs (i.e.

define ‘norms and standards’ for PAs); (e) clarify the responsible management authority for the different categories of protected areas and identify options for co-management; (e) develop or strengthen the economic incentives and instruments that support the establishment and management of protected areas on privately owned or leased land; (f) better harmonize the management objectives of the different categories of protected areas with other national land use planning and environmental management legislation, strategies and policies; (g) better align the activities of protected areas with national socio-economic priority needs; (h) develop mechanisms to ‘mainstream’ biodiversity and PA management into the planning and management of other productive sectors (such as deer ranching); and (i) develop better protocols for the mitigation of the threats of IAS and fire in protected areas. It is proposed in the NBSAP that many, if not all, of these needs could/should be addressed under a framework ‘National Biodiversity Policy’ (and possibly even a ‘Biodiversity Act’), but no progress has been made to date in this regards.

61. Although the National Forestry Policy and the National Forestry Action Program (in preparation) will provide for a number of innovative strategies to address a number of the threats facing the effective management of protected areas, the current legal and regulatory framework does not adequately facilitate or enable implementation of these policies (and activities). The Forest and Reserves Act and Shooting and Fishing Leases Act in particular will thus need to be amended to provide a more supportive legal framework for implementation of the National Forestry Policy

62. While the NBSAP targets the expansion of the terrestrial PAN (Work Programme 1a), there are no regulatory, optional or negotiable incentives available to PA agencies to encourage landowners and rights-holders to include their land into the PAN. Protected areas have not been demonstrated as a productive land use that can compete on an equitable basis with other commercial production sectors, and there is thus little political or landowner support for ‘locking out’ development options by incorporating many of the remaining forests into the protected area estate. There is no clear business case that articulates the benefits and costs to a landowner or rights holder as a result of agreeing to incorporate land into the PAN. The costs and benefits to the country in expanding its PAN into privately owned or managed land is also largely anecdotal. Although there is a notional understanding of ‘conservation stewardship’ as the primary mechanism to expand the PAN into private landholdings¹², there is no clarity on the: (i) strategic approach; (ii) types of stewardship agreements; (iii) operational policies and procedures; (iv) formats and templates for stewardship agreements and site management plans; (v) incentives ‘toolbox’; (vi) institutional roles and responsibilities; (vii) financial and staff resourcing needs; and (viii) medium-term priorities and targets.

63. A Strategic Management Plan for Environmentally Sensitive Areas, and a complementary Environmentally Sensitive Areas Conservation and Management Bill (‘ESA Bill’), is currently under preparation by the MoE NDU. The draft ESA bill (in its current version) provides for a number of regulatory incentives, tools and mechanisms for private land designated as an ESA to help landowners and rights-holders to convert land under low production and unprofitable land uses to a more sustainable conservation-based land use. These include *inter alia*: conservation easements; financial reparation for loss of property value; government subsidies or benefits; direct financial payments for provision of ecosystem services; land acquisition by the state; land exchange; and performance bonds. The conservation assessment undertaken during the preparatory phase indicates a high degree of overlap between the Category 1 and 2 ESAs and the priority areas for PA expansion, suggesting that there are opportunities for synergies between ESA’s and PA expansion efforts. These opportunities have however, to date, not been optimally developed or realized and

¹² While privately owned Mountain and River Reserves do exist, these areas have limited security and, while aimed at reducing deforestation, permit land uses that have adverse impacts on biodiversity and put no onus on the landowner to properly manage the native forests. Accordingly, this category of Reserve does not provide a robust framework for protecting biodiversity. Technically, such Reserves may also lie outside of the National PA System. There is thus a need to establish a new category of ‘Private Reserve’ (or equivalent) geared to biodiversity conservation, nature-based tourism and other conservation compatible land uses, characterized by high levels of enforcement that providing for long term conservation security through the placement of easements on land or other means.

there is limited strategic collaboration between the MoE NDU and the MoA (FS and NPCS) in aligning the ESA and PA expansion activities.

64. While Mauritius is a major tourism destination, it relies heavily on the “sun and sands” tourism market. With a few exceptions, there are no nature-based tourism enterprises using conservation areas as the cornerstone for this market. Tourism, as currently managed, is not contributing materially to terrestrial conservation efforts except in a minor way. Unsustainable tourism and recreational development is, in some instances (e.g. deer ranching for hunting, clearing of forests for accommodation lodges, land degradation through Integrated Resort Schemes) even leading to further habitat degradation and loss. With the development of a niche market in nature-based tourism, income from this niche market could be used to support the effective management of an expanded PAN, and act as an incentive for private landowners and rights holders to contract land into the PAN. Although the National Tourism Development Plan proposes that average spending of visitors can be increased through, amongst other measures, the development of inland attractions and services, the NPCS and FS have largely failed to develop major tourist attractions, facilities and services within the state protected areas. Those that do exist, are largely free and inevitably an additional financial and maintenance burden on the PA agencies. There is no tourism development framework for the protected area network, and no mechanisms to generate income streams for recovering management costs for these protected areas. There is also no national standard for nature-based tourism in the PAN and no industry recognition scheme for sustainable nature-based tourism.

65. The conservation challenges for the management and expansion of the PAN is compounded by the fact that public awareness of the values of the native biodiversity of Mauritius, and the contribution of PAs to conserving this biodiversity, is generally low. For example, for many members of the general public, the Mauritius’ upland forest in the Black River Gorge National Park is synonymous with the fruit of the invasive Chinese guava (*Psidium cattleianum*) that is regularly harvested by fruit vendors for selling. Similarly the tourists consider the ornamental invasive ravenal (*Ravenala madagascariensis*) an attractive natural feature of PAs in Mauritius. IAS eradication and control measures introduced at a larger scale may thus trigger potential areas of conflict with the users of, and visitors to, the PAN. The extent and reach of communication, education and awareness programs about the value and significance of native biodiversity in the PAN is currently very limited. There are limited opportunities for ‘experiential learning’ within the protected area network. There are also few structural mechanisms for integrating the wider public interests into the management of state protected areas.

Limited capacities at the institutional level

66. Institutional weaknesses serve as a significant barrier to the expansion and effective management of the protected area network. Capacity will need to be strengthened within the responsible institutions, particularly the National Parks and Conservation Service and the Forestry Service.

67. A complicating factor in strengthening institutional effectiveness is that there is an apparent degree of duplication and ambiguity, and lack of coordinated effort, between the ministries of Housing and Lands, Tourism, Environment and National Development Unit and the Forestry Service and NPCS of the MoA. By example, the enforcement of existing legislation in areas under native forest cover remains the responsibility of several authorities, but there appears to be inconsistency and a general lack of co-ordination at an operational level between them in the fulfillment of PA management and enforcement functions. Although a proliferation of committees have been established to address this (and other issues of) fragmentation (e.g. Wildlife and National Parks Advisory Council, Nature Reserves Board, NBSAP Committee and Threatened Plants Committee, etc.) these committees often comprise essentially the same people, discuss similar issues and rarely if ever follow up on any agreements reached. There is an argument, on the grounds of institutional efficiencies and economies of scale, for consolidating the legal, operational and development responsibility for marine and terrestrial protected areas into a single authority, thereby allowing a more effective deployment of the country’s limited resources and capacity. Consideration could also be given to moving the

conservation line functions of the FS and NPCS into a Ministry whose core mandate is environmental sustainability and conservation. This would then enable the MoA to focus its resources and capacity on the development-oriented focus of the Ministry, and strengthen the operational capacity of its counterpart Ministry.

68. PA institutions (as with many other government institutions in Mauritius) tend to be fairly bureaucratic with complex and inflexible procedures which often end up delaying implementation of projects, leading to a loss of momentum with the accompanying frustrations for staff, project partners and project stakeholders. This lack of flexibility is currently stifling institutional and individual initiative. There are also no business plans in place to proactively guide the strategic decision-making of PA institutions and no sustainable financing plans in place to secure sufficient, stable and long-term financial resources to implement these business plans. Despite the government's recent introduction of 'performance-based budgeting', there are currently no monitoring and evaluation systems that assess the performance of PA institutions in achieving their conservation objectives. The underlying information base and knowledge management systems to support any M&E system are also very weak and inefficient. The national and political commitment to the allocation of public resources to the conservation of protected areas is low because of the perception that they generate little, or no, economic (or other) returns to the country.

69. Staff levels and the concomitant financial allocation from the state, within the Forestry Service are being incrementally reduced, compromising the ability of the Forestry Service to operationally manage the nature and forest reserves and enforce the Forestry Act. There is currently no full-time staff dedicated to the operational management of the forest and nature reserves. Although the Forestry Service envisages transferring operational and production functions for state forests to 'competent organizations', these still need to be identified and a plan for the formal transfer (including the transfer of linked resources) has not been formulated. The Forestry Service, in turn, needs to be restructured and reorganized to assume the role of policy development, planning, monitoring and regulation as envisaged by the Forestry Policy.

70. The current staffing complement of the NPCS is currently also inadequate to meet the *in situ* operational requirements of the national parks and bird sanctuaries. Almost 85% of the recurrent expenditure of NPCS comprises human resource costs, with insufficient financing allocated to operational and maintenance costs. Capital expenditures constitute a very low (3%) proportion of total recurrent expenditure implying an ongoing under-capitalization of the PAs. Key high level management, technical and professional skills are also poorly represented in the current NPCS staff complement. Competent, skilled staff are often difficult to retain, as salaries are low and benefits negligible.

71. Although the NES suggests the increased involvement of the private sector and public in conservation management activities, the responsible institutions (Forestry Service and NPCS) are not particularly experienced, properly resourced or suitably structured to establish and maintain new operational partnerships between the state and private sector organizations and the general public. There is currently no provision made in the current institutional structures of the FS and NPCS to administer and manage a programme of protected area expansion, particularly not on privately owned land. The NPCS and Forestry Service have successfully piloted delegation, and outsourcing, of management authority (e.g. to MWF for some offshore islets) and specific management functions (e.g. invasive alien plant clearing to contractors). There are further opportunities to expand these delegation and outsourcing arrangements to the private and NGO sector, but the capacity within these institutions to facilitate this remain underdeveloped.

Technical capability at the operational level

72. There are currently very few approved management plans that direct the ongoing management of the PAs. Even where these do exist, they are outdated and fail to provide sufficient detail on implementation requirements (e.g. Black River Gorge National Park). In other instances, there is often discordance between the objectives and activities described in the management plan and the actual operational activities (e.g.

Islets National Park). There is currently no standardized format for PA management plans and no monitoring or performance management systems in place to assess the efficacy of the management of the individual protected areas.

73. The active management of IAS in protected areas is restricted to very small, fragmented ‘conservation management areas’ (CMA’s) covering a total area of some 60ha (representing ~0.8% of the state PAs). Although highly effective at a localized scale, at the ecosystem, landscape and process scale they remain an ineffectual conservation measure. The spread of invasive exotic plant species on the mainland of Mauritius is thus accelerating unabated in both the state protected areas and on the public and state land identified for future incorporation into the protected area estate. At the current rate of spread, and lack of management control, it is estimated that the remaining patches of native vegetation on the Mauritius mainland will be overrun by invasive weeds within 1-2 decades. The costs associated with the existing invasive alien plant control program in CMA’s are currently very high (MUR300, 000 – MUR400, 000 per ha per year), limiting the ability of PA institutions to extend the clearing program into the larger PAN. Outside the state-managed PAN, there are no technical or financial incentives provided to private landowners to initiate and sustain an invasive alien clearing program within private or state-leased forest areas. The habitat fragmentation of the CMA’s is leading to a high and continuous influx of seeds from adjacent infested areas. The costs associated with the fencing of CMA’s are very high, while remaining ineffective against the impacts of exotic monkeys (disperse seed of invasive species) or rats (prey on native plant seeds and eat eggs of native birds, reptiles and invertebrates). The testing of alternative methods of integrated weed management (labor deployment, mechanical clearing techniques and technologies, costing models, maintenance cycles, biological control, fire as a management tool, etc.) is still in its infancy stages and the testing of more cost-effective clearing methods remain largely undeveloped. Further research, testing and release of bio-control agents for the aggressive plant invader species in Mauritius are not being actively pursued. The efficacies of many herbicides, and methods of application, remain untested while the low volumes of herbicide usage and limited suppliers of herbicide in the country have artificially inflated herbicide prices. The dependence of the NPCS on external contractors for maintenance of CMA’s, and low volumes of work for these contractors, has kept the sub-contracted maintenance costs very high. Despite a number of private landowners demonstrating that the mechanical costs of weeding can be significantly reduced, the PA institutions have been unresponsive to these lessons and slow to adapt and modify their methodologies and techniques. Communications between the PA institutions and the private sector and MWF in IAS control has not been optimally developed to provide opportunities to share experiences and create a culture of cooperation and collaboration. There is still no cohesive IAS management strategy and action plan developed for the PAN that could ensure the integration of mechanical, biological and chemical control methodologies and cost-effective use of limited resources.

74. Despite an excellent *ex situ* propagation, and *in situ* replanting in CMAs, the efficacy of these programs in the mainland forest and islet PAs is still inadequately understood and researched. There are few forest rehabilitation models that have been properly tested under rigorous scientific conditions to assess their effectiveness in Mauritius. Similarly, although captive breeding, and reintroduction programmes, have been highly successfully developed and implemented by MWF for a number of critically endangered bird species (e.g. Mauritius pink pigeon, Mauritius kestrel, Mauritius Fody and Echo parakeet), the ongoing *in situ* management requirements (e.g. predator-proof nest boxes, predator control and supplementary feeding) are costly and may be unsustainable in the absence of a large-scale programme of IAS control and management. The linkages between IAS clearing and maintenance, propagation and replanting, and the species re-introduction programmes are not always properly effected when multiple institutions, organizations and individuals are involved (e.g. MWF-NPCS-FS-private sector).

75. Weak enforcement, as a result of: inadequate policing; fragmentation in effort across responsible institutions; unclear responsibilities for the management of inland sensitive areas and inadequate enforcement capacity (numbers, training, equipment), is providing little brake against uncontrolled illegal

development in and around the PAN. Enforcement and compliance monitoring of existing conservation legislation on state-leased and private land targeted for inclusion into the PAN remains negligible. For example, while a line of control has been established on slopes (the ‘forest reserves’) to delimit privately owned areas to be maintained under forest cover, agricultural expansion beyond this authorized line of control continues. Equally, on state forest lands leased for deer ranching, clearing of forest for pastures is not supposed to exceed five percent of the area leased. Although some lessees appear to have cleared far more than this five percent, there is seemingly no effective monitoring and enforcement of this, or any of the other, lease conditions.

76. There is currently no structured fire management program; limited fire suppression capabilities; no fire incident procedures and protocols; and no rehabilitation/restoration programmes for the highly degraded landscapes occupying the western rain shadow side of mountains of north-western Mauritius, some of which have been targeted for incorporation into the expanded PAN.

77. The baseline information for areas of biodiversity significance and the PAN is generally difficult to source and not regularly maintained and updated by the respective PA (or other) institutions. There is no consolidated and accessible database for the protected areas in Mauritius. Key baseline information such as the distribution and quality of forest cover, the distribution of vegetation communities or the distribution and cover, by species, of invasive alien plants is either outdated, unreliable or non-existent. For example, at the habitat or species representation level it is very difficult to assess gaps in the current PAN as there are no adequate biodiversity datasets such as vegetation/habitat maps or species distribution databases with which to conduct such assessments. The monitoring data for protected areas, such as the management records for the CMA’s, remains uncoordinated and unstructured. The research in protected areas is uncoordinated and unstructured - there is often a disjuncture between research priorities of the protected area management authorities and those of NGO’s and academic institutions.

STAKEHOLDER ANALYSIS

78. The Ministry of Agro-Industry, Food Production and Security (MoA) will be the responsible Ministry for project supervision. The Forestry Service (FS) and National Parks and Conservation Service (NPCS) will be the main divisions within the ministry responsible for different aspects of the project development and implementation process. They will work in close cooperation with other affected Ministry’s, including the: Ministry of Environment and National Development Unit (MoE NDU), Ministry of Housing and Lands (MoHL), Ministry of Tourism, Leisure and External Communications (MoT), and the Ministry of Finance and Economic Empowerment (MoF). The FS and NPCS will also maintain a close liaison with affected municipal and district councils through the Ministry of Local Government, Rodrigues and Outer Islands (MoLG). The project will technically collaborate with NGO’s, commercial associations and academic and research institutions, including *inter alia*: Mauritian Wildlife Foundation (MWF); University of Mauritius; Mauritius Sugar Industry Research Institute (MSIRI); and Mauritius Meat Producers Association (MMPA).

79. The project will focus its stakeholder engagement at two levels of intervention: (i) working with national and local public institutions and agencies in order to strengthen their capacity to consolidate, expand and effectively manage the PAS, and to align project activities with government’s strategic priorities; and (ii) working directly with civil society organizations, formal and informal use rights holders, and private individuals to mitigate impacts and optimize benefits of project activities. Table 5 below describes the major categories of stakeholders and their anticipated level of involvement in the project.

Table 5: Key project stakeholders and anticipated roles and responsibilities in project implementation

Stakeholder	Roles and Responsibilities
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Stakeholder	Roles and Responsibilities
Ministry of Agro-Industry, Food Production and Security (MoA)	MoA will be responsible for the overall coordination of the project. It will, through its FS and NPCS divisions, be a primary beneficiary of project activities. The MoA will chair the national Project Steering Committee (PSC)
Forestry Service (FS)	The FS will be a major project implementing partner. At the systemic and institutional level, it will actively participate in and support the implementation of all the project activities, including any legal and institutional reform processes. At the operational level it will supervise and/or directly implement project activities within all forest reserves, nature reserves and the <i>Pas Géométriques</i> . It will work closely with private landowners and leaseholders in the mountain reserves and river reserves. At the individual level, it will identify staff to participate in project training and skills development interventions. It will facilitate the proclamation, as and where appropriate, of undetermined forest land as formal PAs. It will also support conservation stewardship negotiations with affected leaseholders of state land for deer farming. The FS will have representation on the PSC and most local working groups.
National Parks and Conservation Service (NPCS)	The NPCS will be a major project implementing partner. At the systemic and institutional level, it will actively participate in and support the implementation of all the project activities, including any legal and institutional reform processes. At the operational level it will supervise and/or directly implement project activities within all national parks and bird sanctuaries. At the individual level, it will identify staff to participate in project training and skills development interventions. It will support conservation stewardship negotiations with affected landowners and leaseholders of state land where these landholdings are adjacent to national parks and/or bird sanctuaries. The NPCS will have representation on the PSC and most local working groups.
Ministry of Environment and National Development Unit (MoE NDU)	The MoE NDU is an important project partner. It will ensure the alignment of project activities (i.e. preparation of protected area policy; legislative and regulatory reform; identification of priority areas for PA expansion; development of incentives toolbox for conservation stewardship; review of institutional roles and responsibilities; funding of financial incentives for private landholders; enforcement and compliance and information management) with the implementation of the Strategic Management Plan for Environmentally Sensitive Areas (ESA). They will also ensure that project activities are integrated with the ESA Conservation and Management Act if it is promulgated as envisaged. The MoE NDU will have representation on the PSC and will participate in some local working groups.
Ministry of Tourism, Leisure and External Communications (MoT)	The MoT will provide support to the implementation of the following project activities: (i) development of communications resources and media; (ii) development of tourism products, routes and packages for the PAN; (iii) tourism/recreational concessioning in the PAN; (iv) entry and user fee structures for PAs; and (v) development of tourism and recreational infrastructure in PAs. The MoT will have representation of the PSC and will participate in the ‘nature-based tourism working group’.
Ministry of Housing and Lands (MoHL)	The MoHL will ensure the compatibility, wherever practically feasible, of land use designation with the objectives of the different categories of ESA’s and areas of high conservation value targeted for future PAs in the PAN expansion strategy. They will facilitate the allocation of unused state land in high priority conservation areas for the purposes of establishing a PA. They will also provide technical support to, and provide key datasets for, the PAN information management system. The MoHL will have representation on the PSC.

Stakeholder	Roles and Responsibilities
Ministry of Finance and Economic Empowerment (MoF)	The MoF are the GEF Focal Point for the project. They will ensure adequate grant allocation funding to the MoA to implement its PA mandate. The MoF will strive to source additional funding to support projects that may be developed to complement GEF-funded activities. The MoF will have representation on the PSC.
State Law Office (SLO)	The SLO is an important project partner. They will actively engage in the project through providing support to the legislative and regulatory reform processes that will be required to create a more enabling environment for PA expansion and effective PA planning and management. The SLO will be represented on the PSC.
Ministry of Local Government, Rodrigues and Outer Islands (MoLG): Municipal and District Councils	The project will work closely with the affected municipal and district councils to align the municipal/district 'outline schemes' with the priority areas identified for PA expansion.
Mauritian Wildlife Foundation (MWF)	The MWF will be encouraged to take an active role in implementing project activities as a specialist service provider. Where they are not directly implementing a project activity (such as conducting awareness campaigns and producing educational materials), the MWF may actively participate in, and iteratively comment on, <i>inter alia</i> the: (i) preparation of the PA policy; (ii) legislative and regulatory reform recommendations; (iii) drafting of the PA expansion strategy; (iv) review of management and governance options for the PAN; and (v) strategic plans for PA institutions and individual PAs.
University of Mauritius (UM)	The UM may be sub-contracted to provide specialist and technical inputs into different project activities, as appropriate. The UM may provide important datasets for the PA information management system.
Private landowners and lease holders	Private landowners and leaseholders are important project partners. The project will engage key landowners and leaseholders (as spatially indicated in the pilot conservation stewardship programme) on an individual case-by-case basis to negotiate the voluntary incorporation of land into the PAN. Where successful, the outcomes of this negotiation are then documented in a conservation stewardship agreement between the landowner/lease holder and the state. The project may, subject to the nature of the conservation stewardship agreement then provide specific financial (e.g. funding for IAS control) and other (e.g. involvement in tourism products and packages, technical support) incentives to contracted landowners and leaseholders.
Mauritius Sugar Industry Research Institute (MSIRI) and Mauritius Herbarium (MH)	The MSIRI and/or the MH may be sub-contracted to provide specialist and technical inputs into different project activities, as appropriate. The MSIRI and MH may provide access to, or host, important datasets for the PA information management system.
Mauritius Meat Producers Association (MMPA) and Mauritius Deer Cooperative Federation (MDCF)	The MMPA and MDCF will represent the interests of the leaseholders of state land for deer farming and hunting during project implementation, notably in the case of legal and regulatory reforms (i.e. Shooting and Fishing Act), development of incentives for conservation stewardship, enforcement and compliance, IAS control and data for the PA information management system.
National and local press and media	The project will cooperate with national and local press and media on public awareness issues.
UNDP-Mauritius	The roles and responsibilities of UNDP-Mauritius will include: (i) ensuring professional and timely implementation of the activities and delivery of the reports and other outputs identified in the project document; (ii) coordinating and supervising of the project activities; (iii) assisting and supporting the PCU and PSC in organizing, coordinating and where necessary hosting all project meetings; (iv) contracting of and contract administration for qualified project team members; (v) managing all financial administration; and (vi)

Stakeholder	Roles and Responsibilities
	establishing an effective networking between project stakeholders, specialized international organizations and the donor community. The UNDP will be a member of the Steering Committee

BASELINE ANALYSIS

80. The baseline is the “**business-as-usual**” scenario that would take place during the next 5 years in the absence of the interventions planned under the project. Under the project baseline state, a range of activities relating to the management and expansion of protected areas, and the mitigation of threats posed by IAS within these protected areas, would be undertaken that would have positive impacts on native ecosystems and their flora and fauna. These baseline activities¹³ are described in the text below.

81. Expansion of the conservation estate - Following a government commitment to conserve privately owned lands of high biodiversity value that are currently excluded from the PA system, a grant of US\$60,000 has been allocated under the EIP II for the identification and mapping of different categories of Environmentally Sensitive Areas (ESA’s) on both state and privately owned land that would require some form of protection. A strategic management plan for these ESA’s has been drafted to guide and regulate the development, use and management of each category and type of ESA. The implementation of the strategy will, if practicable and affordable, be phased in over five years and will be implemented by at least 6 state agencies (site-based implementation and resource-based implementation) and coordinated by the MoE NDU, in cooperation with private lessees and landowners (~US\$5,000,000). In line with the commitment to conserve privately owned lands of high biodiversity, the government is actively encouraging private land owners as well as small cane growers to convert marginal sugar cane lands to native forests, particularly where these areas overlap with, or are adjacent to, the designated ESA’s. Bel Ombre and Medine SE are likely to respond to this call over the next five years (US\$10,000).

82. Legislative reform - The GM is assessing the gaps in the legislative and incentive framework to enable the proclamation and effective management of the privately owned landholdings as protected areas, and to assure the long-term security of conservation use tenure. The MoE NDU has drafted a bill (*Environmentally Sensitive Areas Conservation and Management Act*) for consultation and subsequent promulgation (~US\$40,000) to facilitate the implementation of the management plan for ESA’s. The Bill envisages the GM providing a range of financial, and other, incentives for landowners and leaseholders to administer develop and manage their property in accordance with the objectives of the designated type and category of ESA (~US\$150,000 if promulgated). The Wildlife & National Parks Act is currently being amended by the NPCS to: (i) align the Act with CITES obligations; (ii) extend protection to ~300-400 species of native plants; (iii) extend protection to marine and migratory birds; and (iv) provide guidelines on the management of native animal species if they attain pest status (~US\$10,000). The Forest and Reserve Act will be also be iteratively amended to facilitate the implementation of a Forest Action Plan, currently in preparation (~US\$50,000).

83. Conservation of privately owned or leased land - Although there is no formal conservation status provided for private land in the current protected area legislation, there are a few very small areas (e.g. the 5ha Mondrairie ‘Private Nature Reserve’; the 8ha Emile Series ‘Private Nature Reserve’; and the Ferney ‘Nature Park’) that will remain actively managed as protected areas (~US\$50,000). New ‘private nature reserves’ or ‘Nature Parks’ will be established by private landowners at Vallee de L’Est and Chamarel Ebony Forest (US\$10,000). A number of innovative local IAS clearing and forest restoration projects will be undertaken by private landowners (e.g. Bioculture Ltd., Bel Ombre and A Coeur Bois) (~US\$80,000).

¹³ Where stated, the cost estimates for the baseline scenario are total baseline costs projected over the five years of the GEF project

84. Control of IAS on state-owned land on the mainland - Invasive species control (plants and animals), forest restoration and endemic bird re-introduction activities within the state protected areas on the mainland will remain limited to the maintenance of a number of small (0.4 - 19.3ha) 'conservation management areas' (CMA's) totaling some 60ha on the south-west side of the island (~US\$94,000). New CMAs will be established in the BRGNP at an average rate of 3.8ha/annum (i.e. a total area of 19ha added to the system of CMAs over the next five years). These CMA's will then be fenced, cleared, restored and followed up by the NPC (S) (~US\$60,000).

85. Control of IAS on state-owned land on the islets – Invasive alien control and restoration programs will be collaboratively implemented by NPC (S) and MWF on Ile aux Aigrettes, Round Island, Flat Island, Pigeon Rock, Ilot Gabriel and Gunner's Quoin (US\$40,000). A quarantine system to prevent rats, exotic reptiles and weeds reaching key islets will be maintained (US\$2,000). The introduction of large herbivores (i.e. Aldabra giant tortoise) to Round Island will be monitored to determine the effectiveness in the control of exotic species (US\$5,000).

86. Nature-based tourism and recreation - The NPC (S) will maintain the limited nature-based tourism infrastructure and services (e.g. trails, picnic sites, view sites at Black River Gorges National Park) in the national parks and bird sanctuaries (US\$40,000), but will generate no, or little, income from their use. The Forestry Service will continue to develop a network of trails (and associated infrastructure) within forest and nature reserves (US\$30,000), but these too will generate no income to fund their maintenance. A limited number of guided visits on quad bikes or jeeps, guided walks, canoeing trips down rivers and abseiling down waterfalls will be provided by the private sector in the protected areas. Several private landowners (e.g. Ciel Group) will continue to develop nature-based tourism products and services on land designated as 'private nature reserves' or 'nature parks' (US\$50,000). The MoT will continue to: (i) upgrade the main road through the BRGNP; (ii) improve the road network in the forest reserves and nature reserves; and (iii) install directional and informational signage (US\$100,000).

87. Financing of state protected areas - The Conservation Fund will be used to finance the capital and recurrent operational and maintenance costs of the national parks and bird sanctuaries (US\$700,000). The National Environment Fund will finance, on a special projects basis, specific biodiversity conservation activities within the PAN (US\$50,000). The NPC (S) will use the successful model of the SSR Botanical Garden to review the mechanisms for administering an entry fee to the national parks and bird sanctuaries (US\$10,000). The government will allocate grant funding to finance the capital and recurrent operational and maintenance costs of the forest reserves, nature reserves and Pas Géométriques (US\$1,600,000).

88. Propagation of native plants for restoration programmes in PAs, and maintenance of captive breeding programmes for reintroduction into PAs– Five MoA (NPC (S) and FS) and four MWF nurseries will continue to propagate critically endangered species for species recovery programmes and mass-produce native plants for restoration projects (US\$150,000). The field gene bank at Pigeon Wood (a collaborative project between the NPC (S) and the MWF) will be maintained to conserve the genetic diversity of the rarest upland plant species (US\$25,000). Captive breeding and re-establishment programmes (including provision of predator-proof nest boxes, predator control and supplementary feeding) for the Mauritius pink pigeon, Mauritius kestrel, Mauritius fody and Echo parakeet will be maintained by the MWF in partnership with the NPC (S) and private landowners (US\$60,000).

89. Restoration of degraded land – NPC (S) will continue to implement the WIO-LaB pilot project to demonstrate the feasibility of using native plants to reduce land degradation and erosion in an area cleared in the past to provide pasture for deer within the Black River Gorges National Park. Storm drains will also be constructed to reduce problems associated with surface runoff (US\$30,000). The FS will maintain the pilot

replanting program in a degraded area adjacent to the Perrier Nature Reserve (US\$8,000).

90. Information management - The Environmental Information System (EIS) will be maintained by the MoE NDU, with monitoring data of threatened native bird (Mauritius kestrel, Mauritius pink pigeon, Echo parakeet, Mauritius fody) and plant species provided by the MWF, NPCS and FS (US\$10,000). Distributional and population dynamics of threatened plant species (c300 species) will, to some extent, continue to be monitored by MWF, FS and NPCS to aid in species recovery programs (US\$5,000). The *Information System for Biodiversity and Conservation Management in Mauritius* hosted by the MWF, will be maintained on an *ad hoc* basis.

91. Education and awareness - Public education and awareness programs will remain generally low key. Talks on biodiversity and guided tours of the PAN may be provided to schools on request. Native plants will be made available from state nurseries for planting in school grounds and other public areas. Poster exhibitions, brochures, films and newspaper articles will form part of a general awareness program, but education and awareness projects associated with the PAN will be largely unstructured and reactive. Visitor centres, with interpretive displays, in the Black River Gorges National Park, at Mont Vert and at Bras d'Eau will continue to be used to inform the public about conservation issues.

92. Baseline activities would however be inadequate to significantly improve the current management effectiveness of, and the mitigation of threats to, the current protected areas. The GM will thus not fully achieve the targets established in the NBSAP and National Forestry Policy for the PAN (i.e. 1000 ha of PAN under IAS and restoration management; structured, time-bound and costed adaptive management plans developed and implemented for all protected areas). Despite a strong political commitment to improve the viability and representativeness of the PAN, notably by extending the PAN into privately owned or managed land, the GM will also not achieve the national target of 10% of the terrestrial area under PA coverage as described in the NBSAP. The protected areas and other existing areas under native forest cover will then continue to face increasing pressures from the iterative spread of invasive alien species and from political and socio-economic pressures for conversion of forest land to more productive land uses. The extent of the protected area network of Mauritius will remain largely static with critical areas of native forest under private ownership and management remaining outside the formal protected area estate. Public awareness of the threats to native forest biodiversity will remain low and the value of protected areas to the economy of Mauritius will not be optimized.

PART II: Strategy

PROJECT RATIONALE AND POLICY CONFORMITY

Fit with the GEF Focal Area Strategy and Strategic Programme

93. The project is aligned with Strategic Objective (SO) 1 of the Biodiversity focal area, 'Catalyzing Sustainability of Protected Areas Systems'. The project will contribute to this SO by increasing the spatial extent of protected areas in Mauritius, within the context of a 'sustainable protected area system' design; consolidating and strengthening the enabling legal, planning and institutional framework for the expansion and effective management of terrestrial protected areas; and strengthening the capacity (strategies, tools, mechanisms, knowledge, skills and resources) to support the operational management and financing of PAs. More specifically, the project complies with the eligibility criteria for the Strategic Programme (SP) on Strengthening Terrestrial Protected Area Networks. The focus of the SP is on ensuring better terrestrial ecosystem representation through filling ecosystem coverage gaps, an overarching objective of the project. Ancillary support will be provided to improve the operational efficiency of the terrestrial PAN, to ensure that resources allocated to the additional PA results in a management effort that is consistent with levels across

the PAN as a whole.

94. The project will contribute to the achievement of GEF’s main indicators under this priority programming area as follows:

Table 6: Contribution of the project to meeting GEF-4 BD outcome indicators

Relevant GEF-4 BD Strategic Program (SO)	Expected outcomes	Relevant GEF-4 BD Indicators	Project contribution to GEF-4 BD Indicators
Strengthened Terrestrial Protected Area Networks	Improved ecosystem coverage of under-represented terrestrial ecosystems areas as part of national protected area system	Terrestrial ecosystem coverage in national protected area systems	Terrestrial protected area system coverage increases from a baseline of 8,027ha (4%) to 14,920ha (7.4%)
	Improved management of terrestrial protected areas	Protected area management effectiveness as measured by individual protected area scorecards	METT scores of state protected areas increase from a baseline of 37-65% to all PAs >50% Financial sustainability scorecard increases from 17% to >45% Capacity development scorecard increases from a baseline of 50%, 56% and 62% to 78%, 65% and 82% for the systemic, institutional and individual capacity scores respectively

Rationale and summary of GEF Alternative

95. The focus of the project is to: i) expand the protected area network in Mauritius to better protect a representative sample of its terrestrial biodiversity (see figure 8); and ii) more effectively manage this protected area network as a whole, to ensure that it is fulfilling its conservation function. *With GEF support*, interventions at the level of Mauritius’s terrestrial PAN will: i) strengthen the enabling legal framework, incentives ‘toolboxes’ and participative mechanisms and mobilize necessary investments to support the strategic expansion and effective management of the protected area network; ii) strengthen the institutional and human resource capacity to establish and maintain an effectively managed PAN over the long term; and (iii) support the cost-effective and sustainable management of PAs by building the operational capacities, and generating investments, to manage threats to biodiversity at a site level. This implies directing national strategic planning, policy-making, legislation, funding, tools and incentive structures towards the expansion and active biodiversity management of the Mauritius PAN, and linking PA development priorities toward optimizing the true value of PAs in the socio-economic development of the country.

PROJECT GOAL, OBJECTIVE, OUTCOMES AND OUTPUTS/ACTIVITIES

96. The project **goal** is to *conserve the globally significant native forest biodiversity of Mauritius.*

97. The project **objective** is to *expand and ensure effective management of the protected area network to safeguard threatened biodiversity.*

98. In order to achieve the above objective, and overcome the barriers identified above, the project's intervention has been organised into three **outcomes** (this is in line with the components in the concept presented at the PIF stage):

Outcome 1: *Systemic framework for PA expansion improved*

Outcome 2: *PA institutional framework strengthened*

Outcome 3: *Operational know-how in place to contain threats*

99. Activities under these three components will be focused at two levels of intervention: (i) the national level, through working with public institutions and agencies to develop the systemic, institutional and individual capacity to expand and effectively manage the PAN; and (ii) the local level, through working directly with the target stakeholder groups, rights holders and landowners in the *in situ* implementation of PA expansion and operational management activities.

Outcome 1: Systemic framework for PA expansion improved

100. Work under this component will support the amendment, streamlining and harmonisation of the policy, legislative and regulatory framework to enable improvement in the representativeness, conservation security, financing and active management of a national system of protected areas. A conservation stewardship programme will be designed to underpin the negotiation of voluntary conservation agreements with private leaseholders and landowners that enables their designation as formal protected areas. Incentive mechanisms and tools that could support the implementation of this stewardship programme will be developed, tested, and their efficacy assessed. A business-oriented financial plan for an expanded PAN (comprising a matrix of private and state owned land) will be prepared. To support and complement efforts to expand the protected area network, a concurrent communication, education and awareness programme will be initiated, targeting key political and institutional decision-makers and affected landowners, leaseholders and local use groups.

101. The outputs necessary to achieve these outcomes are described below.

Output 1.1: Enabling national policy for a representative system of protected areas is formulated

Work under this output will seek to assist the GM in modernizing its policy framework for protected areas. A national protected area policy will be developed that describes the approach to the establishment and effective management of a comprehensive, adequate and representative protected area system for Mauritius. The activities required to prepare this policy will include *inter alia*:

- Briefly summarizing global reviews of best practice in protected area establishment, planning and management.
- Formalizing the definition of what constitutes a 'protected area' in Mauritius.
- Defining the vision, guiding principles and values for formal protected areas in Mauritius.
- Developing a common approach to the application of the different IUCN protected area categories in the classification of PAs in Mauritius. This may include drafting a minimum set of criteria and management objectives for the different categories of protected areas (including international conservation designations such as World Heritage Site, Biosphere Reserve and Ramsar site).
- Developing a standardized approach to the establishment of protected areas on both private and state land. This will include formulating guidelines on: (a) procedural requirements; (b) technical requirements; (c) stakeholder participation processes; (d) incentives for private landowners to contract land into the PAN; (e) nature of the formal agreements with affected stakeholder groups,

notably private landholders or lease holders; (f) mechanisms for the delineation of protected areas; and (f) gazetting the formal proclamation.

- Preparing objectives and guidelines for the operations planning and management of different categories of protected areas. This may include the technical requirements for: management plans; responses to common biological management issues such as fire, invasive alien species control, rehabilitation/restoration and wildlife management; applied research and monitoring; enforcement and compliance; neighbor relations; tourism/recreational facilities and services; natural resource use; stakeholder engagement; and co-operative governance.
- Identifying the role of the private and NGO sector in recreational and tourism enterprise development opportunities in protected areas.
- Identifying the reporting requirements to monitor management effectiveness of protected areas and the protected area system.
- Identifying the institutional roles and responsibilities in protected area planning, management and monitoring (see also Output 2.1).
- Consolidating the information collated above into a ‘National Policy for Protected Areas in Mauritius’.

A working group of the NBSAP Committee comprising senior representatives of the MoA (FS, NPCS), MoE NDU, MoT, MoHL, State Law Office, MoF, MWF, private landowners and research institutions will be convened by the Project Coordinating Unit (PCU) to oversee the development of the national policy on protected areas. This working group will liaise and coordinate closely with the Wildlife and National Parks Advisory Council, the Nature Reserves Board and the State Law Office. The technical preparatory work for the national policy will be facilitated by an international protected area consultant and a national counterpart, under the guidance of the Project Coordinating Unit (PCU). A participative process will be undertaken by the consultants in the iterative drafting of the national policy, including hosting focal issue-based workshops with: public institutions; private landowners; private rights holders; research institutions; NGOs; and/or individual specialists. The international and national consultants will also be required to develop and implement a mentoring programme for key counterpart staff in the FS and NPCS during the iterative development of the national policy. The national policy for protected areas will be submitted by the NBSAP Committee to the MoA for formal adoption, either as a standalone policy, or as an integral part of the proposed ‘National Biodiversity Policy’.

Output 1.2: Legislative and regulatory framework for the PAN is updated and reformed

Work under this output will be guided by the preparation of the national policy for protected areas in Mauritius undertaken in Output 1.1 and the detailed legal review completed in the preparatory phase. The protected area policy will specifically direct the legislative and regulatory reform that will be needed to facilitate its implementation. Affected biodiversity conservation legislation that may be amended include the: Environment Protection Act; Forest and Reserves Act; Wildlife and National Parks Act (and associated regulations); and Shooting and Fishing Act. Project support may also be provided to the enactment of the draft bill for ‘The Environmentally Sensitive Areas Conservation and Management Act’.

The activities required to facilitate the updating and reform of the enabling legislative and regulatory framework include *inter alia*:

- Convening a legal sub-committee of the NBSAP working group established in Output 1.1, comprising at senior representatives from the State Law Office, the MoE NDU and the MoA (NPCS and FS) to address the components of the legislation that relate to the planning and management of the protected area system.
- Making explicit recommendations for legislative and regulatory reform to ensure that the following policy issues (see Output 1.1) are also adequately addressed in the enabling legislation: definition of

a formal ‘protected area’; designation of private protected areas; criteria for the different categories of protected areas, and their management objectives; establishment procedures for the different categories of protected areas; institutional roles and responsibilities for the management of the different categories of protected areas (see also Output 2.1); compliance and enforcement regimes for the different categories of protected areas; incentives, and compensatory mechanisms, that could support the establishment and management of the different categories of protected areas (see also Output 1.3); and co-operative governance arrangements between different organs of state (see also Output 2.1).

- Making recommendations on how to address the alignment of the conservation legislation with the provisions of other potentially overlapping/conflicting legislation such as land use planning and business facilitation acts.
- Preparing specific amendments to the different pieces of legislation to address these recommendations.
- Facilitating government and broad stakeholder reviews of proposed legal reforms, and re-drafting amendments as required.

The PCU will provide logistical and administrative support to the functioning of the legal sub-committee. An international specialist in environmental law, and counterpart national legal adviser, will be contracted by the PCU to provide technical and specialist legal advisory support to the sub-committee. Specific amendments to legislation and regulations will, with the support of the State Law Office, be prepared for implementation by the State Law Office.

Output 1.3: Rationale for PA expansion in place, and conservation stewardship strategy and tools established to guide implementation

Work under this output is designed to establish a strong motivation (on social, economic and environmental grounds) for the expansion of the current extent of the protected area network. It will – based on the conservation assessment undertaken during the preparatory phase - identify the spatial priorities for PA expansion, and clarify the strategic approaches to their incorporation into the PAN. It will then describe in more detail one of these approaches - conservation stewardship¹⁴ – as a mechanism for facilitating the voluntary incorporation of privately owned, privately leased and other state owned land into the expanded PAN. A strategy and implementation plan, with an associated budget, will be prepared to guide the piloting of the roll-out of a conservation stewardship programme in Mauritius. An incentives ‘toolbox’ comprising regulatory, optional and negotiable incentives will then be developed to encourage private landowners and leaseholders to incorporate their land into the PAN. The development of this incentive toolbox will draw extensively on the incentives framework prepared during the preparatory phase (see the report *‘Incentive measures for biodiversity conservation on private lands’* appended in Section IV, Part IX). Direct financial incentives will include *inter alia*: (i) direct financial payments for implementing a conservation management plan and/or for provision of ecosystem services; (ii) financial reparation for loss of property value; (iii) lease fees for land to be added to state protected areas; (iv) provision of staff, materials and equipment for conservation management at subsidized rates; (v) tax exemptions, concessions, deductions or credits (on profits from ecotourism for the initial years following commencement of business/ on lease fees for state-owned lands/ on land tax/ on sugar if sugar estates restore certain parts of their land/ on duty and VAT on relevant equipment); and (vi) access to low-interest (or no interest) loans. Indirect financial incentives will include *inter alia*: (i) provision of bulk public infrastructure and services (e.g. roads, power, and water); (ii) land swaps (for state-owned land of equivalent or higher value); (iii) limited development rights (e.g. tourism development); and (iv) longer-term security of tenure (i.e. leases) on state-owned land. Non-financial incentives will include *inter alia*: (i) professional and technical support from government agencies and

¹⁴ A conservation stewardship programme is a programme that encourages, builds and sustains a stewardship ethic in landowners through the negotiation and maintenance of conservation stewardship agreements.

institutions; (ii) capacity building for landowners and staff; (iii) marketing of individual and companies contribution to conservation in Mauritius (e.g. corporate social responsibility programmes); and (iv) access to the sharing and networking of skills, capacity and resources across the PAN partners. The exact package of incentives used in each individual case will then be a matter for negotiation between the affected landowner and the affected PA institution.

Activities are specifically directed at:

- Motivating the socio-economic and environmental case for the expansion of the PAN in Mauritius.
- Based on the conservation assessment undertaken during project preparation, providing for an integrated, co-ordinated and uniform approach to the expansion of the PAN that can be adopted and implemented by the respective PA agencies.
- Identifying the mechanisms for the expansion of the PAN, and describing the strategic approach to the implementation of these different mechanisms.
- Consolidating the motivation, spatial targets and the approach, mechanisms and tools for PA expansion into a '*PAN expansion strategy for Mauritius*'¹⁵.
- Developing an overarching strategic approach to piloting a conservation stewardship programme in Mauritius. This will include the identification of different stewardship options, ranging from: (a) basic, voluntary and non-binding agreements (voluntary agreements) to undertake sustainable land use and mitigate threats; to (b) formal short to medium-term legal agreements to contain threats, rehabilitate degraded areas and conserve important biodiversity features; to (c) formal long-term legal agreements to proclaim, and administer land as a protected area.
- Aligning the stewardship programme with the 'Strategic Management Plan for Environmentally Sensitive Areas (ESA)'.
- Describing the key actions to be implemented over the medium-term (three years) in piloting a conservation stewardship programme.
- Quantifying the required financial and human resource requirements, and a strategy for their mobilization.
- Identifying institutional roles and responsibilities, as well as the risks inherent to the programme.
- Defining the knowledge management requirements and processes required to evaluate the cost-effectiveness of the pilot phase of the conservation stewardship programme.
- Establishing operational procedures and generic templates for different stewardship agreements.
- Based on the work undertaken in the preparatory phase, developing a suite of regulatory, optional and negotiable incentives. Incentives will be aimed at helping landowners and rights-holders to convert land under low production and/or unprofitable land uses to more sustainable conservation-based land uses.
- Aligning the conservation stewardship incentives framework with the existing and proposed (e.g. the draft bill for 'The Environmentally Sensitive Areas Conservation and Management Act') legislation and regulations.
- Consolidating the strategic approach, key actions, resource needs, knowledge management processes, operational procedures, generic templates and incentives framework for a pilot¹⁶ stewardship programme into a '*Strategy and implementation plan for a pilot stewardship programme in Mauritius*'.

¹⁵ During project implementation, consideration may be given to including the PAN expansion strategy into the 'National Policy for Protected Areas in Mauritius' and/or the overarching 'Biodiversity Policy' envisaged by the NBSAP.

¹⁶ It is unlikely that adequate resources could be leveraged from the GoM to finance a large-scale conservation stewardship programme from the outset. The pilot will thus be designed as the first part of a phased implementation of a national conservation stewardship programme. It will be focused on the properties identified during the PPG that have high biodiversity value and are owned or leased by private individuals or companies who have expressed an interest and/or willingness to initiate contractual stewardship negotiations with state conservation agencies.

The technical work in developing the *PAN expansion strategy for Mauritius* and the subsidiary *Strategy and implementation plan for a pilot conservation stewardship programme in Mauritius* will be undertaken by the international protected area specialist and an international expert in land stewardship respectively, in collaboration with the national protected area consultant contracted under Output 1.1. They will report directly to the Project Coordinating Unit (PCU) and liaise closely with the MoA and MoE NDU. The policy working group of the NBSAP Committee (see Output 1.1) will determine the feasibility of incorporating the PAN expansion strategy into the 'National Policy for Protected Areas in Mauritius'. The Strategy and implementation plan for a pilot conservation stewardship programme will provide the strategic framework and tools for the implementation of the pilot programme provided for in Output 2.4.

Output 1.4: Business-oriented financial and business plan prepared for PAN

Based on the preliminary financial assessment undertaken during the preparatory phase, work under this output will focus on formulating a PAN-wide financial and business plan that is based on realistic needs, and viable and diversified financial mechanisms. This business-oriented financial plan will be organized around three key aspects of the financial planning process: a) a financial analysis that identifies funding needs and gaps, b) a pre-selection and analysis of different financial mechanisms, and an understanding of the legislative and regulatory framework for their implementation, and c) a formulation of the financial and business plan.

The specific activities that will be undertaken include:

- Accurately updating the current financial baseline prepared for the PAN during the PPG, including analysing the protected area costs, reviewing different income sources, determining the current resource use and identifying cost-reduction opportunities.
- Using financial planning tools (e.g. scenario logic), identifying the projected financial needs for the PAN, and determining the 'financial gap'.
- Assessing the functionality of the financial management system of the protected area institutions, including accounting (income and expenditure), salaries and benefits, classification of expenses (standardization), cash flow, transparency (availability of and access to information), and auditing (internal and external).
- Selecting the most appropriate financial mechanisms to ensure the diversification of financing sources for the PAN. The focus of this activity is on ensuring the maintenance, and increase in income, from conventional financial sources (governments, donors, and trust funds), as well as developing innovative alternatives (e.g. payments for environmental services, market mechanisms, etc.).
- Defining the legal and institutional framework that is required to mobilize financial resources, adopt business management principles, establish innovative financial mechanisms, and ensure the autonomy of financial management based on principles of modern governance.
- Using a 'market-based approach', preparing a '*Financial and Business Plan for the PAN of Mauritius*' that establishes lines of strategic action to mobilise financial resources and build financial capacity to support a network of protected areas. The financial plan would include: summary of financial needs and gaps; investment priorities; market analysis; summary of financial mechanisms; economic impact; implementation programme (activities, staff, budget); and means of measuring progress.

The technical work in developing the financial and business plan will be undertaken by a nationally based international business consulting firm. They will be contracted by, and report directly to, the PCU and will work in close collaboration with the relevant departments of affected Ministries (i.e. MoA, MoT, MoF and MoE NDU). The financial and business plan will be reviewed and approved by the National Project Steering Committee. Once approved, the strategies contained in the financial and business plan will, in turn, then be integrated into: (i) the development of institutional strategic plans for

the different PA agencies (see Output 2.2); and (ii) the preparation of integrated management plans for the individual protected areas (see Output 3.1).

Output 1.5: Awareness of the need to conserve native biodiversity is improved

Work under this output is designed to promote an increase in public awareness of the need to conserve native biodiversity in Mauritius. It will specifically focus on the contribution that protected areas make in conserving terrestrial biodiversity, and the value and benefits of these PAs to the ongoing socio-economic development of Mauritius. An incremental improvement in awareness will then be used to facilitate the development of custodial partnerships between government agencies, PA institutions, civil society, private landowners, business and local communities.

Activities under this output are directed at:

- Developing a simple strategic message to underpin a communications and awareness programme. This strategic message should seek to: (i) foster a pride in the native biodiversity of Mauritius; (ii) encourage the qualities and attributes of joint responsibility for custodianship of this biodiversity; and (iii) promote the role of protected areas in the conservation of this biodiversity.
- Preparing a broad-based communication and awareness program to optimise the reach of this strategic message.
- Designing and developing appropriate communications resources and media (e.g. newsletters, brochures, fact sheets, website, booklets, interpretation boards, press releases, local radio inserts, inserts on 'Tourism TV', etc.) to present and articulate this strategic message.
- Initiating outreach programmes (talks, presentations, exhibits, clean-up programs, guided day walks etc.) in local communities and primary and secondary schools to market the strategic message.
- Initiating experiential learning programme in protected areas to demonstrate the value of the strategic message.
- Establishing a 'road show' for presentation to key public decision-makers to demonstrate the contribution that an increased investment in the PAN could make to improving socio-economic development in Mauritius.
- Identifying and developing opportunities for public-private-civil society partnerships in realising the objectives of the strategic message.

It is envisaged that the PCU would, if practicable, contract this work to an environmental NGO (or a coalition of NGOs). The contractual arrangements for the work would be framed in a Memorandum of Understanding (MoU) between the MoA, UNDP and the environmental NGO(s). Specialist work such as the development of communications resources and media may in turn be sub-contracted to local marketing media service providers as and where required. The NGO would report on the progress in implementing this output to the National PSC.

Outcome 2: PA institutional framework strengthened

102. Work under this component will involve undertaking a cost-benefit analysis of the institutional and governance options for the PAN. Based on the outcomes of this cost-benefit analysis, an institutional development plan will be developed to guide the reform of the institutional structures responsible for PA management, clarify the mandated roles and responsibilities of each institution and rationalise the cooperative governance structures. Strategic/ business planning processes for the responsible PA institution/s will then be supported to ensure the allocation of resources to institutional priorities and to achieve cost-effective conservation outcomes. The efficacy of a number of different financing mechanisms proposed in the financial and business plan for the PAN (see Output 1.4) will be piloted tested, evaluated and adapted (based on lessons learned) within the relevant PA institutions. A conservation stewardship unit will be established and staffed within the most appropriate conservation agency to implement the conservation stewardship programme developed in component 1 (see Output 1.3). An intensive staff training programme

will be developed and implemented to strengthen the skills and competencies of PA staff.

103. The outputs necessary to achieve these outcomes are described below.

Output 2.1: Management and governance options for the PAN reviewed.

Work under this output will focus on supporting the GM in identifying the most cost-effective institutional and governance arrangements for the different categories of formal protected areas in Mauritius. A cost-benefit analysis of a number of different institutional options for the planning and management of both the PAN, and individual PAs, will be undertaken and the results used to guide any institutional restructuring and reform of state PA agencies that may be required. An assessment of the efficacy of different cooperative governance structures, at both the PAN and individual PA level, will also be carried out, and a model for cooperative governance of the PAN developed and implemented. Information generated from this output will be integrated into the products from Outputs 1.1 (Enabling policy, legislative and regulatory framework for the PAN).

Activities in this output are specifically directed at:

- Reviewing SIDS best practice in the institutional structuring of public PA institutions.
- Identifying alternative institutional options for the administration and management of protected areas. These may include: (a) each category of PA (e.g. national park, forest reserve/ nature reserves, MPAs, etc.) administered by separate institutions located either within a single ministry or across different ministry's; (b) a single PA institution is established with a mandate to administer and manage all terrestrial and marine PAs – this may involve a newly constituted public entity or consolidating PA functions within an existing division of the MoA (e.g. NPCA); (c) separating the legal, policy, monitoring and oversight functions and the operational management functions of the PAN and mandating different Ministry's (e.g. MoE NDU and MoA) to undertake each of these functions using the most appropriate divisions within each Ministry to implement these functions; (d) establishing a suite of different institutional arrangements for different PAs, including public-private-NGO partnership, based on the unique idiosyncrasies, needs and opportunities of each PA; and (e) retaining the current *status quo*.
- Undertaking a cost-benefit analysis of the different institutional options and selecting a preferred institutional scenario.
- Preparing an organisational change management plan for the preferred institutional scenario, including: enabling policy and legislation requirements, resource requirements (infrastructure, funding, staffing), management functions, structural considerations, etc.
- Facilitating the implementation of the organisational change management plan
- Reviewing international and regional best practice in the governance of different categories of PAs, and their efficacy in the Mauritian context.
- Developing a governance model for the PAN, and the individual PAs.
- Facilitating the establishment of cooperative governance structures for the different categories of PA, notably for privately owned or leased protected areas

Work under this output will be done under the supervision of the MoA and MoE NDU, and technically supported by the PCU and a national institutional development specialist. The international protected area consultant contracted under Output 1.1 will provide technical support to the national specialist, as required. The national institutional development specialist will, with support from the international expert, then: review international and regional best practice; identify alternative institutional models; review the cost-effectiveness of different institutional models; assess the feasibility of the preferred institutional model; develop an organisational change management plan to guide the institutional restructuring processes; develop a cooperative governance model for protected areas; and facilitate the establishment of cooperative governance structures for different categories of PAs. The PCU will facilitate and support technical discussions with the different institutional stakeholders, and host

stakeholder consultation meetings to review the alternative institutional options for government protected area agencies and the cooperative governance models. The MoA and MoE NDU will ensure that institutional reforms and cooperative governance models are supported at the level of central government and will amend/ update the enabling policy, legislative and/or regulatory framework as required (see Output 1.1).

Output 2.2: Strategic planning for PA institutions completed

Work under this output is focused on assisting PA agencies to prepare medium-term strategic plans that would effectively integrate strategic planning with budgeting and spending plans. PA institutions will be supported in moving from input-based budgeting to an output-based, results-oriented system where the use of resources (inputs) is specifically linked to objectives (outputs and outcomes) and performance.

Activities under this output include, *inter alia*:

- Defining an overall purpose or result that the institution is trying to achieve (the ‘Mission’)
- Identifying the various driving forces, or major influences, that might affect the institution
- Analyzing the institution's strengths and weaknesses, and the opportunities and threats faced by the institution.
- Establishing goals that build on strengths to take advantage of opportunities, while building up weaknesses and warding off threats.
- Depending on affordability, practicality and efficiency, establishing strategies to reach these goals and measurable strategic objectives.
- Developing a programmatic approach to achieving strategic goals and objectives.
- Within the framework of the programmatic approach, establishing credible outcomes and the related outputs, performance measures or indicators that demonstrate progress toward the strategic objectives and goals.
- Determining Medium Term Expenditure Framework (MTEF) budget allocations for the programmes and sub-programmes.
- Assigning responsibilities and indicative timelines for achieving various outcomes and outputs.
- Consolidating the above information into a *Strategic Plan* for each institution that is linked to the MTEF cycle.
- Supporting the preparation of an *Annual Performance Plan* for each institution that details the performance targets (by quarter) for each of the programme outcomes and outputs, and the associated high level budget allocations.

The PCU will, in close liaison with the affected PA institution and as needed, contract a national specialist consultant in institutional strategic planning and performance based budgeting to support the PA agencies in the preparation of a strategic plan and annual performance plan that conforms to the MoA planning and reporting requirements and the MoF manual for Programme-Based Budgeting (PBB, 2009). The national consultant will report directly to the PA institution through the responsible PBB Programme Manager, and report on progress to the Executive Committee of the institution. The consultant will, with the support of a contracted facilitator, develop and implement an internal and external consultation process to guide the formulation of the strategic plan.

Output 2.3: Financial sustainability of PA institutions improved

Work under this output is designed to support the protected area institutions in implementing the different financial mechanisms identified in the financial and business plan for the PAN (see Output 1.4) and the institutional business plan/s (see Output 2.2). It will specifically assist the PA institutions in improving their financial management systems, and diversifying their sources of finance.

The specific activities that will be undertaken include:

- Providing technical support and advice to NPCS and FS field and finance/accounting staff on the cost-effective use of financial and business planning tools in: (i) individual PA financial management; (ii) institutional budgeting, financial management, monitoring and auditing; and (iii) national government's Programme-Based Budgeting (PBB) system.
- Employing a project developer/ fund-raiser to *inter alia*: identify projects for external funding; target potential funders for projects; prepare detailed project proposals; liaise with different with different funders; and build working partnerships with funding agencies/ institutions.
- Develop tourism routes and packages that incorporate different elements of the terrestrial, marine and islets PAN that could be sold through tourism operators and hotel groups. This would include the branding, marketing and promotion of these products.
- Determining the tourism concessioning potential of the PAN; including the types of activities, their scale and rollout. On the basis of this initial assessment, identifying a site(s) and associated activity for a pilot concession agreement(s). Developing tourism/recreational concessioning process procedures, manuals and all other documentation required for concession agreements. Implementation of a pilot tourism/recreational concession agreement.
- Undertaking a detailed feasibility of, and mechanisms of potential payments for, environmental services schemes (water supply and carbon sequestration potential of restored Mauritian indigenous forests).
- Supporting the establishment and implementation of a system of entry and other user fees across the PAN. This would include: determining the willingness to pay; conducting an assessment of the appropriateness of differential pricing; deciding on pricing structures; assessing expected revenue generation; developing controlled entry points to PAs; developing compliance systems to support user fee arrangements; and monitoring the income from, and costs of, implementation.

The work under this output will be undertaken under a range of different implementation arrangements within the MoA or the affected PA institution. Project funding will be used to appoint a national financial/business planning expert and a national programme developer/fund-raiser, on retainer contracts within the MoA, to support both the NPCS and FS in: a) financial planning and management; b) programme-based budgeting; c) project design and management; and d) fund-raising. A nature-based tourism development specialist will be contracted by the PCU to a) develop and market tourism routes and packages across the PAN; b) assess and develop the tourism/recreational concessioning opportunities; and c) support the PA agencies in implementing a range of entry and other user fees across the PAN. The specialist will be supported by the financial/business planning expert in developing the pricing structures for entry to and use of the state PAs. The tourism development specialist will also establish and maintain a nature-based tourism working group comprising representatives of the Ministry of Tourism, Leisure and External Communications (Tourism Promotion Authority), private landowners/rights holders, PA agencies, tourism operators and the hotel industry. This working group will then guide and support the development of nature-based tourism products across the PAN. The international protected area consultant contracted under output 1.1 and the national legal advisor contracted under output 1.2 will provide technical support to the tourism development specialist in facilitating the tourism concessioning process and tools. An international environmental economist will be contracted by the PCU assess the feasibility of, and mechanisms of payments for, environmental services. They will recommend to the PSC, if relevant, the nature and scale of a pilot that could demonstrate the efficacy of a payment for environmental services scheme in Mauritius.

Output 2.4: Conservation stewardship unit established and pilot programme implemented

Work under this output will be guided by the action plan contained in the '*Strategy and implementation plan for a pilot stewardship programme in Mauritius*' (see Output 1.3). It is envisaged that a small (3 persons) stewardship unit will be established to pilot the implementation of a conservation stewardship program.

Although the specific activities put into action under this output will be more explicitly described in the strategy and implementation plan, it is anticipated that the following broad activities would be required:

- Staffing and equipping of a conservation stewardship unit (1 unit manager/ 3 conservation stewardship negotiators).
- Identifying, prioritising and facilitating the proclamation of: (i) all suitable state-owned mountain reserves that are not leased to the private sector; (ii) suitable state land that is not leased for used for other purposes (e.g. tea or commercial plantations)
- Visiting targeted private landowners/lessees to: introduce and explain conservation stewardship and stewardship options; document and record landowner/lessee information; and assess attitude and needs.
- Conducting an internal cost analysis of targeted private and leased land. This would include: assessing the conservation and biodiversity value of the property; evaluating the condition of, and threats to, the property; and determining resource implications for conservation management of the property.
- Entering into negotiations with targeted landowners. This would include: defining the area subject to a stewardship agreement; negotiating and drafting the stewardship agreement; ensuring legal compliance of the stewardship agreement; finalising any associated legal documentation where required; and ensuring the formal proclamation of property as and where required)
- Preparing a management plan for the affected properties to direct their conservation management and development.
- Providing ongoing professional and technical support to ‘contracted’ landowners/lessees

Project funding will be used to finance the staffing and equipping of the stewardship unit as well as its operational running costs. The PCU will facilitate the selection and appointment of unit staff and procurement of equipment. It is proposed that the stewardship unit will be institutionally located within the MoA and will provide a support service to both the FS and NPCCS in negotiating voluntary and/or contractual stewardship agreements with landowners and land use rights holders. Once these agreements are concluded, it is envisaged that the NPCCS or FS will be responsible for maintaining these agreements beyond the term of the project.

Output 2.5: Skills and competencies of PA staff improved

Work under this output is intended to support the ongoing professional and technical development of staff in the NPCCS, FS and selected staff from affected private landowners and other Ministry’s (e.g. MoE NDU) that are responsible for different aspects of the planning, development, management and administration of the PAN.

The activities under this output are directed at:

- Identifying the **desired** skills and competence standards required for effective protected area planning, development and management at the different occupational levels within the PA agencies.
- Assessing the **current** skills base and competence levels of planning and operational protected area staff in the PA agencies, and identifying the critical ‘gaps’ for the different occupational levels.
- Developing an institutional skills development and training program for the PA agencies.
- Assessing and identifying options for sourcing existing, or developing new, skills development and training programs in order to address these critical gaps in skills and raise competence standards
- Implementing short-course training and development programs for at least 40 protected area staff from the NPCCS, FS, affected private landowners and other Ministry’s (e.g. MoE NDU) in different aspects of PA planning, development and operations, including *inter alia*: strategic and business planning; staff management; financial management; risk management; stakeholder participation mechanisms; cooperative governance; knowledge management; recreational and tourism planning and management; fire management; IAS control techniques; restoration and rehabilitation techniques; legal compliance and enforcement; and monitoring and evaluation.

- Developing and implementing a mentoring and career-pathing program for four senior management staff from the NPCS and FS.
- Implementing a concentrated train-the-trainers program in IAS control and ecosystem restoration for private and public IAS team supervisors.
- Developing specialist technical skills for public and private IAS control team staff (e.g. herbicide storage and application, use of eco-plugs; ring-barking; handling of chainsaws; species identification; basic data management) and ecosystem restoration (nursery management; poisoning and trapping techniques; re-planting techniques) through ad hoc training courses conducted by IAS team supervisors.
- Collaborating with other counterpart conservation agencies (e.g. New Zealand Department of Conservation, US Fish and Wildlife – Hawaii, CapeNature, Australia’s Landcare Programme) and international NGO’s (e.g. The Nature Conservancy, WWF) to share expertise and skills on *inter alia* IAS control, conservation stewardship, PA financing and knowledge management.

An international protected area training service provider, with support from an accredited national training service provider, will: (a) develop the skills and competence standards for protected areas; (b) assess the current skills base and competence of protected area agency staff; (c) identify the critical skills and competence gaps; (d) source and/or develop relevant short-course training programs; (e) facilitate the implementation of all training and skills development programs; (f) oversee the mentoring and career development program for senior management staff of the FS and NPCS; and (e) facilitate the establishment of knowledge exchange programs with relevant counterpart conservation agencies and international NGO’s. The FS, NPCS, private landowners and other Ministry’s will select the most appropriate staff to attend the relevant training and development programs.

Outcome 3: Operational know-how in place to contain threats

104. Work under this component will support the preparation of integrated management plans for the individual protected areas. Within the framework of these management plans (and the institutional strategic plan/s developed in component 2), an IAS control programme will be scaled up in 3 demonstration sites to test the most cost-effective techniques, implementation arrangements and tools through a ‘learning by doing’ continual improvement system developed for the project. To complement this scaled-up IAS control, procedures and protocols will be developed for the identification and phased introduction of biological control agents for selected plant invasives. Rehabilitation and restoration models and techniques for different habitats under IAS control and fire management will be tested, evaluated and implemented in demonstration sites. With the expansion of protected areas in fire-prone habitats, a fire management strategy will be developed and fire incident procedures and protocols established. The effective deployment, and equipping, of compliance and enforcement capabilities across the PAN will be supported. An information support system for communication and exchange of information within and across the project will be developed and maintained.

105. The outputs necessary to achieve this outcome are described below.

Output 3.1: Integrated management plan prepared for Black River Gorges National Park

Work under this output will support the preparation of an ‘integrated park management plan’ for a demonstration PA, the Black River Gorges National Park (BRGNP). The integrated park management plan for BRGNP will comprise three complementary elements: a *strategic plan* (SMP)¹⁷; detailed

¹⁷ The SMP provides the medium-term operational framework for the prioritized allocation of resources and capacity in the management, use and development of a PA. The SMP seeks to focus PA staff on the common goals and objectives of the reserve (at the outputs and outcomes level), rather than the detailed specifics on how to get there

*subsidiary plans*¹⁸ (as required) and an *annual operational plan* (AOP)¹⁹. The order of plan development will generally flow from broad medium-term strategic management planning to progressively more specific planning²⁰. Lessons learnt from this demonstration park planning initiative will then be used to refine PA planning processes across the PAN.

The following activities will be undertaken in this output:

- Preparing a comprehensive medium-term (5-10 years) strategic management plan (SMP) for the BRGNP. The SMP may include a: contextual framework (e.g. boundaries, bio-physical features, socio-economic value, infrastructure, services); policy, legislative and regulatory framework; management objectives framework (e.g. purpose, principles, vision, goals, key result areas); use zoning framework; strategic implementation framework (e.g. actions, priorities, deliverables, indicators, responsibilities, etc.); institutional and governance framework (management authority, cooperative governance arrangements, co-management structure); and monitoring and evaluation framework.
- Preparing the requisite subsidiary plans for the BRGNP, including subsidiary plans for IAS control, ecosystem restoration and rehabilitation, and tourism and recreational development and management.
- Supporting the process of preparing a detailed annual plan of operations (AOP), and associated budget, for the BRGNP that operationalises and costs the implementation of the park SMP and subsidiary plans for a fiscal year.
- Facilitating a review and evaluation of park performance in implementing the AOP. Where targets are not being met, seeking to understand why, and initiating appropriate responses. As part of this review and evaluation process, assessing the effectiveness of management actions, new knowledge and technology, changing conditions, and any previously unforeseen circumstances.

A BRGNP Park Planning Team (PPT) will be constituted by the NPCS to oversee the development of the SMP, subsidiary plans and AOP and to undertake the performance review and evaluation. The PPT may include representation from BRGNP management staff, NPCS professional support staff, FS, MoT, MWF, neighbouring communities/landowners, University of Mauritius and Black River District Council. The PPT will be technically supported by an international protected area planning consultant and a national counterpart. A participative process will be undertaken by the service providers in the iterative drafting of the integrated management plan, including hosting focal issue-based workshops (as needed) with: research/academic institutions; adjacent private landowners or lessees; private enterprises/businesses with use rights in park; NGOs/CBO's; and/or individual specialists. The NPCS will submit the BRGNP SMP for formal government approval and adoption.

Output 3.2: Cost-effective IAS control measures, and ecosystem restoration techniques, developed and tested

Work under this output seeks to demonstrate the cost-effectiveness of significantly increasing the scale and extent of the IAS control programme in four demonstration sites:

- (i) Bel Ombre - the site covers 130ha in the south west of the BRGNP. It will link the present CMA of Fixon (4.3ha) and Fixon extension to the Beloguet CMA (2.5ha) and new Bel Ombre CMA (8ha). The site comprises transitional forest (between dry and humid forest) with some 150 native

¹⁸ Subsidiary plans are more detailed documents that follow the SMP and provide program-specific information about the broad objectives and activities preliminarily identified in the SMP (e.g. IAS control plan). Subsidiary planning then provides a bridge between the broad strategic direction provided in the SMP and the specific actions required to realize goals and objectives.

¹⁹ The AOP explicitly details the operational activities that will be undertaken for any fiscal year, and is directly linked to the PA budget for that year. The AOP will provide the framework for the annual review and performance reporting of each PA.

²⁰ It is important to distinguish which issues can most appropriately be addressed by strategic management planning, and which can be most appropriately addressed by more detailed subsidiary or implementation planning. Each level of planning has a distinctive function, and all levels are designed to interrelate with a minimum of duplication and confusion. At each level, plans will be written to demonstrate the links and relationships among the different planning levels.

flowering species recorded. It hosts highly endangered endemic native birds (pink pigeons, echo parakeet, fly catcher, Merle) and is a well known roosting site for fruit bats. The site currently has a field research station and a bird release facility.

- (ii) Brise Fer - The site covers an area of 95 ha in the centre of the BRGNP. It will link the Brise Fer CMA (25ha) to the Mare Longue CMA (3.5ha). It is envisaged that this site will, over the longer term, be the starting point for the future corridor linking all the upland CMA's (i.e. Brise Fer to Petrin). The site comprises upland forest with some 180 native flowering plant species recorded of which several are critically endangered (5 of which are locally endemic to Brise Fer). The site has a major field research station and is the main release site on the mainland of Mauritius for endangered birds (Pink Pigeon and Echo Parakeet).
- (iii) Combo - The site covers an area of 75ha in the south east of BRGNP. This site has a unique forest type/ecosystem that is exposed directly to the SE trade wind. It harbors the third largest population of pink pigeon in Mauritius and is the best breeding site for the critically endangered Olive White Eye, and also Flycatchers. It is also a permanent roosting site for fruit bats as well. The site currently has field research station and a release aviary for Pink Pigeon and Echo Parakeet.
- (iv) An area under private ownership and/or private leasehold²¹ that is a designated priority area for PA expansion.

Using the foundation of the 'IAS strategy' developed for the terrestrial forests of Mauritius in the PPG phase, work under this output will focus on the testing and implementation of the most cost-effective techniques, implementation arrangements and tools through a 'learning by doing' continual improvement system developed for this output.

Using lessons learnt from the localized management of CMA's, the activities within the four larger demonstration sites are specifically directed at:

- Actively clearing invasive alien plant species.
- Controlling and managing the effects of invasive fauna.
- Maintaining a follow-up weeding program of invasive alien plants.
- Restoring (as and where required) native plant and animal species to cleared forests.

The implementation of these activities will be specifically developed to *inter alia*:

- Test the efficacy and cost-benefits of the use of different herbicides (at different concentrations) on invasive plant species using diverse application techniques.
- Evaluate the efficacy and cost-benefits of mechanical tools and clearing methodologies (tree poppers, eco-plugs, herbicide drip brushes, blanket sprays, high altitude clearing, etc.).
- Assess the cost-effectiveness of different implementation and partnership arrangements for IAS control and ecosystem restoration (e.g. contracting, labor pools, volunteers, NGO implementation, adopt-a-plot schemes, direct institutional implementation, and implementation by private business).
- Evaluate the short-term environmental impact of different control techniques against their medium- to long-term environmental benefits and cost effectiveness. Identify measures that could be implemented to mitigate the short-term effects of cost-effective techniques and methodologies.
- Refine rehabilitation and restoration techniques and methodologies for different forest types and improve their cost-effectiveness.
- Assess optimal weeding maintenance regimes for different forest types and complement of IAS.
- Evaluate alternative cost-effective techniques for control of invasive fauna.
- Develop, release and test the efficacy of biological control agents for a target invasive plant species (i.e. Strawberry Guava or Ceylon Privet).
- Evaluate the impact of different browsing/grazing species (at different levels of density) on natural regeneration.
- Develop detailed costing models for different management scenarios of IAS control and ecosystem rehabilitation.

²¹ The final extent of the area will be identified during the conservation stewardship negotiations.

- Review the feasibility of providing financial support to private landowners/rights holders for IAS control as an incentive for their voluntary participation in incorporating land into the protected area network under a stewardship agreement.
- Identify commercial opportunities associated with IAS control (e.g. sale of poles, use of woodchips, firewood, and material for floral displays).
- Research the local population biology of key IAS (e.g. methods of seed dispersal, seed viability, seed storage, flowering and seed production).
- Assess the cost-benefit of natural rehabilitation vs. active ecosystem restoration (e.g. replanting of native species).
- Identify the most cost-effective sources of native plants for use in site-based ecosystem rehabilitation measures.

The PCU will appoint a dedicated IAS coordinator to facilitate the IAS control and ecosystem rehabilitation work across the four demonstration sites. The IAS coordinator will: (i) identify the exact location of each demonstration site; (ii) develop an adaptive work program (using a system of ‘continual improvement’) for each demonstration site to ensure that the objectives of this output are achieved; (iii) monitor and review the implementation of the work plans; (iv) closely collaborate with the NPCS, FS and private landowner/s in the development, implementation and review of the work plans; (v) collate and maintain information on lessons learnt and reports produced; and (vi) report back on progress. The IAS control and ecosystem rehabilitation will be directly implemented by the NPCS (for sites located in the BRGNP) and the affected landowner/s (for the site located on private landholding/s). The NPCS and private landowner/s may in turn sub-contract service providers, volunteers, NGO’s or other institutions to implement different aspects of the work. The IAS Coordinator will maintain a close liaison with the National Invasive Alien Species Committee (NAISC) to ensure the ongoing alignment with the strategy and objectives of the NAISS.

Output 3.3: Enforcement and compliance capability improved

Work under this output is designed to support the public PA agencies in developing a more effective compliance and enforcement capacity to mitigate the impacts of users, visitors and illegal activities in and around the PAN.

The following activities will be undertaken in this output:

- Demarcating boundaries of PAs where illegal activities, and expansion of agricultural or deer farming, are known to occur and/or originate.
- Equipping PA staff to more effectively monitor and enforce PA legislation (e.g. radio communications network)
- Developing and maintaining a basic incident management response system for the PAN (e.g. tropical storm events; outbreaks of fires; visitor accidents/search and rescue)
- Assessing the feasibility of establishing a volunteer ‘ranger service’ for the PAN
- Optimising collaboration between PAN enforcement and compliance staff and other enforcement/compliance agencies

The PCU will support the FS and NPCS in contracting short-term consultants to: (i) survey and demarcate priority PA boundaries; and (ii) developing incident management response systems. The PCU will assess the equipment needs of the PA agencies and procure equipment, as required. The FS and NPCS will: (i) collaborate in testing the feasibility of establishing a volunteer ranger service to support the current enforcement and compliance staff complement; and (ii) implement mechanisms to facilitate better inter-institutional cooperation and collaboration. Training of enforcement and compliance staff will be undertaken under Output 2.5.

Output 3.4: Information management system for recording, exchanging and disseminating information in place

Work under this output will seek to strengthen the FS and NPCS decision-support systems for protected area planning and management, and build the data management capabilities of the MoA.

The activities for this output are specifically directed at:

- Identifying, and prioritizing, the critical information (e.g. ownership/ tenure, boundaries, biodiversity, geodiversity, legal, financial, heritage, infrastructure, environmental condition, usage levels, operations, best practice, etc.) needed to support protected area system planning and management.
- Sourcing, and validating existing electronic (GIS, spreadsheets, image, etc.) or hard copy (maps, reports, tables, etc.) information.
- Identifying critical information gaps, and cost-effective mechanisms to address these gaps.
- Supporting the collection of the critical information required to fill the gaps (e.g. protected area register, vegetation map, land cover map, IAS map).
- Converting information (wherever practicable and cost-effective) into an electronic format (e.g. herbarium species data; Page and d'Argent survey data).
- Designing and establishing a simple electronic PAN information management system to facilitate the storage, retrieval and analysis of protected area data.
- Supporting the acquisition of the hardware and software to host an electronic information management system for the PAN.
- Developing simple user-driven user interfaces as decision-support tools (strategic-tactical-operational) for protected area managers.
- Supporting the installation of the networking infrastructure required for PA managers to access an electronic information management system.
- Establishing data access and data maintenance protocols for protected area information.
- Staff training in the establishment, management and maintenance of information management systems.
- Integrating the information management system for protected areas into the broader Environmental Information System (EIS) of the MoE NDU.

The PCU will appoint a national information management system specialist to provide technical support to the FS and NPCS. The information system specialist will be responsible for: (i) identifying the scope of information needs; (ii) developing data and information collection methodologies; (iii) collating existing and new information; (iv) converting information into electronic datasets; (v) designing and establishing an electronic information management system; (vi) identifying hardware, software and networking requirements; (vii) developing user interfaces to assist decision-making; (viii) developing data access and maintenance protocols; and (ix) training 2 staff members from NPCS and 1 from FS in GIS, geospatial database administration, non-spatial data management and applications development. The FS and NPCS will be responsible for: (i) sourcing, collating and validating existing information; (ii) collecting, or facilitating the collection of, new information as required; (iii) installation of software, hardware and networking as required; (iv) identification of decision-support tool needs; and (v) maintenance of the information management system.

PROJECT INDICATORS

106. The project indicators are contained in Section II / Part I (Strategic Results Framework) and include a number of 'SMART'²² impact (or 'objective') and outcome (or 'performance') indicators and targets (summarised in Table 7).

²² Specific, Measurable, Achievable, Relevant and Time-bound.

Table 7: Project objective and outcome indicators and targets

Objective / Outcomes	Indicator:	Baseline	Target (EOP)
Objective <i>Expand, and ensure effective management of, the protected area network to safeguard threatened biodiversity</i>	Coverage (ha) of the terrestrial formal protected area network of mainland Mauritius and the islets: State protected areas Private protected areas	8,027ha 0ha	11,700ha 3,220ha
	Total operational budget (including HR and capital budget) allocation (US\$) for protected area management	~US\$2.3m	>US\$4.1m
	Financial sustainability score (%) for national systems of protected areas	17%	>45%
	Capacity development indicator score (%) for protected area system: Systemic Institutional Individual	50% 56% 62%	78% 65% 82%
	METT scores for different categories of formal protected areas on mainland Mauritius and the islets National Parks (2) Bird Sanctuary (1) Nature Reserves (14) Forest Reserves (3)	40% & 58% 57% 37-65% <37%	All > 70% > 65% All > 60% All > 55%
Outcome 1 <i>Systemic framework for PA expansion improved</i>	Number of 'Land Types' ²³ included in the PAN	8 of 16	12 of 16
	Ecological corridors and marine-terrestrial linkages incorporated into the PAN	None	2 (1 in South; 1 in North) ²⁴
	Number of rare and threatened plant species (of 231 with a known distribution) having at least 1 wild population represented in the PAN. Previously considered extinct Extirpated in the wild Critically endangered Endangered Vulnerable	2 1 44 25 62	6 2 70 33 71

²³ The following land types have been classified for the mainland: Central intermediate lava plateau; Central late lava plateau; Chamarel inter-mountain valley flat & slopes; Eastern coastal valley flats & slopes; Late lava plains & inland slopes; Lower mountain slopes; NE, E & southern intermediate lava plains & slopes; NW intermediate lava plains & slopes; Riverine lands; Sand beaches & dunes; Western coastal valleys, plains & slopes; Central uplands early lava plains & slopes; Inland water body; Old volcanic mountain & gorges; Coastal salt marshes; and Lakes.

²⁴ The targeted areas are: (i) the southern corridor stretching from the SW of the island (Le Morne/Souliac/Chamarelle) across to the Bamboo mountains; and (ii) the northern corridor stretching from the NE (Le Pouce/Port Louis) across to the Aubin/Roches Noires area).

	Reach (estimated number of people in the target audience) of the communications and awareness programme	n/a	100,000
	Broad-based communications (estimated number of audience receiving different media message)	n/a	500
	Outreach programmes (number of people attending)	n/a	300
	Experiential learning programmes (number of people attending)	n/a	10 of 4
	Lobbying of key decision-makers (number of people and institutions)		
Outcome 2 <i>PA institutional framework strengthened</i>	Number of strategic plans prepared for PA institutions that are linked to the MTEF	0	2
	Income from other sources (i.e. non- state budget allocation), as a percentage of the total operational budget of the PAN	33%	54%
	Number of tourism concessions awarded	0	1
	Number of private landowners concluding stewardship agreements:		
	Informal, non-binding, agreements	0	>6
	Formal, legally binding, agreements	0	>2
	Number of planning support and operational PA staff completing specialised training and/or skills development programs		
Short course training	0	>40	
Mentoring programme	0	5	
Train-the-trainers programme	0	5	
IAS and ecosystem restoration skills development	0	50	
Partnering agreements with counterpart institutions	0	3	
Outcome 3 <i>Operational know-how in place to contain threats</i>	Number of protected areas with updated and approved management plans	1	>3
	Extent of area (ha) under active IAS management and ecosystem restoration	60	>400
	Average cost (US\$/ha) of IAS control and ecosystem restoration		
	Initial clearing and first follow-up	US\$9,000	US\$1,500
	Subsequent follow-ups	US\$1,000	US\$500
% of PAs with no, or poorly, demarcated boundaries	95%	<50%	

PROJECT RISKS

107. During the PPG phase, projects risks were updated from those presented at the PIF stage (Table 8).

Table 8: Project Risks Assessment and Mitigation Measures

RISK	RISK RATING	RISK MITIGATION MEASURES
The legal reform processes become prolonged and drawn out, resulting in delays to the expansion of the PAN into privately owned and leased areas of high biodiversity value.	H	The project will facilitate the establishment and functioning of a legal working group, within the existing governance framework of the NBSAP Committee, to guide and direct the legal reform processes. Legislative amendments that would enable, and incentivise, the formal designation of privately owned or managed land as PAs will be prioritised. Key stakeholder institutions, including the State Law Office, will be co-opted onto the working

RISK	RISK RATING	RISK MITIGATION MEASURES
		group to ensure cooperative problem-solving in the iterative drafting of the necessary legislative and regulatory amendments. The project will specifically contract an international, and counterpart national, specialist in environmental law to provide technical and specialist legal advisory support to the working group. The project will also support capacity development in the MoA to lead the legislative reform proposals through the formal approval process requirements. The implementation of PA expansion activities will then be programmed for years 3-5 of the project to provide sufficient time for the enabling legal reform processes to be completed.
Fears of expropriation and/or loss of rights hamper efforts to negotiate conservation stewardship agreements with private landowners and leaseholders	H	The project will facilitate the design, and piloting, of a conservation stewardship programme that will focus on the voluntary negotiation of a conservation stewardship agreement between an individual land owner/lessee and the relevant conservation agency. No option for expropriation of land or rights will be considered in this conservation stewardship programme. A focused communication campaign will be implemented by the programme staff to specifically respond to, and address landowners and leaseholder's apprehensions about the programme. All affected landowners (i.e. those targeted for PA expansion efforts) would then be visited by conservation stewardship staff to introduce conservation stewardship, and the stewardship options. Specific concerns and fears of individual landowners/leaseholders will first be addressed by stewardship staff prior to initiation of any negotiation process. If successfully concluded, a conservation stewardship agreement would then enable the incorporation of private land (leased or freehold title) into the PAN without any loss of ownership or rights. Where a conservation stewardship agreement is not successfully concluded (or even initiated in the case of reluctant landowners/lessees), the existing <i>status quo</i> would then be retained. A suite of incentives would be developed by, and used in, the project to encourage private landowners and leaseholders to conclude a conservation stewardship agreement.
A lack of agreement on the rationalisation of management authority for PAs sustains the fragmentation of, and institutional inefficiencies in, PA institutions	M	The need to strengthen the institutional effectiveness of the PA authorities responsible for the PAN is widely recognised by government as a strategic area requiring intervention (NBSAP and Forestry Policy, 2006). The consultative processes with government institutions undertaken during the PPG phase secured an institutional and political commitment to at least critically review, and assess, the cost-effectiveness of alternative options for the management and governance of protected areas identified during the PPG phase. This commitment will now be sustained in the project implementation phase through ongoing high level discussions with government, mediated by the MoA and UNDP. The project will focus GEF resources on continuing and building on the consultation processes with, and between, affected institutions to effect the necessary institutional reforms. The PSC will maintain and coordinate the commitment of partner public institutions in the implementation of agreed institutional and governance reforms.
Private landowners and leaseholders do not see sufficient incentive to include their land in the	M	The elements of a comprehensive incentive 'toolbox' were developed during the PPG phase. These incentives included: (i) direct financial incentives (lease fee, compensation for loss of

RISK	RISK RATING	RISK MITIGATION MEASURES
PAN without compromising the income generating opportunities from their landholdings		development rights, conservation payments, subsidized materials and equipment, tax relief, VAT exemptions, tax deductions, interest free loans, performance bonds, etc.); (ii) indirect financial incentives (land swaps, limited development rights, provision of bulk infrastructure, etc.); and (iii) non-financial incentives (technical support, skills and capacity building, marketing, formal recognition, etc.). The mechanics of each of these incentives will be further developed during the first two years of the project and, as required, legislative and regulatory amendments made to enable their implementation. The efficacy of a suite of pre-selected incentives will then be tested during the implementation of the pilot conservation stewardship programme from year 3 onward. Based on the response of landowners and leaseholders to each of these incentives, the ‘toolbox’ will be continuously adapted and updated to ensure their usefulness to private landowners and leaseholders.
The cost of the IAS control program inhibits the scaling up of demonstration sites to the landscape level	M	Significant funds are already being spent by the GM on managing IAS, but this is being disbursed in a spatially fragmented, uncoordinated and inefficient manner. Cost-effective techniques, implementation arrangements and tools for the control of invasive alien plant and animal species will be developed, implemented and tested by the project to make better use of these resources. Project investments in initial clearing will also reduce the long-term costs of maintaining these areas. Additional income generating opportunities will also be identified and facilitated to increase resources available for IAS clearing, follow-up and restoration programs at a landscape scale.
The effects of climate change will further degrade the conservation value of both the existing protected areas and those targeted for designation as protected areas, and increase the costs of their rehabilitation	L	The development of the terrestrial PAN for Mauritius will seek to integrate the protected area system into the country’s evolving climate change adaptation strategy, particularly in terms of its important role as a buffer to the economically important agricultural and tourism industries. The spatial priorities for expansion of the PAN are directed, in part, at increasing the resilience of the PAN to the impacts of climate change by improving the connectivity between formal protected areas and other conservation areas at the landscape scale. It will seek to achieve this through the: (i) establishment of upland-lowland corridors from the base of mountains (or even sea shore) to mountain peaks; (ii) preservation of terrestrial-marine links where they still exist; (iii) preservation of landscape connectivity; (iv) restoration of landscape linkages where necessary; and (v) restoration of keystone ecosystem drivers (e.g. establishment of populations of land tortoise).

INCREMENTAL REASONING AND EXPECTED GLOBAL, NATIONAL AND LOCAL BENEFITS

108. Under the **alternative scenario** the enabling legal framework for the PAN in Mauritius will adequately provide for the designation, establishment, expansion and management of a representative system of protected areas. The expansion of the current protected area estate will be guided by a strategic, time-bound action plan. The management of the protected areas comprising the protected area network will, in turn, be directed by approved management plans. The staffing complement, capacity, resources and skills base of

responsible institutions will be adequate to meet key planning, management and operational requirements for these protected areas. PA resources, information and expertise will be effectively deployed, and coordinated. The options to improve the financing of protected areas will be continuously explored, developed and tested. Visitor and tourist facilities and services will be established across the PAN, and mechanisms for cross-subsidization from income streams generated from these facilities and services will be developed. The establishment of public–private partnerships in the establishment and operation of nature-based tourism enterprises across the PAN will be explored and developed. The illegal activities in protected areas and other environmentally sensitive areas will be effectively monitored and controlled.

109. A conservation stewardship programme will be in place to facilitate the voluntary proclamation of privately owned, or managed, land as a protected area. Incentives will be developed and implemented to support conservation stewardship discussions and negotiations. Incentives will also be developed to encourage private landholders to initiate and sustain invasive alien clearing and rehabilitation activities within private or state-leased forest areas. Tourism enterprises on private land with native forest cover will be coupled to the need to control IAS in the surrounding forests, and mechanisms will be developed to formally brand conservation stewardship sites as approved eco-tourism ventures.

110. Within the protected area estate, the CMA's will continue to be effectively managed as highly successful local demonstration projects and, as resources become available, will be scaled up at the ecosystem, landscape and process (ecological and evolutionary) level. Alternative methods of integrated weed management will be developed, tested and replicated, wherever feasible. The professional, technical and operating skills base for the cost effective management of invasive alien species will be continuously developed. The need for, costs of, and benefits from, native replanting and faunal reintroduction programs in mainland forests will be properly researched and forest rehabilitation models will be tested for their efficacy, and implemented wherever feasible.

111. Communication, education and awareness programs linked to the protected area network will be properly coordinated, and form part of a strategic, sustained and focused intervention. A national pride in the unique values of the Mauritian native fauna and flora will be incrementally engendered. Structured awareness programs will be developed and implemented to inform and influence key business and political decision-makers and ensure that conservation issues are mainstreamed into the national political and economic agenda. Structural mechanisms for better integrating the wider public interests into protected area management will be developed. Key baseline information for areas of biodiversity significance and the protected areas will continue to be readily available and regularly maintained, checked and updated.

112. The increment of the project in terms of **global environmental benefits** is represented by: (i) adding 6,893 ha of terrestrial landscapes under protection; (ii) increasing management effectiveness at the PA level (from a METT baseline of <37% -65% to a METT target of all PAs scoring >55% and IUCN category II PAs >70%); (iii) improving the overall PA institutional capacity (from baseline of 56% in the Capacity Assessment Scorecard to >65%); and (iv) increasing the financial sustainability of the PAN (from a financial sustainability baseline score of 17% to >45%). In the long-term (by 2015 and beyond) threats such as the spread of invasive alien species; illegal spread of agriculture; unsustainable deer farming practices; illegal harvesting of forest products; and uncontrolled wildfires will be contained at the level of the entire expanded terrestrial PA network of the country, covering >14,920 ha. Implementation of the CBD PoWPA by Mauritius will be facilitated by project activities, especially Goals 1.1, 3.1, 3.2, and 3.4.

113. The GEF financing for the project totals US\$ 4,000,000. Total co-financing for the project total US\$ 11,764,400 broken down into: a) US\$ 1,700,000 for Component 1; b) US\$ 2,220,800 for Component 2; c) US\$ 6,667,000 for Component 3; and d) US\$ 1,176,600 for project management. Co-financing is provided the Government (MoA, MoE NDU), private land owners and MWF.

COST-EFFECTIVENESS

The project is considered cost-effective for the following primary reasons:

114. The strategic focus of project investment in the expansion of the PAN to create larger, more physically networked protected areas comprising a matrix of private and state land will yield an improvement in the management effectiveness of these areas by: (i) improving their ecological integrity and resilience; (ii) providing more secure passage for migrating fauna; (iii) building partnerships between the state and private landowners in conserving native biodiversity; (iv) improving opportunities for recreational and nature-based tourism enterprise to generate income streams to cross-subsidize management costs of the PAN; (v) rationalizing the use of sparse staff, equipment and finances; (vi) rationalizing PA boundaries to simplify enforcement and compliance; and (vii) reducing the impacts of adjacent land uses.

115. A conservation stewardship approach is increasingly being recognized as one of the most cost-effective mechanisms for securing the protection of privately owned land of high conservation value. Traditional PA establishment costs for privately owned land - typically involving land acquisition or expropriation - may vary between US\$500-1000/ha. Conversely the costs of negotiating conservation stewardship agreements with private landowners are estimated at less than US\$50/ha resulting in considerable savings to the severely under-resourced PA institutions in Mauritius. Similarly, the operational management costs of PAs by the public PA agencies, though highly variable in space and time is roughly estimated at US\$100/ha/annum (excluding IAS control and ecosystem restoration). The equivalent level of operational management by individual landowners is estimated at approximately 60% of these costs, i.e. US\$60/ha/annum (excluding the cost of financial incentives, notably for IAS control and ecosystem restoration), again a considerable saving.

116. A small short-term catalytic investment by the project in identifying appropriate financing mechanisms for the PAN, and testing the efficacy of a sub-set of these, will provide the groundwork for improving the future long-term financial viability of the PAN in Mauritius.

117. Project support in reforming and updating the enabling legislation for the PAN will, with modest costs, result in substantive long term returns, including: (i) creating an enabling regulatory framework for the future establishment of private protected areas in Mauritius; (ii) strengthening the long-term legal tenure of protected areas; (iii) clarifying institutional roles and responsibilities in the planning, administration and management of PAs; (iv) better integrating and aligning PAs with other sectoral development programs; and (v) strengthening the cooperative governance of the PAN.

118. A comparatively small investment by the project in rationalizing and strengthening the institutional competencies of PA agencies will help to focus the optimal deployment of limited resources and capacity in the ongoing improvement of the management effectiveness of the PAN in Mauritius. Project support to the focused improvement of the proficiency and skills of protected area management staff within these institutions will also ensure that the productivity and effectiveness of the limited human resources available to these institutions is enhanced and optimally deployed.

119. A modest investment in testing the cost-effectiveness of IAS control and ecosystem restoration techniques in a number of demonstration sites will contribute to significantly improving the future costs (and effectiveness) of these operations. With the improvement in the costs and efficiencies of clearing, follow-up and subsequent restoration interventions (as required), the extent of the areas cleared, maintained and rehabilitated by PA institutions can be significantly increased using the current financial resources and capacity already being deployed by the GM. The successful introduction of biological control agents will further reduce the invasive capacity of selected species, and the subsequent mechanical/chemical costs of

control of these species.

120. The cost-effectiveness of the project is further enhanced through the systematic integration of protected areas into the national development-planning framework and sectoral strategies, notably in the nature-based tourism sector. This will ensure the simultaneous attainment of biodiversity conservation objectives in the pursuit of economic development. The project will thus seek in the long-term to share the financial pressures of, and opportunities in, the management of the PAN with the private sector. This will ensure more cost-effective management of protected areas when compared to the current command and control systems of management

Alternate project approaches were considered, and are discussed here in the light of cost-effectiveness. The alternatives to this project explored include:

121. *No project*: There is currently no capacity in the NPCS and FS to finance or initiate a PA expansion programme to achieve the objectives of the NBSAP (10% of terrestrial area within PAN by 2015), and particularly not the implementation of a conservation stewardship programme on private landholdings. Without focused GEF support, initiatives to expand the PAN will continue to be addressed in an *ad hoc* and opportunistic manner, with an increasing political and public cynicism about the inherent value of the PAN. The privately owned and leased areas targeted for inclusion into the PAN will then remain unprotected, and the biodiversity value of these areas will increasingly come under pressure from other more productive land uses by landowners. Any delays in GEF investments would require more resources in order to reverse the ongoing decline in both the existing PAN and in those areas of high biodiversity significance that are targeted for future incorporation.

122. *Investment in the entire terrestrial and marine network of protected areas*: Due to the severe capacity constraints of the responsible PA agencies, it was considered more prudent to focus on the terrestrial protected areas of mainland Mauritius, and specifically on developing the capacity of those institutions responsible for their planning and management (primarily the FS and NPCS). A number of this projects activities (e.g. preparation of a ‘National Policy for Protected Areas’, preparation of a ‘PAN Expansion Strategy’, legislative and regulatory reform, public awareness programs and review of management and governance options) will also be developed to more inclusively address the entire protected area system (i.e. MPAs and PAs in Rodrigues) in Mauritius.

123. *A more comprehensive project that addresses land use planning, sustainable land use management and the mainstreaming of biodiversity into the different economic sectors*: The design and development of the protected area network has been specifically designed to complement the GEF-funded *Capacity Building for Sustainable Land Management (SLM) in Mauritius* in order to achieve the broader sustainable development objectives for Mauritius.

124. Costs incurred in project implementation will focus only on those additional actions required to provide key incremental assistance to the government in undertaking reforms in the design, planning, operational management and governance of the PAN. The project will seek to complement and build on the existing baseline activities and institutional capacities, as well as the use of existing infrastructure and equipment.

COUNTRY OWNERSHIP: COUNTRY ELIGIBILITY AND COUNTRY DRIVENNESS

125. As a party to the CBD, Mauritius is committed to implement the Programme of Work on Protected Areas (PoWPA). A preliminary analysis of key gaps in the country’s implementation of the CBD PoWPA was undertaken during the preparation of this project. Several PoWPA Goals stood out as high priorities, including: Goal 1.1 (ecological representivity); Goal 1.4 (site-based participatory planning); Goal 2.1 Action

2.1.2 (integration of communities and private sector into management); Goal 3.1 (economic valuation, positive incentives and enabling environment); Goal 3.2 (building capacities for establishing and managing PAs) and Goal 3.4 (financial sustainability). Component 1 of this project contributes towards addressing PoWPA Goals 1.1, 3.1 and 3.4, while Component 2 deals in part with Goal 2.1, 3.2 and 3.4 and Component 3 responds to selected activities of Goals 1.4, 2.1 and 3.2. The project specifically conforms to the COP 9 decision IX/18 on prioritising the implementation of PoWPA in the SIDS.

126. The Third National Report (as well as thematic reports for Forest Ecosystems and Alien and Invasive species), has been prepared by the country in conformance with COP 7 decision VII/25 of the CBD. These reports confirm the high priority placed by the GM on the protection and conservation of its forest biodiversity, and the management of a system of terrestrial protected areas as an effective mechanism for the *in situ* conservation of this biodiversity (Article 8 of the CBD). These reports emphasise that the greatest threats to the ecological integrity of the forests of Mauritius is the conversion of native forests to productive land uses, notably agriculture and deer farming, and the uncontrolled spread of invasive alien species. The reports confirm that the country places a very high priority on the expansion of the protected area network and the control of IAS, but that the resources and capacity to achieve this remains limited.

PROJECT CONSISTENCY WITH NATIONAL PRIORITIES/PLANS

127. At a national level, the *National Environmental Policy* (NEP, 2008) defines the overarching environmental objectives and strategies for Government of Mauritius. The NEP in turn provides for the implementation of the *National Biodiversity Strategy and Action Plan* (NBSAP, 2006) and *Forestry Policy* (FP, 2006). The project is consistent with the FP by specifically contributing to the: (i) expansion of the formal protection of critical forests of national importance; (ii) development of incentives for rehabilitation, restoration and reforestation of native forests in sensitive areas; and (iii) research, planning, regulation, cooperation and operational support in the control of invasive alien species. The project is also directly aligned with work programmes 1a) (terrestrial PAN) and 1 d) (adaptive management of PAN) of the NBSAP. It will make a substantive contribution to meeting the performance targets of the NBSAP (10% of terrestrial area in PAN by 2015; at least 1000 ha of PAN under intensive management; and costed and scheduled management plans that enables adaptive management for all PAs). The *National Development Strategy* (NDS, 2004) provides for the designation of a network of 'Environmentally Sensitive Areas (ESA). The draft *Strategic Management Plan for Environmentally Sensitive Areas* (SMPESA, 2009) explicitly identifies these areas and seeks to provide for the protection and conservation of Category 1 and Category 2 ESA's. The project then contributes to the implementation of the SMPESA by negotiating conservation stewardship agreements with private landowners and leaseholders with land designated as Category 1 or 2 ESA where they overlap with the priority areas for PA expansion.

SUSTAINABILITY AND REPLICABILITY

128. The project has been carefully designed to optimize prospects for achieving the sustainability of the protected area network in four areas: financial, environmental, institutional and social.

129. Financial sustainability will be strengthened through the preparation of a business-oriented financial and business plan for the PAN. At an institutional/local level, the project will provide resources to implement appropriate financing mechanisms, and evaluate their capacity to generate the income streams required to improve the management of protected areas. During the project preparation, low and high range estimates of the income that could be generated from these additional funding sources was estimated (Table 10).

Table 10. Potential sources of additional funding for PAN activities, and estimates of value (MUR, millions)

Source	Low range estimate	High range estimate
Debt for nature swap	0	0
Trust funds	57	98
Donor financing	189	207
Concession fees	30	73
Entry & activity fees	85	209
PES - carbon	5	13
PES - water	61	1,104
Total - new funding sources	428	1,704

The project will support the improvement of the financial planning and financial management capacity and skills of the public PA agencies. A key element for securing financial sustainability within the project will also be to: (i) secure the commitment of the government to increase its annual resource allocation to the management of its protected area network, specifically in financing ongoing threat mitigation measures; and (ii) to identify additional sources of funding to scale-up project activities over the medium-term.

130. In the long run, project investments would be expected to increase both the number of visitors to the PAN as well as their willingness to pay for such visits. If captured, this increased willingness to pay will increase total tourism expenditure and therefore contribute positively to the Mauritian economy. During project preparation an indication of these benefits has been estimated. Three growth projections were modeled: *Slow growth* – both tourist arrivals and tourism receipts grow at 1% per annum; *Medium growth* – tourist arrivals grow at 4% per annum, tourism receipts grow at 10% per annum; and *High growth*²⁵ – tourist arrivals grow at 8% per annum, tourism receipts grow at 19.5% per annum. Having determined tourist and revenue growth, it is assumed that the share of the tourist market (and therefore revenue) captured grows from virtually zero in year 1, to 10% of tourist arrivals in year 20 (1–10% growth), to 15% (1–15% growth) and to 20% (1–20% growth). In all cases, it is assumed that tourism receipts captured would be equivalent to an average half-day expenditure for each tourist (see Table 1).

Table 1. Net Present Value (NPV) of market share captured under tourism growth scenarios and ratio of PAN management expenditure

(MUR millions)	1–10% growth	1–15% growth	1–20% growth
Tourism growth - low	775	1,163	1,548
Tourism growth - medium	2,205	3,309	4,405
Tourism growth - high	7,010	10,524	14,010

It can be seen from Table 10 below that, except in the case of low tourism growth, in the majority of cases modeled, the increase in tourism receipts (if captured) will exceed even the highest estimates of future PAN management costs for the three different scenarios²⁶. These proportions have not been calculated for

²⁵ While this is called as ‘high growth’, it is, in fact, the average growth experienced in tourist arrivals and receipts in Mauritius over 1975–2007 (Ministry of Tourism, 2009). While the current economic crisis is likely to reduce both arrivals and receipts, it is certainly possible that such relatively high rates of growth could once again be experienced following the economic recovery.

²⁶ During project preparation three alternative scenarios were developed to estimate the projected costs of the PAN. **Scenario 1** estimates the net present value of the ‘Business as usual’ strategy – it assumes that the financial management and structure of budget allocations to the FS and NPCS remains unchanged. **Scenario 3** estimates an ‘ideal’ revised finance structure, where the proportion of human resources costs to total recurrent expenditure is reduced to 60%, and operating and overhead costs are increased to 40%. Total capital expenditure as a proportion of total recurrent costs is increased to 10% in this scenario. **Scenario 2** estimates the

Scenario 1 (business as usual), as it is extremely unlikely that the choice of this management strategy will enable an increase in tourism demand for the PAN. These proportions are obviously much higher when compared with the increase in expenditures (i.e. those expenditures above the business as usual baseline).

Table 10. Tourism receipts as a proportion of total PAN expenditure

	Scenario 2			Scenario 3		
	1–10%	1–15%	1–20%	1–10%	1–15%	1–20%
Tourism growth - low	34	51	68	27	40	53
Tourism growth - medium	97	145	193	76	113	151
Tourism growth - high	308	462	615	240	361	480

131. Environmental sustainability will be promoted in the project through the design and development of a comprehensive protected area network for Mauritius that would more effectively conserve species, habitats and ecological processes. The project will develop the enabling systemic and institutional capacity to implement a conservation stewardship programme on privately owned or leased land in priority areas of high biodiversity significance. It will test the efficacy of different incentives to encourage landowners to include their land under some form of conservation management. If successful, a conservation stewardship programme would then incrementally support the establishment of a wider network of protected and conservation areas that will contribute to achieving representivity targets for the terrestrial PAN. At the level of each protected area, the project will support the ongoing development of efficient methods to mitigate the threats to the ecological integrity of the PAN: specifically the control of IAS, ecosystem restoration and enforcement and compliance.

132. Institutional sustainability will be enhanced in the project through: (i) strengthening the enabling strategic, policy, legal and regulatory framework for protected area planning and management; (ii) clarifying the institutional roles and responsibilities for protected areas to avoid institutional duplication and overlaps, and effective deployment of resources and capacity; (iii) describing the co-operative governance arrangements for both the protected area network, and different categories of protected areas; (iv) identifying opportunities and institutional mechanisms for co-management of, and partnerships in, protected areas; (v) improving the financial sustainability of institutions; and (vi) identifying the most cost-efficient (social-environmental-financial) institution/s to manage the operations of different categories of protected areas, including private protected areas. The project will specifically seek to strengthen the competence, skills levels and occupational standards of the responsible institution/s for state protected areas. At the national level, resources will be allocated to build the systemic and institutional capacity of the MoA (NPCS and FS) to provide the enabling financial, legal, planning and decision-support framework for the PAN.

133. Social sustainability will be enhanced through the implementation of a number of individual stakeholder engagement processes developed for each of the project activities both at the macro level of the protected area network, and at the local level of the individual pilot projects and demonstration sites. Robust stakeholder engagement plans for the respective project activities will be drafted to direct broad-based involvement in all aspects of protected area network planning and development. These stakeholder engagement plans will also make strong provision for conflict management. The project will further identify mechanisms for the ongoing constructive engagement of private landowners and leaseholders, communities and the NGO sector in protected area planning, development and operations, notably through partnerships, co-management and co-operative governance. Mechanisms for optimizing the beneficiation of local communities will be identified at the level of the IAS control and ecosystem restoration in the four

midpoint between Scenarios 1 and 3 (that is, human resources are 75% of total recurrent costs, operating and overhead costs are the remaining 25%, and capital expenditure is estimated at 7.5% of total recurrent expenditure).

demonstration sites. Broad support for the conservation of native biodiversity in Mauritius will be improved through media communications, marketing, outreach programmes, experiential learning programmes and lobbying of key decision-makers.

134. **Replication** will be achieved through the direct replication of selected project elements and practices and methods, as well as the scaling up of experiences. The project will develop and use a knowledge management system (see Output 3.4) to ensure the effective collation and dissemination of experiences and information gained in the course of the project's implementation. This knowledge management system will be designed to ensure that information and data formats and flows are directed at the most relevant stakeholder groups to support decision-making processes.

135. The following project elements stand out as being most amenable to replication: (i) experience of conservation stewardship tools and processes; (ii) efficacy of different incentives to support conservation stewardship approaches (iii) identification of innovative co-management arrangements and multi-stakeholder governance structures for individual protected areas; (iv) strategic, operational, logistical, institutional and financial planning requirements for PA institutions and individual protected areas; (v) efficacy of different financing mechanisms for different categories of PAs; (vi) tools to identify the competence levels and skills required to effectively administer and manage PAs, and training programmes to address gaps; (vii) cost-effectiveness of different IAS techniques and tools; (viii) cost-effectiveness of different ecosystem restoration approaches; (ix) cost-effectiveness of different approaches to enforcement and compliance; and (x) approaches to adaptive management planning.

PART III: Management Arrangements

136. The project's implementation and execution arrangements will focus on maintaining strong collaboration and cooperation, and avoid duplication of effort, among protected area conservation initiatives in the country.

137. The project will be implemented over a period of five years. The Ministry of Agro-Industry, Food Production and Security (MoA) is the government institution responsible for the implementation of the project and will act as the *Executing Agency* (EA). UNDP is the *Implementing Agency* (IA) for the project. The project is nationally executed (NEX), in line with the Standard Basic Assistance Agreement (SBAA, 1974) between the UNDP and the Government of Mauritius, and the Country Programme Action Plan (CPAP) for 2009-2011.

138. The MoA will take overall responsibility for the project implementation, and the timely and verifiable attainment of project objectives and outcomes. It will provide support to, and inputs for, the implementation of all project activities. The MoA will nominate a high level official who will serve as the National Project Director (NPD) for the project implementation. The NPD will chair the Project Steering Committee (PSC), and be responsible for providing government oversight and guidance to the project implementation. The NPD will not be paid from the project funds, but will represent a Government in kind contribution to the Project. The NPD will be technically supported by an international Chief Technical Adviser (CTA). The CTA will support the provision of the required technical inputs, reviewing and preparing Terms of Reference and reviewing the outputs of consultants and other sub-contractors. The CTA will be recruited using standard UNDP-CO recruitment procedures and will report directly to the NPD.

139. Working closely with the MoA, the UNDP Country Office (UNDP-CO) will be responsible for: (i) providing financial and audit services to the project; (ii) recruitment of project staff and contracting of consultants and service providers; (iii) overseeing financial expenditures against project budgets approved by

PSC; (iv) appointment of independent financial auditors and evaluators; and (iv) ensuring that all activities including procurement and financial services are carried out in strict compliance with UNDP/GEF procedures. A UNDP staff member will be assigned with the responsibility for the day-to-day management and control over project finances.

140. A *National Project Steering Committee (PSC)* will be convened by the MoA, and will serve as the project's coordination and decision-making body. The PSC meetings will be chaired by the NPD. It will meet according to the necessity, but not less than once in 4 months, to review project progress, approve project work plans and approve major project deliverables. The PSC is responsible for ensuring that the project remains on course to deliver products of the required quality to meet the outcomes defined in the project document. The PSC's role will include: (i) overseeing project implementation; (ii) approving all project work plans and budgets, at the proposal of the Project Manager (PM), for submission to UNDP Regional Center in Pretoria and GEF Unit in New York; (iii) approving any major changes in project plans or programs; (iv) providing technical input and advice; (v) approving major project deliverables; (vi) ensuring commitment of resources to support project implementation; (vii) arbitrating any conflicts within the project and/or negotiating solutions between the project and any parties beyond the scope of the project; and (ix) overall project evaluation. The PSC may include in its composition, representation of the following stakeholders: MoE NDU, NPCS, Forestry Service, MoF, MoT, UNDP and the MMPA or MDCF. The PSC representation and terms of reference will be finalized in the Project Inception Workshop (IW).

141. The day-to-day administration of the project will be carried out by a *Project Coordinating Unit (PCU)* comprising a Project Manager (PM) and Project Assistant, who will be located within MoA offices (NPCS or FS). The project staff will be recruited using standard UNDP recruitment procedures. The PM will, with the support of the Project Assistant, manage the implementation of all project activities, including: (i) preparation/updates of project work and budget plans, record keeping, accounting and reporting; (ii) drafting of terms of reference, technical specifications and other documents as necessary; (iii) identification, proposal of project consultants to be approved by the PSC, coordination and supervision of consultants and suppliers; (iv) organization of duty travel, seminars, public outreach activities and other project events; and (v) maintaining working contacts with project partners at the central and local levels. The Project Manager will liaise and work closely with all partner institutions to link the project with complementary national programs and initiatives. The PM is accountable to the MoA and the PSC for the quality, timeliness and effectiveness of the activities carried out, as well as for the use of funds. The PM will produce Annual Work and Budget Plans to be approved by the PSC at the beginning of each year. These plans will provide the basis for allocating resources to planned activities. The PM will further produce quarterly operational reports and Annual Progress Reports (APR) for submission to the PSC. These reports will summarize the progress made by the project versus the expected results, explain any significant variances, detail the necessary adjustments and be the main reporting mechanism for monitoring project activities. The PM will also be technically supported by contracted national and international service providers. Recruitment of specialist services for the project will be done by the PM, in consultation with the UNDP and the MoA.

PART IV: Monitoring and Evaluation Plan and Budget

MONITORING AND REPORTING

142. Project monitoring and evaluation will be conducted in accordance with established UNDP and GEF procedures and will be provided by the project team and the UNDP Country Office (UNDP-CO) with support from the UNDP/GEF Regional Coordination Unit in Pretoria. The Logical Framework Matrix in Section II - Part I provides performance and impact indicators for project implementation along with their corresponding means of verification. The METT tool, Financial Scorecard and Capacity Assessment

Scorecard will all be used as instruments to monitor progress in PA management effectiveness. The M&E plan includes: inception report, project implementation reviews, quarterly and annual review reports, a mid-term and final evaluation. The following sections outline the principal components of the Monitoring and Evaluation Plan and indicative cost estimates related to M&E activities. The project's Monitoring and Evaluation Plan will be presented and finalized in the Project's Inception Report following a collective fine-tuning of indicators, means of verification, and the full definition of project staff M&E responsibilities.

Inception Phase

143. A Project Inception Workshop (IW) will be conducted with the full project team, relevant government counterparts, co-financing partners, the UNDP-CO and representation from the UNDP-GEF Regional Coordinating Unit. A fundamental objective of this Inception Workshop will be to assist the project team to understand and take ownership of the project's goal and objective, as well as finalize preparation of the project's first annual work plan on the basis of the logframe matrix. This will include reviewing the logframe (indicators, means of verification, assumptions), imparting additional detail as needed, and on the basis of this exercise, finalizing the Annual Work Plan (AWP) with precise and measurable performance indicators, and in a manner consistent with the expected outcomes for the project. Additionally, the purpose and objective of the IW will be to: (i) introduce project staff with the UNDP-GEF team which will support the project during its implementation, namely the CO and responsible Regional Coordinating Unit staff; (ii) detail the roles, support services and complementary responsibilities of UNDP-CO and RCU staff vis à vis the project team; (iii) provide a detailed overview of UNDP-GEF reporting and monitoring and evaluation (M&E) requirements, with particular emphasis on the Annual Project Implementation Reviews (PIRs) and related documentation, the Annual Review Report (ARR), as well as mid-term and final evaluations. Equally, the IW will provide an opportunity to inform the project team on UNDP project related budgetary planning, budget reviews, and mandatory budget re-phasing. The IW will also provide an opportunity for all parties to understand their roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms. The Terms of Reference for project staff and decision-making structures will be discussed in order to clarify for all, each party's responsibilities during the project's implementation phase.

Monitoring responsibilities and events

144. A detailed schedule of project review meetings will be developed by the project management, in consultation with project implementation partners and stakeholder representatives and incorporated in the Project Inception Report. Such a schedule will include: (i) tentative time frames for Project Steering Committee Meetings and (ii) project-related Monitoring and Evaluation activities. Day-to-day monitoring of implementation progress will be the responsibility of the Project Manager based on the project's Annual Work Plan and its indicators. The Project Manager will inform the UNDP-CO of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely and remedial fashion. The Project Manager will fine-tune the progress and performance/impact indicators of the project in consultation with the full project team at the Inception Workshop with support from UNDP-CO and assisted by the UNDP-GEF Regional Coordinating Unit. Specific targets for the first year implementation progress indicators together with their means of verification will be developed at this Workshop. These will be used to assess whether implementation is proceeding at the intended pace and in the right direction and will form part of the Annual Work Plan. Targets and indicators for subsequent years would be defined annually as part of the internal evaluation and planning processes undertaken by the project team.

145. Measurement of impact indicators related to global biodiversity benefits will occur according to the schedules defined in the Inception Workshop. Besides the METT baseline presented in this Project Document, subsequent applications of the METT are expected at the occasion of the Mid-term Evaluation

and Final Evaluation. The measurement of certain indicators will be undertaken through subcontracts or retainers with relevant institutions. Periodic monitoring of implementation progress will be undertaken by the UNDP-CO through quarterly meetings with the Implementing Partner, or more frequently as deemed necessary. This will allow parties to take stock and to troubleshoot any problems pertaining to the project in a timely fashion to ensure smooth implementation of project activities.

146. Annual Monitoring will occur through the Project Steering Committee meetings. This is the highest policy-level meeting of the parties directly involved in the implementation of a project. The project will be subject to PSC meetings at least three times a year. The first such meeting will be held within the first six months of the start of full implementation.

147. The Project Manager in consultations with UNDP-CO and UNDP-GEF RCU will prepare a UNDP/GEF PIR/ARR and submit it to PSC members at least two weeks prior to the PSC for review and comments. The PIR/ARR will be used as one of the basic documents for discussions in the PSC meeting. The Project Manager will present the PIR/ARR to the Project Steering Committee, highlighting policy issues and recommendations for the decision of the PSC participants. The Project Manager also informs the participants of any agreement reached by stakeholders during the PIR/ARR preparation on how to resolve operational issues. Separate reviews of each project component may also be conducted if necessary. The Project Steering Committee has the authority to suspend disbursement if project performance benchmarks are not met. Benchmarks will be developed at the Inception Workshop, based on delivery rates, and qualitative assessments of achievements of outputs.

148. The terminal PSC meeting is held in the last month of project operations. The Project Manager is responsible for preparing the Terminal Report and submitting it to UNDP-CO and UNDP-GEF RCU. It shall be prepared in draft at least two months in advance of the terminal PSC meeting in order to allow review, and will serve as the basis for discussions in the PSC. The terminal meeting considers the implementation of the project as a whole, paying particular attention to whether the project has achieved its stated objectives and contributed to the broader environmental objective. It decides whether any actions are still necessary, particularly in relation to sustainability of project results, and acts as a vehicle through which lessons learnt can be captured to feed into other projects under implementation of formulation.

149. UNDP Country Offices and UNDP-GEF RCU as appropriate, will conduct yearly visits to project sites based on an agreed upon schedule to be detailed in the project's Inception Report/Annual Work Plan to assess first hand project progress. Any other member of the Project Steering Committee can also accompany this visit. A Field Visit Report/BTOR will be prepared by the CO and UNDP-GEF RCU and circulated no less than one month after the visit to the project team, all Project Steering Committee members, and UNDP-GEF.

Project Reporting

150. The Project Manager in conjunction with the UNDP-GEF extended team will be responsible for the preparation and submission of the following reports that form part of the monitoring process. The first six reports are mandatory and strictly related to monitoring, while the last two have a broader function and the frequency and nature is project specific to be defined throughout implementation.

151. A Project Inception Report will be prepared immediately following the Inception Workshop. It will include a detailed First Year/ Annual Work Plan divided in quarterly time-frames detailing the activities and progress indicators that will guide implementation during the first year of the project. This Work Plan will include the dates of specific field visits, support missions from the UNDP-CO or the Regional Coordinating Unit (RCU) or consultants, as well as time-frames for meetings of the project's decision making structures. The Report will also include the detailed project budget for the first full year of implementation, prepared on

the basis of the Annual Work Plan, and including any monitoring and evaluation requirements to effectively measure project performance during the targeted 12 months time-frame. The Inception Report will include a more detailed narrative on the institutional roles, responsibilities, coordinating actions and feedback mechanisms of project related partners. In addition, a section will be included on progress to date on project establishment and start-up activities and an update of any changed external conditions that may affect project implementation. When finalized, the report will be circulated to project counterparts who will be given a period of one calendar month in which to respond with comments or queries. Prior to this circulation of the IR, the UNDP Country Office and UNDP-GEF's Regional Coordinating Unit will review the document.

152. An Annual Review Report shall be prepared by the Project Manager and shared with the Project Steering Committee. As a self-assessment by the project management, it does not require a cumbersome preparatory process. As minimum requirement, the Annual Review Report shall consist of the Atlas standard format for the Project Progress Report (PPR) covering the whole year with updated information for each element of the PPR as well as a summary of results achieved against pre-defined annual targets at the project level. As such, it can be readily used to spur dialogue with the Project Steering Committee and partners. An ARR will be prepared on an annual basis prior to the Project Steering Committee meeting to reflect progress achieved in meeting the project's Annual Work Plan and assess performance of the project in contributing to intended outcomes through outputs and partnership work. The ARR should consist of the following sections: (i) project risks and issues; (ii) project progress against pre-defined indicators and targets and (iii) outcome performance.

153. The Project Implementation Review (PIR) is an annual monitoring process mandated by the GEF. It has become an essential management and monitoring tool for project managers and offers the main vehicle for extracting lessons from ongoing projects. Once the project has been under implementation for a year, a Project Implementation Report must be completed by the CO together with the project team. The PIR should be prepared in a participatory manner in July and discussed with the CO and the UNDP/GEF Regional Coordination Unit during August with the final submission to the UNDP/GEF Headquarters in the first week of September.

154. Quarterly progress reports (QOR) are short reports outlining main updates in project progress and will be provided quarterly to the local UNDP Country Office and the UNDP-GEF RCU by the project team. Their timely and regular completion is important, as a compound report with QORs for all projects under implementation is submitted to the GEF Council at the occasion of their meetings.

155. A Combined Delivery Report (CDR) summarizing all project expenditures, is mandatory and should be issued quarterly. The Project Manager should send it to the Project Steering Committee for review and the Implementing Partner should certify it. The following logs should be prepared: (i) The Issues Log is used to capture and track the status of all project issues throughout the implementation of the project. It will be the responsibility of the Project Manager to track, capture and assign issues, and to ensure that all project issues are appropriately addressed; (ii) the Risk Log is maintained throughout the project duration to capture potential risks to the project and associated measures to manage risks. It will be the responsibility of the Project Manager in collaboration and consultation with the UNDP CO to maintain and update the Risk Log, using Atlas; and (iii) the Lessons Learned Log is maintained throughout the project to capture insights and lessons based on good and bad experiences and behaviours. It is the responsibility of the Project Manager to maintain and update the Lessons Learned Log.

156. During the last three months of the project the project team will prepare the Project Terminal Report. This comprehensive report will summarize all activities, achievements and outputs of the Project, lessons learnt, objectives met (or not achieved), structures and systems implemented, etc. and will be the definitive statement of the Project's activities during its lifetime. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the Project's activities.

157. As and when called for by UNDP, UNDP-GEF or the Implementing Partner, the project team will prepare specific Thematic Reports, focusing on specific issues or areas of activity. The request for a Thematic Report will be provided to the project team in written form by UNDP and will clearly state the issue or activities that need to be reported on. These reports can be used as a form of lessons learnt exercise, specific oversight in key areas, or as troubleshooting exercises to evaluate and overcome obstacles and difficulties encountered. UNDP is requested to minimize its requests for Thematic Reports, and when such are necessary will allow reasonable timeframes for their preparation by the project team.

158. Technical Reports are detailed documents covering specific areas of analysis or scientific specializations within the overall project. As part of the Inception Report, the project team will prepare a draft Reports List, detailing the technical reports that are expected to be prepared on key areas of activity during the course of the Project, and tentative due dates. Where necessary this Reports List will be revised and updated, and included in subsequent APRs. Technical Reports may also be prepared by external consultants and should be comprehensive, specialized analyses of clearly defined areas of research within the framework of the project and its sites. These technical reports will represent, as appropriate, the project's substantive contribution to specific areas, and will be used in efforts to disseminate relevant information and best practices at local, national and international levels.

159. Project Publications will form a key method of crystallizing and disseminating the results and achievements of the Project. These publications may be scientific or informational texts on the activities and achievements of the Project, in the form of journal articles, multimedia publications, etc. These publications can be based on Technical Reports, depending upon the relevance, scientific worth, etc. of these Reports, or may be summaries or compilations of a series of Technical Reports and other research. The project team will determine if any of the Technical Reports merit formal publication, and will also (in consultation with UNDP, the government and other relevant stakeholder groups) plan and produce these Publications in a consistent and recognizable format. Project resources will need to be defined and allocated for these activities as appropriate and in a manner commensurate with the project's budget.

INDEPENDENT EVALUATIONS, AUDITS AND FINANCIAL REPORTING

160. The project will be subjected to at least two independent external evaluations as follows: An independent Mid-Term Evaluation will be undertaken at exactly the mid-point of the project lifetime. The Mid-Term Evaluation will determine progress being made towards the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organization, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-term evaluation will be prepared by the UNDP CO based on guidance from the UNDP-GEF Regional Coordinating Unit.

161. An independent Final Evaluation will take place three months prior to the terminal Project Steering Committee meeting, and will focus on the same issues as the mid-term evaluation. The final evaluation will also look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental goals. The Final Evaluation should also provide recommendations for follow-up activities. The Terms of Reference for this evaluation will be prepared by the UNDP CO based on guidance from the UNDP-GEF Regional Coordinating Unit.

LEARNING AND KNOWLEDGE SHARING

162. Results from the project will be disseminated within and beyond the project intervention zone through a number of existing information sharing networks and forums. In addition, the project will participate, as relevant and appropriate, in UNDP/GEF sponsored networks, organized for Senior Personnel working on projects that share common characteristics. UNDP/GEF Regional Unit has established an electronic platform for sharing lessons between the project coordinators. The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation through lessons learned. The project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects. Identifying and analyzing lessons learned is an ongoing process, and the need to communicate such lessons as one of the project's central contributions is a requirement to be delivered not less frequently than once every 12 months. UNDP/GEF shall provide a format and assist the project team in categorizing, documenting and reporting on lessons learned.

AUDIT CLAUSE

163. The Government of Mauritius will provide the Resident Representative with certified periodic financial statements and an annual audit of the financial statements relating to the status of UNDP (including GEF) funds according to the established procedures set out in the Programming and Finance manuals. The Audit will be conducted according to UNDP financial regulations, rules and audit policies by the legally recognized auditor of the Government of Mauritius, or by a commercial auditor engaged by the Government.

Table 9: M&E Activities, Responsibilities, Budget and Time Frame

Type of M&E activity	Responsible Parties	Budget (US\$)	Time frame
Inception Workshop	Project Coordinator UNDP CO UNDP GEF	Cost: 10,000	Within first two months of project start up
Inception Report	Project Team UNDP CO	None	Immediately following IW
Measurement of Means of Verification for Project Purpose Indicators	Project Manager will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members	Indicative cost: 15,000 Cost to be finalized in Inception Phase and Workshop.	Start, mid and end of project
Measurement of Means of Verification for Project Progress and Performance (measured on an annual basis)	Oversight by Project Manager Project team	Indicative cost: 32,000 (8,000/annum) Cost to be determined as part of the Annual Work Plan's preparation.	Annually prior to ARR/PIR and to the definition of annual work plans
ARR and PIR	Project Team UNDP-CO UNDP-GEF	None	Annually
Quarterly progress reports	Project team	None	Quarterly
CDRs	Project Manager	None	Quarterly
Issues Log	Project Manager UNDP CO Programme	None	Quarterly

Type of M&E activity	Responsible Parties	Budget (US\$)	Time frame
	Staff		
Risks Log	Project Manager UNDP CO Programme Staff	None	Quarterly
Lessons Learned Log	Project Manager UNDP CO Programme Staff	None	Quarterly
Mid-term Evaluation	Project team UNDP- CO UNDP-GEF Regional Coordinating Unit External Consultants (i.e. evaluation team)	Cost: 40,000	At the mid-point of project implementation.
Final Evaluation	Project team, UNDP-CO UNDP-GEF Regional Coordinating Unit External Consultants (i.e. evaluation team)	Cost: 40,000	At the end of project implementation
Terminal Report	Project team UNDP-CO local consultant	0	At least one month before the end of the project
Lessons learned	Project team UNDP-GEF Regional Coordinating Unit (suggested formats for documenting best practices, etc)	Cost :12,000 (average 3,000 per year)	Annually
Audit	UNDP-CO Project team	Cost: 8,000	Annually
TOTAL indicative COST <i>Excluding project team staff time and UNDP staff and travel expenses</i>		US\$ 157,000	

PART V: Legal Context

164. This Project Document shall be the instrument referred to as such in Article I of the Standard Basic Assistance Agreement (SBAA) between the Government of Mauritius and the United Nations Development Programme, signed by the parties on 29 August, 1974. The host country-implementing agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the government co-operating agency described in that Agreement.

165. The UNDP Resident Representative in Port Louis is authorized to effect in writing the following types of revision to this Project Document, provided that he/she has verified the agreement thereto by the UNDP-EEG Unit and is assured that the other signatories to the Project Document have no objection to the proposed changes:

- a) Revision of, or addition to, any of the annexes to the Project Document;

- b) Revisions which do not involve significant changes in the immediate objectives, outputs or activities of the project, but are caused by the rearrangement of the inputs already agreed to or by cost increases due to inflation;
- c) Mandatory annual revisions which re-phase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility; and
- d) Inclusion of additional annexes and attachments only as set out here in this Project Document.

SECTION II: STRATEGIC RESULTS FRAMEWORK (SRF) AND GEF INCREMENT

PART I: Strategic Results Framework (SRF)

Objective/ Outcome	Indicator	Baseline	End of Project target	Source of Information	Risks and assumptions
Objective To expand, and ensure effective management of, the protected area network to safeguard threatened biodiversity	Coverage (ha) of the terrestrial formal protected area network of mainland Mauritius and the islets: State protected areas Private protected areas	8,027ha 0ha	11,700ha 3,220ha	Protected Area Information System Annual Reports of FS and NPCS Ministry of Housing and Lands Land Use/Class database MoE NDU ESA database	<u>Assumptions:</u> <ul style="list-style-type: none"> The government commits to an incremental growth in the grant funding allocation to finance the protected area network The financial reporting of the MoA (FS and NPCS) develops dedicated budget codes for PA planning and management functions <u>Risks:</u> <ul style="list-style-type: none"> The legal reform processes to support the effective management and expansion of the PAN become prolonged and drawn out
	Total operational budget (including HR and capital budget) allocation (US\$) for protected area management	~US\$2.3m	>US\$4.1m	Audited financial reports of FS and NPCS Audited financial reports of NEF and NCF Audited financial reports of MWF	
	Financial sustainability score (%) for national systems of protected areas	17%	>45%	Annual Financial Sustainability Scorecard	
	Capacity development indicator score (%) for protected area system:			Annual Institutional Capacity Development Scorecard	
	Systemic	50%	78%		
	Institutional	56%	65%		
Individual	62%	82%			
METT scores for different categories of formal protected areas on mainland Mauritius and the islets			METT applied at Mid-Term and Final Evaluation		

Objective/ Outcome	Indicator	Baseline	End of Project target	Source of Information	Risks and assumptions
	National Parks (2) Bird Sanctuary (1) Nature Reserves (14) Forest Reserves (3)	40% & 58% 57% 37-65% <37%	All > 70% > 65% All > 60% All > 55%		
Outcome 1 Systemic framework for PA expansion improved	Outputs: 1.1: Enabling national policy for a representative system of protected areas is formulated 1.2: Legislative and regulatory framework for the PAN is updated and reformed 1.3: Rationale for PA expansion in place, and conservation stewardship strategy and tools established to guide implementation 1.4: Business-oriented financial and business plan prepared for PAN 1.5: Awareness of the need to conserve native biodiversity is improved				
	Number of 'Land Types' ²⁷ included in the PAN	8 of 16	12 of 16	Protected Area Information System	Assumptions: – Legislative and regulatory reforms are supported and adopted by Government, and provide for the establishment of private protected areas – Land designated as category 1 and category 2 ESA's will remain under some form of protection or conservation in the medium-term – Distributional data of threatened native species is being updated and maintained Risks: – The effects of climate change degrades the conservation value of areas targeted for PAN expansion
	Ecological corridors and marine-terrestrial linkages incorporated into the PAN	None	2 (1 in South; 1 in North) ²⁸	Protected Area Information System Ministry of Housing and Lands Land Use/Class database MoE NDU ESA database	
	Number of rare and threatened plant species (of 231 with a known distribution) having at least 1 wild population represented in the PAN.			Protected Area Information System Mauritius Herbarium	
	Previously considered extinct	2	6		
Extirpated in the wild	1	2			
Critically endangered	44	70			
Endangered	25	33			
Vulnerable	62	71			
Reach (estimated number of				Project Reports	

²⁷ The following land types have been classified for the mainland: Central intermediate lava plateau; Central late lava plateau; Chamarel inter-mountain valley flat & slopes; Eastern coastal valley flats & slopes; Late lava plains & inland slopes; Lower mountain slopes; NE, E & southern intermediate lava plains & slopes; NW intermediate lava plains & slopes; Riverine lands; Sand beaches & dunes; Western coastal valleys, plains & slopes; Central uplands early lava plains & slopes; Inland water body; Old volcanic mountain & gorges; Coastal salt marshes; and Lakes.

²⁸ The targeted areas are: (i) the southern corridor stretching from the SW of the island (Le Morne/Souliac/Chamarelle) across to the Bamboo mountains; and (ii) the northern corridor stretching from the NE (Le Pouce/Port Louis) across to the Aubin/Roches Noires area).

Objective/ Outcome	Indicator	Baseline	End of Project target	Source of Information	Risks and assumptions
	people) of the communications and awareness programme Broad-based communications (estimated number of audience receiving different media message) Outreach programmes (number of people attending) Experiential learning programmes (number of people attending) Lobbying of key decision-makers (number of people and institutions)	n/a n/a n/a n/a	100,000 500 300 10 of 4		
Outcome 2 PA institutional framework strengthened	Outputs 2.1: Management and governance options for the PAN reviewed. 2.2: Strategic planning for PA institutions completed 2.3: Financial sustainability of PA institutions improved 2.4: Conservation stewardship unit established and pilot programme implemented 2.5: Skills and competencies of PA staff improved				
	Number of strategic plans prepared for PA institutions that are linked to the MTEF	0	2	Annual Reports of FS and NPCS	<u>Assumptions:</u> – Stakeholder institutions constructively engage in the identification of the most cost-effective institutional and governance arrangements for the PAN – The individual PA institutions maintain a clear mandate and unequivocal authority to fulfil oversight and management obligations for the protected area network <u>Risks:</u> – Government institutions cannot agree
	Income from other sources (i.e. non- state budget allocation), as a percentage of the total operational budget of the PAN	33%	54%	Audited financial reports of FS and NPCS Audited financial reports of NEF and NCF Audited financial reports of MWF	
	Number of tourism concessions awarded	0	1	Concession agreements	
	Number of private landowners concluding stewardship agreements: Informal, non-binding, agreements	0	>6	Stewardship agreements Project reports	

Objective/ Outcome	Indicator	Baseline	End of Project target	Source of Information	Risks and assumptions
	Formal, legally binding, agreements	0	>2		on the rationalisation of the management authority for PAs
	Number of planning support and operational PA staff completing specialised training and/or skills development programs			Training reports Project reports Annual reports of FS and NPCS	<ul style="list-style-type: none"> - Fears of expropriation and/or loss of rights hamper efforts to negotiate conservation stewardship agreements - Insufficient incentives are created to facilitate conservation stewardship negotiations
	Short course training	0	>40		
	Mentoring programme	0	5		
	Train-the-trainers programme	0	5		
	IAS and ecosystem restoration skills development	0	50		
	Partnering agreements with counterpart institutions	0	3		
Outcome 3 Operational know-how in place to contain threats	Outputs 3.1: Integrated management plan prepared for Black River Gorges National Park 3.2: Cost-effective IAS control measures, and ecosystem restoration techniques, developed and tested 3.3: Enforcement and compliance capability improved 3.4: Information management system for recording, exchanging and disseminating information in place				
	Number of protected areas with updated and approved management plans	1	>3	Annual reports of FS and NPCS	<u>Assumptions:</u> <ul style="list-style-type: none"> - A generic management planning format for PAs is adopted by all responsible PA institutions - The Government sustains, or improves, its financial commitment to IAS control and ecosystem restoration - Biological control agents will remain under development by other countries for targeted IAS, and available for release within the time frame of the project - Stakeholder groups continue to work collaboratively in IAS control and ecosystem restoration - Information to support the planning and management of the PAN is made
	Extent of area (ha) under active IAS management and ecosystem restoration	60	>400	Annual reports of FS and NPCS Project Reports	
	Average cost (US\$/ha) of IAS control and ecosystem restoration			Protected Area Information System	
	Initial clearing and first follow-up	US\$9,000	US\$1,500		
	Subsequent follow-ups	US\$1,000	US\$500		
	% of PAs with no, or poorly, demarcated boundaries	95%	<50%	Project reports Annual reports of FS and NPCS	

Objective/ Outcome	Indicator	Baseline	End of Project target	Source of Information	Risks and assumptions
					<p>available by existing public and private data suppliers</p> <p><u>Risks:</u></p> <ul style="list-style-type: none"> - The high costs of IAS clearing and maintenance inhibits the scaling up of the IAS control program across the PAN network on the mainland and islets

Part II: Incremental Cost Analysis

Global Environmental Objectives

The increment of the project in terms of global environmental benefits is represented by: (i) significantly expanding the PA estate through the addition of 6,893 ha of terrestrial landscapes under protection; (ii) increasing management effectiveness at the PA level (from a METT baseline of <37% -65% to a METT target of all PAs scoring >55% and IUCN category II PAs >70%); (iii) improving the overall PA institutional capacity (from a baseline of 56% in the Capacity Assessment Scorecard to >65%); and (iv) increasing the financial sustainability of the PAN (from a financial sustainability baseline score of 18% to >45%, as measured through UNDP's Financial Sustainability Scorecard). In the long-term (by 2015 and beyond) threats such as the spread of invasive alien species; illegal spread of agriculture; unsustainable deer farming practices; illegal harvesting of forest products; and uncontrolled wildfires will be contained at the level of the entire expanded terrestrial PA network of the country, covering >14,920 ha. Implementation of the CBD PoWPA by Mauritius will be facilitated by project activities, especially Goals 1.1, 3.1, 3.2, and 3.4.

Alternative

Under the alternative scenario, the enabling legal framework for the PAN in Mauritius will adequately provide for the designation, establishment, expansion and management of a representative system of protected areas. The expansion of the current protected area will be guided by a strategic, time-bound action plan. The management of the protected areas comprising the PAN will be directed by approved management plans. The staffing component, capacity, resources and skills within the responsible institution will be adequate to meet key planning, management and operational requirements. PA resources, information and expertise will be effectively deployed and coordinated. The options to improve the financing of PAs will be continuously explored, developed, and tested. Visitor and tourist facilities and services will be established across the PAN and mechanism for cross-subsidization from income streams generated from these facilities and services will be developed. The establishment of public-private partnerships in the establishment and operations of nature-based tourism enterprises across the PAN will be explored and developed. The illegal activities in PAs and other environmentally sensitive areas will be effectively monitored and controlled.

A conservation stewardship programme will be in place to facilitate the voluntary proclamation of privately owned, or managed, land as a protected area. Incentives will be developed and implemented to support conservation stewardship discussion and negotiations. Incentives will be developed to encourage private landholders to initiate and sustain invasive alien cleaning and rehabilitation activities within private or state-leased forest areas. Tourism enterprises on private land with native forest cover will be coupled to the need to control IAS in the surrounding forests, and mechanism will be developed to formally brand conservation stewardship sites as approved eco-tourism ventures.

The CMA's will continue to be effectively managed as highly successful local demonstration projects and, as resources become available, will be scaled up at the ecosystem, landscape and process (ecological and evolutionary) level. Alternative methods of integrated weed management will be developed, tested and replicated, wherever feasible. The professional, technical and operating skills based for the cost effective management of invasive alien species will be continuously developed. The need for, costs of, and benefits from, native replanting and fauna reintroduction programs in mainland forests will be properly researched and forest rehabilitation models will be tested for their efficacy, and implemented wherever feasible.

Communication, education and awareness programs linked to the protected area will be properly coordinated, and form part of a strategic, sustained and focused intervention. A national pride in the unique values of Mauritian native fauna and flora will be incrementally engendered. Structural mechanisms for better integrating the wider public interests into protected area management will be developed. Key baseline

information for areas of biodiversity significance and the protected area will continue to be readily available and regularly maintained, checked, and updated.

System Boundary

In biological terms, the project is focused on the *in situ* conservation of native terrestrial species, habitats and ecological processes. Geographically, the project is limited to the island of Mauritius, and associated offshore islets. The strategic emphasis of the project is the expansion, and effective management, of a network of protected areas that conserves the unique terrestrial biodiversity of Mauritius. Baseline and incremental costs have been assessed over the 5-year life span of the project.

Summary of Costs

The GEF financing for the project totals US\$ 4,000,000.²⁹ Total co-financing for the project totals US\$ 11,764,400. This is broken down as follows: a) US\$ 1,700,000 for Component 1; b) US\$ 2,220,800 for Component 2; c) US\$ 6,667,000 for Component 3; and d) US\$ 1,176,600 for project management. Co-financing is provided the Government (MoA, MoE NDU), private land owners and MWF.

The table below details the **co-financing commitment** to the project.

	Component 1	Component 2	Component 3	Project Management	Total
GoM	1,500,000	1,220,800	1,066,600	400,000	4,187,400
NGO	200,000	0	2,700,000	300,000	3,200,000
Private	0	1,000,000	2,900,400	476,600	4,377,000
Total	1,700,000	2,220,800	6,667,000	1,176,600	11,764,400

Incremental Cost Matrix

Cost/Benefit	Baseline (B)	Alternative (A)	Increment (A-B)
BENEFITS			
Global benefits	Continued reduction in populations of native fauna and flora Continuous land conversion and habitat fragmentation	The alternate scenario will ensure improvement of population of native fauna and flora, prevention of further land conversion and land fragmentation, expansion of PA, and more effective PA management.	Identified barriers are: i) capacity deficient at the systemic level, ii) limited capacities at the institutional level, and iii) weak technical capacity at the operation level.
National and local benefits	Reduced ecosystem goods and services derived from terrestrial ecosystems due to land conversion and habitat fragmentation and spread of invasive species	Under the alternative scenario, Mauritius will benefit from medium – long term increases in ecosystem services and other economic benefits from nature-based tourism because of increased ecosystem resiliency, increases populations of endemic and native species and effective protected area management (including improvement of facilities for tourists).	Enabling national policy for a representative system of PA is formulated; updated and reformed legislative and regulatory framework for the PAN; rationally expanded terrestrial PA coverage; established conservation stewardship strategy and tolls for guided implementation; business-oriented financial and business plan prepared for PAN; improved awareness of the need to conserve native biodiversity; reviewed management and governance options for the PAN; completed strategic planning for PA institution; improved financial sustainability of PA institutions;

²⁹ Net of fees and PPG costs.

Cost/Benefit	Baseline (B)	Alternative (A)	Increment (A-B)
			development of integrated management plan for Black River Gorges NP; developed and tested cost-effectiveness IAS control measures, ecosystem restoration techniques ; improved public PA agencies' capability for enforcement and compliance; established information management system for recording, exchanging and information dissemination .
COSTS			
Outcome 1: <i>Systemic framework for PA expansion improved</i>	- Expansion of the conservation estate: \$ 5,070,000 (GoM: \$5,060,000 Private: \$ 10,000)	-The enabling legal framework for the PAN for provision of the designation, establishment, expansion, and management of a representative system of protected areas. - Updated and reformed legislative and regulatory framework for PAN - PA expansion in place and conservation stewardship strategy and tools established to guide implementation - Business-oriented financial and business plan prepared for PAN for financial diversification - Improved capacity of relevant stakeholders for planning, development and management, administration of the PAN - Improved awareness of conservation of native biodiversity and increase of the public appreciation for Mauritius' unique biodiversity	GoM: \$ 1,500,000 NGO: \$ 200,000 GEF: \$ 478,000
	Sub-total baseline: \$ 5,070,000	Sub-total alternative: \$ 7,248,000	Sub-total increment:\$ 2,178,000
Outcome 2: <i>PA institutional framework strengthened</i>	- Legislative reform: \$ 250,000 (GoM: \$ 250,000) - Financing of state PAs : \$ 2,360,000 (GoM: \$ 2,360,000) - Nature-based tourism and recreation : \$ 220,000 (GoM: \$170,000, Private: \$ 50,000)	- The management of the protected areas comprising the protected area network directed by approved management plans - Improved staffing component, capacity, resources and skills within the responsible institution for key planning, management and operational requirements - Options for improvement of the financing of PAs explored, developed, and testes - Established conservation stewardship to facilitate the voluntary proclamation of privately owned, or managed, land as a protected area - Increased incentive for private landholders to initiate and sustain invasive	GoM: \$1,220,800 Private Sector: \$1,000,000 GEF: \$745,000

Cost/Benefit	Baseline (B)	Alternative (A)	Increment (A-B)
		alien cleaning and rehabilitation activities	
	Sub-total baseline: \$ 2,830,000	Sub-total alternative: \$ 5,795,800	Sub-total increment: \$ 2,965,800
Outcome 3: <i>Operational know-how in place to contain threats</i>	<ul style="list-style-type: none"> - Conservation of privately owned or leased land: \$ 140,000 (Private: \$ 140,000) - Control of IAS on state-owned land on mainland: \$ 154,000 (GoM: \$154,000) - Control of IAS on state-owned land on the islets: \$ 47,000 (GoM: \$ 47,000) - Restoration of degraded land: \$ 38,000 (GoM: \$ 30,000, Private: \$ 8,000) - Propagation of native plants for restoration programmes in PAs, and maintenance of captive breeding programmes for reintroduction into PAs \$ 235,000 (estimated combined GoM and NGO: \$ 175,000, Estimated combined NGO and Private: \$ 60,000) - Information Management : \$15,000 (estimated combined GoM and NGO: \$15,000) 	<ul style="list-style-type: none"> - Effectively monitored and controlled he illegal activities in PAs and other environmentally sensitive areas due to improved capacities of public PA agencies - PA resources, information and expertise effectively deployed and coordinated - Increased incentive for private landowners to initiate and sustain invasive alien cleaning and rehabilitation activities - Alternative and cost effective methods of integrated weed management developed, tested and replicated 	<ul style="list-style-type: none"> GoM: \$1,066,600 NGO: \$2,700,000 Private Sector: \$ 2,900,400 GEF: \$2,377,000
	Sub-total baseline: \$ 629,000	Sub-total alternative: \$9,673,000	Sub-total increment: \$9,044,000
Project Management			<ul style="list-style-type: none"> GoM: \$400,000 NGO: \$300,000 Private: \$476,600 GEF: \$400,000

Cost/Benefit	Baseline (B)	Alternative (A)	Increment (A-B)
TOTAL COSTS	TOTAL BASELINE: \$ 8,529,000	TOTAL ALTERNATIVE: \$ 22,716,800	TOTAL INCREMENT: GoM: \$ 4,187,400 NGO: \$ 3,200,000 Private: \$ 4,377,000 GEF: \$ 4,000,000 TOTAL: \$ 15,764,400

SECTION III: Total Budget and Workplan

Short Title:	3749 Mauritius PAN - Terrestrial Protected Areas Network
Award ID:	[to be added when the budget is entered into Atlas]
Award Title:	PIMS 3749 Mauritius PAN Project
Business Unit:	B0356
Project Title:	Expanding coverage and strengthening management effectiveness of the Protected Area Network on the Island of Mauritius
Implementing Partner (Executing Agency)	Ministry of Agriculture, Food Production and Security- MoA

GEF Outcome/Atlas Activity	Responsible Party/Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Total (USD)	Budget note
COMPONENT 1: Systemic framework for PA expansion improved	MoA	62000	GEF	71200	International consultants	40,000	50,000	24,000	10,000	5,000	129,000	1
				71300	Local consultants	35,000	45,000	23,000	5,000	6,000	114,000	2
				71600	Travel	4,000	6,000	3,000	2,000	2,000	17,000	3
				72100	Contractual service companies	15,000	55,000	20,000	5,000	0	95,000	4
				74200	Audio-visual and printing production costs	20,000	45,000	25,000	15,000	10,000	115,000	5
				74500	Miscellaneous	2,000	3,500	1,000	1,000	500	8,000	6
Total Outcome 1						116,000	204,500	96,000	38,000	23,500	478,000	
COMPONENT 2: PA institutional framework strengthened	MoA	62000	GEF	71200	International consultants	3,000	36,000	40,000	15,000	11,000	105,000	7
				71300	Local consultants	15,000	95,000	135,000	155,000	123,000	523,000	8
				71600	Travel	1,000	4,000	12,000	12,000	6,000	35,000	9
				72200	Equipment and furniture	0	0	20,000	6,000	0	26,000	10
				72800	Information technology equipment	0	1,000	20,000	12,000	5,000	38,000	11
				74200	Audio-visual and printing production costs	0	1,000	4,500	3,500	1,000	10,000	12
				74500	Miscellaneous	2,000	3,000	1,000	1,000	1,000	8,000	13
Total Outcome 2						21,000	140,000	232,500	204,500	147,000	745,000	
COMPONENT 3: Operational know-how in place to contain threats	MoA	62000	GEF	71200	International consultants	28,000	18,000	15,000	0	15,000	76,000	14
				71300	Local consultants	46,000	65,000	65,000	37,000	30,000	243,000	15
				71600	Travel	6,000	8,000	10,000	8,000	6,000	38,000	16
				72100	Contractual service companies	95,000	252,000	380,000	420,000	310,000	1,457,000	17
				72200	Equipment and furniture	55,000	110,000	122,000	58,000	15,000	360,000	18
				72300	Materials and goods	15,000	55,000	45,000	35,000	15,000	165,000	19
				72800	Information technology equipment	0	28,000	2,000	2,000	2,000	34,000	20
				74500	Miscellaneous	1,000	1,500	500	500	500	4,000	21
Total Outcome 3						246,000	537,500	639,500	560,500	393,500	2,377,000	
PROJECT MANAGEMENT	MoA	62000	GEF	71200	International consultants	30,000	30,000	30,000	30,000	30,000	150,000	22
				71300	Local consultants	44,800	44,800	44,800	44,800	44,800	224,000	23
				72200	Equipment and furniture	12,000	0	1,000	1,000	0	14,000	24

GEF Outcome/Atlas Activity	Responsible Party/Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Total (USD)	Budget note
				72800	Information technology equipment	9,000	1,500	500	500	0	11,500	25
				74500	Miscellaneous	100	100	100	100	100	500	26
				Total Project Management		95,900	76,400	76,400	76,400	74,900	400,000	
				PROJECT TOTAL		478,900	958,400	1,044,400	879,400	638,900	4,000,000	

Budget Notes	
1	Costs of contractual appointment of land stewardship specialist and environmental law specialist. <i>Pro rata</i> costs of contractual appointment of protected area planning and management specialist and monitoring and evaluation experts (for mid-term and final evaluation)
2	Costs of contractual appointment of business consulting service provider. <i>Pro rata</i> costs of contractual appointment of protected area planning and management consultant; legal advisor; evaluation review consultant and evaluation experts
3	<i>Pro rata</i> travel costs for international consultants and project staff. In-country travel costs for contracted specialists associated with: stakeholder engagement in the development of the national policy for PAs; preparation of the PAN expansion strategy; stakeholder engagement in the development of a strategy and implementation plan for a pilot conservation stewardship programme; assessment of the financial baselines for the PAN; implementation of outreach programmes; implementation of experiential learning programmes in PAs; and project monitoring and evaluation. Average in-country travel costs estimated at US\$0.40/km
4	Costs of contractual appointment of Marketing and Communications business on retainer contract
5	Production and printing costs of communications resources and media (newsletters, brochures, fact sheets, website, booklets, radio inserts, TV inserts, DVDs, etc.)
6	Costs associated with organizing focused specialized stakeholder engagement workshops and hosting issue-based stakeholder workshops (venue, catering, facilitation, printing, translation, etc.)
7	Costs of contractual appointment of environmental economist and skills training service provider. <i>Pro rata</i> costs of contractual appointment of protected area planning and management specialist and monitoring and evaluation experts (for mid-term and final evaluation)
8	Costs of contractual appointment of institutional development specialist, strategic planning consultant, nature-based tourism development specialist and training service provider. <i>Pro rata</i> costs of contractual appointment of protected area planning and management consultant; legal advisor; evaluation review consultant and evaluation experts. Costs of contractual appointment of a financial management advisor and a programme developer/fund-raiser for the PAN, to be positioned within the MoA organisational structure. Costs of contractual appointment of conservation stewardship project unit staff (1 project manager and 3 stewardship facilitators) that are to be placed within the MoA organisational structure.
9	<i>Pro rata</i> travel costs for international consultants and project staff. In-country travel costs for contracted specialists associated with: stakeholder engagement i.r.o. management and governance arrangements for PAN; institutional stakeholder involvement in strategic and annual planning processes for PA institutions; design of alternative PAN tourism routes and packages ; assessing tourism concessioning options; and project monitoring and evaluation. Estimated travel costs of conservation stewardship staff in visiting private landowners and rights holders in areas targeted for PA expansion. Average in-country travel costs estimated at US\$0.40/km
10	Acquisition of office equipment for 4 stewardship unit staff (stewardship manager and stewardship facilitators), the financial management advisor and the programme developer/fund-raiser – desks, chairs, tables, filing cabinets, bookcases and stationery
11	Acquisition of Laptops (6@US\$1400), software licenses (6@US\$800), portable hard drive (2@US\$200), printer (2@US\$300), data projector (1@US\$800) and mobile phone contracts (6@US\$3000) and other peripherals (@US5000) for 4 conservation stewardship unit staff, the financial management advisor and the programme developer/fund-raiser
12	Costs associated with the printing of training materials and the preparation of training programs using different communication media (e.g. web-based learning, DVD, presentation media, etc)

Budget Notes	
13	Costs associated with organizing focused specialized stakeholder engagement workshops and hosting issue-based stakeholder workshops (venue, catering, facilitation, printing, translation, etc.)
14	<i>Pro rata</i> costs of contractual appointment of protected area planning and management specialist and monitoring and evaluation experts (for mid-term and final evaluation)
15	Costs of contractual appointment of IAS Coordinator (54 months) and information management systems specialist. <i>Pro rata</i> costs of contractual appointment of protected area planning and management consultant; evaluation review consultant; evaluation experts and auditor. Costs of short-term contractual appointment of surveyors, biological research and monitoring staff, data collection staff and an incident response specialist
16	<i>Pro rata</i> travel costs for international consultants and project staff. In-country travel costs for contracted specialists associated with: stakeholder engagement in preparation of the integrated management plan for BRGNP; and survey of PA boundaries. Travel costs for enforcement and compliance volunteer rangers and volunteers involved in IAS control and ecosystem restoration programmes in PAs. Travel costs for transport of IAS control and ecosystem rehabilitation teams. Average in-country travel costs estimated at US\$0.40/km
17	Costs of contracting/employing specialist IAS control teams (using different implementation options, including labor pools, MWF, NPCS and FS staff, independent contractors and private landowner farm labor) to implement the IAS control and ecosystem restoration program in the four demonstration sites.
18	Incremental costs of boundary fencing, survey beacons and signage for demarcation of PA boundaries. Co-financing of safety equipment, communications equipment, GPS's, digital cameras and binoculars for PA enforcement and compliance staff and volunteers. Co-financing of chemicals, mechanical tools (e.g. tree poppers, slashers, chemical sprayers, axes, chainsaws), safety equipment (gloves, overalls, helmets, boots, etc), dyes, predator control stations and fencing for the four IAS control and ecosystem restoration demonstration sites.
19	Procurement of native plants (@US\$4000/ha) and tortoises (@US\$450/tortoise), as required, for the ecosystem restoration program in the demonstration sites Procurement of pre-screened bio-control agents for targeted IAS's.
20	Procurement of dedicated data server (US\$5,000), GIS and database management software (US\$20,000) and high speed data network connection (US\$1000 rental/annum). Procurement of electronic databases, as required.
21	Costs associated with organizing focused specialized stakeholder engagement workshops and hosting issue-based stakeholder workshops (venue, catering, facilitation, printing, translation, etc.)
22	Costs of contractual appointment of Chief Technical Advisor
23	Costs of contractual appointment of Project Manager and Project Assistant
24	Acquisition of office equipment for project manager and project assistant – desks, chairs, tables, filing cabinets, bookcases and stationery
25	Acquisition of 2 Laptops (2@US\$1400), software licenses (2@US\$800), portable hard drive (1@US\$200), printer (1@US\$300), data projector (1@US\$800) and mobile phone contracts (2@US\$3000) and other peripherals (@US1200)
26	Insurance, bank charges and other sundries for project coordinating unit

Summary of Funds:³⁰

	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
GEF	478,900	958,400	1,044,400	879,400	638,900	4,000,000
National Govt	604,713	1,188,734	1,045,598	782,258	566,098	4,187,400
MWF	359,011	763,941	847,277	723,304	506,467	3,200,000
Private	377,680	951,545	1,220,617	1,070,798	756,360	4,377,000
TOTAL	1,820,304	3,862,620	4,157,892	3,455,760	2,467,825	15,764,400

³⁰ All co-financing (cash and in-kind) that is not passing through UNDP.

SECTION IV: ADDITIONAL INFORMATION

PART I: Co-financing and Support Letters

The letters are attached as one separate file with 15 pages. The filename is:

[AddInfo_SECTION_IV_PART_I_CofinanSupportLetters.pdf](#)

Overview of the Project's co-financing and support letters

<i>Name of Co-financier</i>	<i>Date</i>	<i>Page</i>	<i>Type of Co-financier</i>	<i>Amounts considered as project co-financing (in USD)</i>
Ministry of Environment & National Development Unit	27-Aug-2009	2	Nat. Gov.	Support letter
Ministry of Finance and Economic Development	26-Aug-2009	3	Nat. Gov.	Support letter
Ministry of Environment and National Development Unit	17-Jul-2009	4	Nat. Gov.	587,400*
Ministry of Agro Industry, Food Production and Security	20-Jul-2009	5	Nat. Gov.	3,600,000
Baie Du Cap Estates LTD	14-Jul-2009	6	Priv. sector	80,000
Bioculture	15-Jul-2009	7	Priv. sector	422,000
CIE Sucriere De Bel Ombre Ltd.	20-Jul-2009	9	Priv. sector	1,200,000
Flacq United Estates Ltd.	13-Jul-2009	10	Priv. sector	300,000
The Medine Sugar Estates Co. Ltd.	11-Aug-2009	11	Priv. sector	2,000,000
The Mount Sugar Estate Co. Ltd	05-Aug-2009	12	Priv. sector	125,000
Deep River-Beau Champ Limited	10-Aug-2009	13	Priv. sector	250,000
Mauritian Wildlife Foundation	16-Jul-2009	15	NGO	3,200,000
Total				11,764,400

* The letter mentions an amount of 17,100,000 Mauritian Rupees (MRU), which on the date of signature corresponded to 570,000 USD (amount also mentioned in the letter. According to today's rate, this amount is 587,400 USD, which can be broken down as follows: (a) Data, maps, reports and sundries \$515,263; (b) Representation in the Steering Committee \$17,169; and (c) PA rangers & workers \$54,968.

PART II: METT, Capacity Development and Financial Scorecards

The METT and scorecards are attached as one separate file with 292 pages. The filename is:

[AddInfo_SECTION_IV_PART_II_METT_and_Scorecards.doc](#)

Note:

Parts III through IX in this section (overview follow below) are all consultant's technical reports that were produced in connection with the PPG and corroborate the analysis embedded in this PRODOC. The reports are voluminous and contain many maps. They have been added to the PRODOC as one separate file, where the reports are presented one by one in the order below. Some images contained in the original documents were downsampled to reduce the overall file size. A full resolution file may be provided upon request to UNDP.

The filename is:

[AddInfo SECTION IV PARTS IIX thru IX reports.pdf](#)

PART III: Economics input

PART IV: Overview of the forests and terrestrial protected area network

PART V: Assessment of the current institutional context for the PAN and identification of strengths, weakness and opportunities

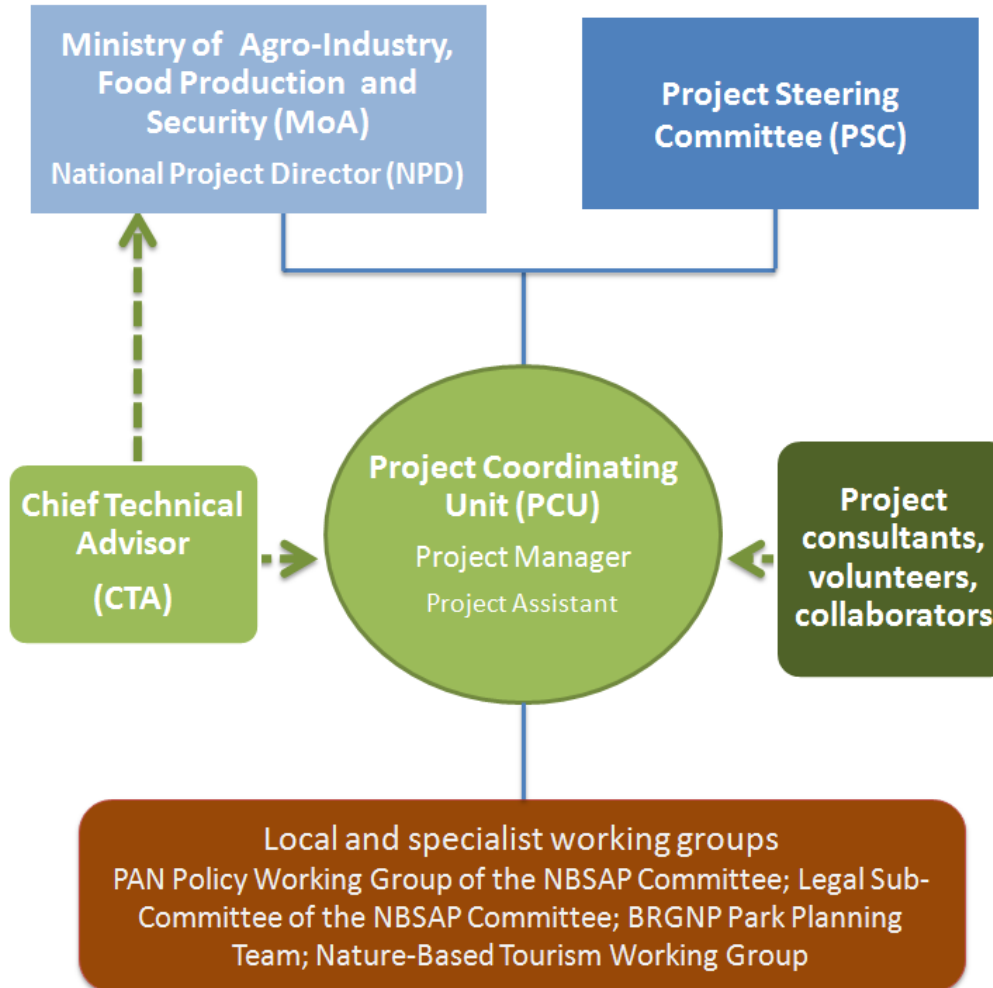
PART VI: Policy and legal input

PART VII: Assessment of the terrestrial biodiversity priority areas

PART VIII: Invasive alien species strategic and action plan development for the PAN

PART IX: Incentive measures for biodiversity conservation on private lands

PART IX: Organogram of Project



PART X: Terms of References for key project staff

PROJECT MANAGER

Background

The Project Manager (PM), will be regionally recruited based on an open competitive process. He/She will be responsible for the overall management of the project, including the mobilization of all project inputs, supervision over project staff, consultants and sub-contractors. The PM will report to the UNDP-CO, in close consultation with the host institution for all of the project's substantive and administrative issues. From the strategic point of view of the project, the PM will report on a periodic basis to the Project Steering Committee (PSC). Generally, the PM will be responsible for meeting government obligations under the project, under the national execution modality (NEX). He/She will perform a liaison role with the Government, UNDP and other UN Agencies, NGOs and project partners, and maintain close collaboration with any donor agencies providing co-financing.

Duties and Responsibilities

- Supervise and coordinate the production of project outputs, as per the project document;
- Mobilize all project inputs in accordance with UNDP procedures for nationally executed projects;
- Supervise and coordinate the work of all project staff, consultants and sub-contractors;
- Coordinate the recruitment and selection of project personnel;
- Prepare and revise project work and financial plans, as required by UNDP;
- Liaise with UNDP, relevant government agencies, and all project partners, including donor organizations and NGOs for effective coordination of all project activities;
- Facilitate administrative backstopping to subcontractors and training activities supported by the Project;
- Oversee and ensure timely submission of the Inception Report, Combined Project Implementation Review/Annual Project Report (PIR/APR), Technical reports, quarterly financial reports, and other reports as may be required by UNDP, GEF, DGA and other oversight agencies;
- Disseminate project reports and respond to queries from concerned stakeholders;
- Report progress of project to the steering committees, and ensure the fulfilment of steering committees directives.
- Oversee the exchange and sharing of experiences and lessons learned with relevant community based integrated conservation and development projects nationally and internationally;
- Ensures the timely and effective implementation of all components of the project;
- Assist community groups, municipalities, NGOs, staff, students and others with development of essential skills through training workshops and on the job training thereby upgrading their institutional capabilities;
- Coordinate and assists scientific institutions with the initiation and implementation of all field studies and monitoring components of the project
- Assists and advises the teams responsible for documentaries, TV spots, guidebooks and awareness campaign, field studies, etc; and
- Carry regular, announced and unannounced inspections of all sites and the activities of any project site management units.

Qualifications

- A university degree (preferably a MS or PhD) in Environmental or Natural Sciences;
- At least 10 years of experience in natural resource planning and management (preferably in the context of protected area planning and management);
- At least 5 years of project/programme management experience;

- Working experience with the project national stakeholder institutions and agencies is desired;
- Ability to effectively coordinate a large, multi-stakeholder project;
- Ability to administer budgets, train and work effectively with counterpart staff at all levels and with all groups involved in the project;
- Strong drafting, presentation and reporting skills;
- Strong computer skills;
- Excellent written communication skills; and
- A good working knowledge of English is a requirement. A working knowledge of French is desired.

PROJECT ASSISTANT

Background

The Project Assistant will be locally recruited based on an open competitive process. He/She will be responsible for the overall administration of the project. The Project Assistant will report to the Project Manager. Generally, the Project Assistant will be responsible for supporting the Project Manager in meeting government obligations under the project, under the national execution modality (NEX).

Duties and Responsibilities

- Collect, register and maintain all information on project activities;
- Contribute to the preparation and implementation of progress reports;
- Monitor project activities, budgets and financial expenditures;
- Advise all project counterparts on applicable administrative procedures and ensures their proper implementation;
- Maintain project correspondence and communication;
- Support the preparations of project work-plans and operational and financial planning processes;
- Assist in procurement and recruitment processes;
- Assist in the preparation of payments requests for operational expenses, salaries, insurance, etc. against project budgets and work plans;
- Follow-up on timely disbursements by UNDP CO;
- Receive, screen and distribute correspondence and attach necessary background information;
- Prepare routine correspondence and memoranda for Project Managers signature;
- Assist in logistical organization of meetings, training and workshops;
- Prepare agendas and arrange field visits, appointments and meetings both internal and external related to the project activities and write minutes from the meetings;
- Maintain project filing system;
- Maintain records over project equipment inventory; and
- Perform other duties as required.

Qualifications

- A post-school qualification (diploma, or equivalent);
- At least 5 years of administrative and/or financial management experience;
- Demonstrable ability to administer project budgets, and track financial expenditure;
- Demonstrable ability to maintain effective communications with different stakeholders, and arrange stakeholder meetings and/or workshops;
- Excellent computer skills, in particular mastery of all applications of the MS Office package;
- Excellent written communication skills; and
- A good working knowledge of English and French.

CHIEF TECHNICAL ADVISER

Background

The Chief Technical Adviser (CTA) will be responsible for providing overall technical backstopping to the Project. He/She will render technical support to the National Project Director, Project Manager, PA agency staff and other government counterparts. The CTA will support the provision of the required technical inputs, reviewing and preparing Terms of Reference and reviewing the outputs of consultants and other sub-contractors. He/She will report directly to the National Project Director.

Duties and Responsibilities

- Provide technical support to the National Project Director, Project Manager and other government counterparts in the areas of project management and planning, management of site activities, monitoring, and impact assessment;
- Support the Project Manager in preparing Terms of Reference for consultants and sub-contractors, and assist in the selection and recruitment process;
- Support the Project Manager in coordinating the work of all consultants and sub-contractors, ensuring the timely delivery of expected outputs, and ensuring an effective synergy among the various sub-contracted activities;
- Assist the National Project Director and Project Manager in the preparation of the Combined Project Implementation Review/Annual Project Report (PIR/APR), inception report, technical reports, quarterly financial reports for submission to UNDP, the GEF, other donors and Government Departments, as required;
- Assist the National Project Director and Project Manager in mobilizing staff and consultants in the conduct of a mid-term project evaluation, and in undertaking revisions in the implementation program and strategy based on evaluation results;
- Assist the National Project Director and Project Manager in liaison work with project partners, donor organizations, NGOs and other groups to ensure effective coordination of project activities;
- Support the Project Manager in documenting lessons from project implementation and make recommendations to the Steering Committee for more effective implementation and coordination of project activities; and
- Perform other tasks as may be requested by the National Project Director and Project Manager.

Qualifications

- University education (MS or PhD), with specific expertise in the area of protected area and/or conservation planning and management;
- At least 15 years of professional experience in protected area/conservation planning and management;
- Demonstrable experience in implementing equivalent GEF or other multilateral donor-funded projects;
- Be an effective negotiator with excellent oral and presentation skills;
- A good working knowledge of international best practice in protected area planning and management is desirable;
- Excellent writing skills; and
- Fluency in English is required. A working knowledge of French is desirable.

OVERVIEW OF INPUTS FROM TECHNICAL ASSISTANCE CONSULTANTS

Position Titles	\$/ person week*	Estimated person weeks**	Tasks to be performed
Local			
Project Manager	593.93939	240	See above – contributes in fact to project management.
Project Assistant	339.39394	240	See above – contributes in fact to project management.
Protected area planning and management consultant	1000	70	In collaboration with the international protected area planning and management specialist: <u>Output 1.1</u> - Conduct a global review of best practice in PA planning and management; define the vision, principles and values for a PAN; rationalise and align the PA classification system and management objectives with IUCN guidelines; develop a standardised approach to PA establishment processes for different PA categories; prepare operational guidelines for PA planning and management; identify the governance arrangements for different categories of PAs and for the PAN; define the M&E requirements for the PAN; identify the institutional roles and responsibilities for the PAN; consultatively prepare the ‘national policy for protected areas in Mauritius’ <u>Output 1.3</u> - Develop the ‘case’ for the expansion of the PAN; define explicit spatial targets for the expansion of the PAN; identify the approach to, and mechanisms for, the expansion of the PAN; consultatively prepare a ‘PAN expansion strategy for Mauritius’ <u>Output 3.1</u> – Consultatively prepare a medium-term SMP for the BRGNP; prepare subsidiary plans for BRGNP; support the preparation of an AOP for BRGNP; facilitate the review and evaluation of park performance in implementing the AOP
Legal advisor	1000	24	In collaboration with the international specialist in environmental law: <u>Output 1.2</u> - Make recommendations for legislative and regulatory reform to PA legislation; make recommendations on how to better align PA legislation with other complementary legislation; draft specific amendments to PA legislation and regulations.
Business consulting service provider	1000	36	<u>Output 1.4</u> - Update the financial baseline for the PAN; identify the medium-term ‘financial gap’ for the PAN; assess the functionality of the current PA agencies financial management systems; evaluate the feasibility of different financing mechanisms for the PAN; define the legal and structural requirements for viable PAN financing mechanisms; consultatively prepare a ‘financial and business plan for the PAN’ <u>Output 2.3</u> – Assess the pricing structures for entry, and other user fees, across the PAN; determine the optimal fee structures for tourism/recreational concessions
Marketing and communications service provider	1000	80	<u>Output 1.5</u> - Design marketing and communications materials and media; implement a broad-based media communications campaign
Institutional development specialist	1000	40	In collaboration with the international protected area planning and management consultants, undertake the following: <u>Output 2.1</u> - Review international and regional best practice in

Position Titles	\$/ person week*	Estimated person weeks**	Tasks to be performed
			PA governance; identify alternative institutional models; review the cost-effectiveness of different institutional models; assess the feasibility of the preferred institutional model; develop an organisational change management plan to guide institutional restructuring processes; develop a cooperative governance model for protected areas; facilitate the establishment of cooperative governance structures for different categories of PAs
Strategic planning consultant	1000	65	<u>Output 2.2</u> – For each institutions: define the institutional mission; undertake a SWOT analysis; describe the institutional medium-term goals, strategies and objectives; establish outcomes, outputs; develop performance management indicators; and targets; collate MTEF budget allocations; describe roles and responsibilities; identify indicative timelines for deliverables; consultatively prepare a ‘Strategic Plan’ and ‘Annual Performance Plan’
Nature-based tourism development specialist	1000	40	<u>Output 2.3</u> - Develop and market tourism routes and packages across the PAN; assess and develop tourist/recreational concessioning opportunities; support the implementation of entry and other user fees in PAs; establish and maintain a tourism working group to guide and support the development of nature-based tourism products across the PAN
Training service provider	1000	30	<u>Output 2.5</u> - assess the current skills base and competence of protected area agency staff; identify the critical skills and competence gaps; source and/or develop relevant short-course training programs; facilitate the implementation of all training and skills development programs; oversee the mentoring and career development program for senior management staff of the FS and NPCS; facilitate the establishment of knowledge exchange programs with relevant counterpart conservation agencies and international NGO’s
IAS control and ecosystem rehabilitation coordinator	1000	80	<u>Output 3. 2</u> - Identify the exact location of each IAS demonstration site; develop an adaptive work program for each demonstration site to ensure that the objectives of this output are achieved; monitor and review the implementation of the work plans; closely collaborate with the NPCS, FS and private landowner/s in the development, implementation and review of the work plans; collate and maintain information on lessons learnt and reports produced; report back on progress
Information management system specialist	1000	45	<u>Output 3.4</u> - identifying the scope of information needs; developing data and information collection methodologies; collating existing and new information; converting information into electronic datasets; designing and establishing an electronic information management system; identifying hardware, software and networking requirements; developing user interfaces to assist decision-making; developing data access and maintenance protocols; and training designated staff members from NPCS and FS in GIS, geospatial database administration, non-spatial data management and applications development
Monitoring and evaluation review consultant	1000	35	Participate in drafting mid-term and final evaluation report/s; local liaison with project team, government and UNDP during project evaluation; liaison with the counterpart international monitoring and evaluation expert; participate in discussions to

Position Titles	\$/ person week*	Estimated person weeks**	Tasks to be performed
			realign the project time-table/log frame at the mid-term stage
Evaluation experts	1000	10	The standard UNDP/GEF project evaluation TOR will be used. This will include: participate, alongside the international consultants, in the mid-term and final evaluation of the project, in order to assess the project progress, achievement of results and impacts; develop draft evaluation report and discuss it with the project team, government and UNDP; as necessary, participate in discussions to realign the project time-table/logframe at the mid-term stage
Auditor	1000	6	Mid-term and final independent audit of project expenditure as per UNDP/GEF standard ToR
International			
Chief Technical Advisor	3,000	50	See above – contributes in fact to project management.
Protected Area planning and management specialist	3,000	40	In collaboration with the national protected area planning and management consultant: <u>Output 1.1</u> - Conduct a global review of best practice in PA planning and management; define what constitutes a formal protected area for Mauritius; define the vision, principles and values for a PAN; rationalise and align the PA classification system and management objectives with IUCN guidelines; develop a standardised approach to PA establishment processes for different PA categories; prepare operational guidelines for PA planning and management; identify the governance arrangements for different categories of PAs and for the PAN; define the M&E requirements for the PAN; identify the institutional roles and responsibilities for the PAN; consultatively prepare the ‘national policy for protected areas in Mauritius’ <u>Output 1.3</u> - Develop the ‘case’ for the expansion of the PAN; define explicit spatial targets for the expansion of the PAN; identify the approach to, and mechanisms for, the expansion of the PAN; consultatively prepare a ‘PAN expansion strategy for Mauritius’ <u>Output 2.1</u> – Support the cost-benefit analysis of institutional and governance options for the PAN <u>Output 2.2</u> – Support the preparation of strategic and annual performance plans for PA institutions <u>Output 2.3</u> – Support the development of tourism/recreational concession processes in the PAN <u>Output 3.1</u> – Consultatively prepare a medium-term SMP for the BRGNP; prepare subsidiary plans for BRGNP; support the preparation of an AOP for BRGNP; facilitate the review and evaluation of park performance in implementing the AOP
Environmental law specialist	3,000	10	In collaboration with the national legal advisor: <u>Output 1.2</u> Review international best practice in PA legislation; make recommendations for legislative and regulatory reform to PA legislation in Mauritius; make recommendations on how to better align PA legislation with other complementary legislation; consultatively draft specific amendments to PA legislation and regulations

Position Titles	\$/person week*	Estimated person weeks**	Tasks to be performed
Land stewardship specialist	3,000	10	In collaboration with the national and international protected area planning and management consultants: <u>Output 1.3</u> Develop a strategic approach to conservation stewardship; identify the explicit activities needed to pilot conservation stewardship in the PAN; define the financial and human resource requirements for conservation stewardship; clarify the institutional roles and responsibilities for conservation stewardship; describe the knowledge management requirements for conservation stewardship; develop stewardship procedures and templates; develop a suite of regulatory, optional and negotiable incentives for private landholders; identify mechanisms to integrate conservation stewardship into the ESA strategies and legislation; consultatively prepare a 'strategy and implementation plan for a pilot stewardship programme'
Environmental economist	3,000	12	<u>Output 2.3</u> - Assess the feasibility of, and mechanisms for, payments for environmental services; assess the
Skills training service provider	3,000	10	<u>Output 2.5</u> - develop the skills and competence standards for protected areas; assess the current skills base and competence of protected area agency staff; identify the critical skills and competence gaps; source and/or develop relevant short-course training programs; facilitate the implementation of all training and skills development programs; oversee the mentoring and career development program for senior management staff of the FS and NPCS; facilitate the establishment of knowledge exchange programs with relevant counterpart conservation agencies and international NGO's
Evaluation experts for mid-term and final evaluation	3,000	18	The standard UNDP/GEF project evaluation TOR will be used. This will include: Lead the mid-term and the final evaluations; Work with the local evaluation consultant in order to assess the project progress, achievement of results and impacts; develop draft evaluation report and discuss it with the project team, government and UNDP; As necessary participate in discussions to extract lessons for UNDP and GEF

PART XI: Stakeholder Involvement Plan

STAKEHOLDER IDENTIFICATION

During the project preparation stage, a stakeholder analysis was undertaken in order to identify key stakeholders, assess their interests in the project and define their roles and responsibilities in project implementation. Table 10 below describes the major categories of stakeholders identified, and the level of involvement envisaged in the project.

Table 10: Key stakeholders and roles and responsibilities

Stakeholder	Roles and Responsibilities
Ministry of Agro-Industry, Food Production and Security (MoA)	MoA will be responsible for the overall coordination of the project. It will, through its FS and NPCS divisions, be a primary beneficiary of project activities. The MoA will chair the national Project Steering Committee (PSC)
Forestry Service (FS)	The FS will be a major project implementing partner. At the systemic and institutional level, it will actively participate in and support the implementation of all the project activities, including any legal and institutional reform processes. At the operational level it will supervise and/or directly implement project activities within all forest reserves, nature reserves and the <i>Pas Géométriques</i> . It will work closely with private landowners and leaseholders in the mountain reserves and river reserves. At the individual level, it will identify staff to participate in project training and skills development interventions. It will facilitate the proclamation, as and where appropriate, of undetermined forest land as formal PAs. It will also support conservation stewardship negotiations with affected leaseholders of state land for deer farming. The FS will have representation on the PSC and most local working groups.
National Parks and Conservation Service (NPCS)	The NPCS will be a major project implementing partner. At the systemic and institutional level, it will actively participate in and support the implementation of all the project activities, including any legal and institutional reform processes. At the operational level it will supervise and/or directly implement project activities within all national parks and bird sanctuaries. At the individual level, it will identify staff to participate in project training and skills development interventions. It will support conservation stewardship negotiations with affected landowners and leaseholders of state land where these landholdings are adjacent to national parks and/or bird sanctuaries. The NPCS will have representation on the PSC and most local working groups.
Ministry of Environment and National Development Unit (MoE NDU)	The MoE NDU is an important project partner. It will ensure the alignment of project activities (i.e. preparation of protected area policy; legislative and regulatory reform; identification of priority areas for PA expansion; development of incentives toolbox for conservation stewardship; review of institutional roles and responsibilities; funding of financial incentives for private landholders; enforcement and compliance and information management) with the implementation of the Strategic Management Plan for Environmentally Sensitive Areas (ESA). They will also ensure that project activities are integrated with the ESA Conservation and Management Act if it is promulgated as envisaged. The MoE NDU will have representation on the PSC and will participate in some local working groups.
Ministry of Tourism, Leisure and External Communications (MoT)	The MoT will provide support to the implementation of the following project activities: (i) development of communications resources and media; (ii) development of tourism products, routes and packages for the PAN; (iii) tourism/recreational concessioning in the PAN; (iv) entry and user fee

Stakeholder	Roles and Responsibilities
	structures for PAs; and (v) development of tourism and recreational infrastructure in PAs. The MoT will have representation of the PSC and will participate in the ‘nature-based tourism working group’.
Ministry of Housing and Lands (MoHL)	The MoHL will ensure the compatibility, wherever practically feasible, of land use designation with the objectives of the different categories of ESA’s and areas of high conservation value targeted for future PAs in the PAN expansion strategy. They will facilitate the allocation of unused state land in high priority conservation areas for the purposes of establishing a PA. They will also provide technical support to, and provide key datasets for, the PAN information management system. The MoHL will have representation on the PSC.
Ministry of Finance and Economic Empowerment (MoF)	The MoF are the GEF Focal Point for the project. They will ensure adequate grant allocation funding to the MoA to implement its PA mandate. The MoF will strive to source additional funding to support projects that may be developed to complement GEF-funded activities. The MoF will have representation on the PSC.
State Law Office (SLO)	The SLO is an important project partner. They will actively engage in the project through providing support to the legislative and regulatory reform processes that will be required to create a more enabling environment for PA expansion and effective PA planning and management. The SLO will be represented on the PSC.
Ministry of Local Government, Rodrigues and Outer Islands (MoLG): Municipal and District Councils	The project will work closely with the affected municipal and district councils to align the municipal/district ‘outline schemes’ with the priority areas identified for PA expansion.
Mauritian Wildlife Foundation (MWF)	The MWF will be encouraged to take an active role in implementing project activities as a specialist service provider. Where they are not directly implementing a project activity (such as conducting awareness campaigns and producing educational materials), the MWF may actively participate in, and iteratively comment on, <i>inter alia</i> the:(i) preparation of the PA policy; (ii) legislative and regulatory reform recommendations; (iii) drafting of the PA expansion strategy; (iv) review of management and governance options for the PAN; and (v) strategic plans for PA institutions and individual PAs.
University of Mauritius (UM)	The UM may be sub-contracted to provide specialist and technical inputs into different project activities, as appropriate. The UM may provide important datasets for the PA information management system.
Private landowners and lease holders	Private landowners and leaseholders are important project partners. The project will engage key landowners and leaseholders (as spatially indicated in the pilot conservation stewardship programme) on an individual case-by-case basis to negotiate the voluntary incorporation of land into the PAN. Where successful, the outcomes of this negotiation are then documented in a conservation stewardship agreement between the landowner/lease holder and the state. The project may, subject to the nature of the conservation stewardship agreement then provide specific financial (e.g. funding for IAS control) and other (e.g. involvement in tourism products and packages, technical support) incentives to contracted landowners and leaseholders.
Mauritius Sugar Industry Research Institute (MSIRI) and Mauritius Herbarium (MH)	The MSIRI and/or the MH may be sub-contracted to provide specialist and technical inputs into different project activities, as appropriate. The MSIRI and MH may provide access to, or host, important datasets for the PA information management system.
Mauritius Meat Producers Association (MMPA) and Mauritius Deer Cooperative Federation (MDCF)	The MMPA and MDCF will represent the interests of the leaseholders of state land for deer farming and hunting during project implementation, notably in the case of legal and regulatory reforms (i.e. Shooting and Fishing Act), development of incentives for conservation stewardship, enforcement

Stakeholder	Roles and Responsibilities
	and compliance, IAS control and data for the PA information management system.
National and local press and media	The project will cooperate with national and local press and media on public awareness issues.
UNDP-Mauritius	The roles and responsibilities of UNDP-Mauritius will include: (i) ensuring professional and timely implementation of the activities and delivery of the reports and other outputs identified in the project document; (ii) coordinating and supervising of the project activities; (iii) assisting and supporting the PCU and PSC in organizing, coordinating and where necessary hosting all project meetings; (iv) contracting of and contract administration for qualified project team members; (v) managing all financial administration; and (vi) establishing an effective networking between project stakeholders, specialized international organizations and the donor community. The UNDP will be a member of the Steering Committee

INFORMATION DISSEMINATION, CONSULTATION, AND SIMILAR ACTIVITIES THAT TOOK PLACE DURING THE PPG

Throughout the project's development, very close contact was maintained with all stakeholders at the national level. All affected national government institutions were directly involved in project development, as were research and academic institutions and NGO's. Numerous consultations occurred with all of the above stakeholders to discuss different aspects of project design. These consultations included: bilateral discussions; site visits to pilot sites; consolidated workshops and electronic communications. A working group, with representation of all key national stakeholders, was constituted by the as the National Project Director (Director of National Parks and Conservation Service) to oversee the project preparation phase. The final project activities was presented to stakeholders at a working group meeting for review and discussions, and a final draft of the project brief was presented to a follow-up working group meeting for approval and endorsement.

APPROACH TO STAKEHOLDER PARTICIPATION

The projects approach to stakeholder involvement and participation is premised on the principles outlined in Table 11 below.

Table 11: Stakeholder participation principles

Principle	Stakeholder participation will:
Value Adding	Be an essential means of adding value to the project
Inclusivity	Include all relevant stakeholders
Accessibility and Access	Be accessible and promote access to the process
Transparency	Be based on transparency and fair access to information; main provisions of the project's plans and results will be published in local mass-media
Fairness	Ensure that all stakeholders are treated in a fair and unbiased way
Accountability	Be based on a commitment to accountability by all stakeholders
Constructive	Seek to manage conflict and promote the public interest
Redressing	Seek to redress inequity and injustice
Capacitating	Seek to develop the capacity of all stakeholders
Needs Based	Be based on the needs of all stakeholders
Flexible	Be flexibly designed and implemented
Rational and Coordinated	Be rationally planned and coordinated, and not be ad hoc
Excellence	Be subject to ongoing reflection and improvement

The project will focus stakeholder engagement at two levels of intervention: (i) working with national and local public institutions and agencies in order to strengthen their capacity to consolidate, expand and effectively manage the PAN and to align project activities with government's strategic priorities; and (ii) working directly with civil society organisations, formal and informal use rights holders, private landowners and individuals to mitigate impacts and optimise benefits of project activities.

STAKEHOLDER INVOLVEMENT PLAN

The project's design incorporates several features to ensure ongoing and effective stakeholder participation in the project's implementation. The mechanisms to facilitate involvement and active participation of different stakeholder in project implementation will comprise a number of different components:

i) Project inception workshop

The project will be launched by a multi-stakeholder workshop. This workshop will provide an opportunity to provide all stakeholders with the most updated information on the project, the work plan, and will establish a basis for further consultation as the project's implementation commences.

ii) Constitution of Project Steering Committee

A Project Steering Committee's constituency will be constituted to ensure broad representation of all key interests throughout the project's implementation. The representation, and broad terms of reference, of the PSC are described in the Management Arrangements in Part III of the Project Document.

iii) Establishment of the Project Coordinating Unit

The Project Management Unit will take direct operational responsibility for facilitating stakeholder involvement and ensuring increased local ownership of the project and its results. The PCU will be located in MoA in Port Louis (or chosen department either FS or NPCS by MoA) to ensure coordination among key stakeholder organizations at the national level during the project period.

iv) Establishment of local working groups

At the activity level, local or specialist working groups (e.g. PAN Policy Working Group of the NBSAP Committee; Legal Sub-Committee of the NBSAP Committee; BRGNP Park Planning Team; Nature-Based Tourism Working Group and Stakeholder Reference Groups constituted for other project activities) will be established, as required, to facilitate the active participation of affected institutions, organisations and individuals in the implementation of the respective project activities. Different stakeholder groups may take the lead in each of the working groups, depending on their respective mandates.

v) Project communications

The project will develop, implement and maintain a communications strategy to ensure that all stakeholders are informed on an ongoing basis about: the project's objectives; the projects activities; overall project progress; and the opportunities for involvement in various aspects of the project's implementation.

vi) Implementation arrangements

A number of project activities have specifically been designed to directly involve local stakeholders in the implementation of, and beneficiation from, these activities. These include: the development of opportunities for sustainable livelihood options and natural resource uses for local communities in the feasibility assessment studies; the development of financial incentives for private landowners and local communities to benefit from PAN expansion; and the implementation of opportunities for the beneficiation of local communities in Mauritius.

vii) Formalising cooperative governance structures

The project will actively seek to formalise cooperative governance structures at the level of the protected areas to ensure the ongoing participation of local stakeholders in the planning and management of individual NPs.

viii) Capacity building

All project activities are strategically very focused on building the capacity – at systemic, institutional and individual level – of the key national stakeholder groups to ensure sustainability of initial project investments. The project will also seek to raise the public awareness of the values of the native biodiversity of Mauritius.

Project Annexes

Annex 1. Threats, root causes and barriers matrix

THREAT	BIO-PHYSICAL IMPACTS	ROOT CAUSES	MANAGEMENT CHALLENGE/BARRIER
1. Uncontrolled spread of invasive alien species	<p><i>Invasive plant species:</i></p> <ul style="list-style-type: none"> Displacement of native vegetation through competition resulting in loss of native plant species biodiversity and ultimately extinction of endemic species Increased vulnerability of forests to cyclone effects Increased soil erosion Increased susceptibility to downstream flooding Increased soil nitrification Changes in water availability <p><i>Invasive faunal species:</i></p> <ul style="list-style-type: none"> Exacerbate displacement effects of invasive plant species through selective browsing of regenerating native plant species Disperse seeds of invasive alien plants Damage fruits of native plant species Physically suppress regeneration of native plant species Predate seeds of native plants Predation on, and ultimately extinction, of native endemic faunal species Displacement of native faunal species through competition resulting in loss of native faunal species diversity <p><i>Pests and diseases</i></p> <ul style="list-style-type: none"> Spread of pathogens in endemic, 	<p><i>Invasive plant species:</i></p> <ul style="list-style-type: none"> Plant species historically introduced deliberately for food or botanical plantings (e.g. fruit trees) Plant species historically introduced for plantations (e.g. <i>Pinus</i> spp., <i>Eucalyptus</i> spp.) or for river and coastal stabilization schemes (e.g. Bamboo, <i>Casuarina equisetifolia</i>) Ongoing deforestation and disturbance for agriculture, deer ranching and development creates conditions suitable for the spread of invasive species Ongoing cyclone damage to native forests creates conditions conducive to rapid invasion by invasive alien plants Current commercialization and recreational use of invasive flora (e.g. <i>Psidium cattleianum</i>, <i>Ravenala madagascariensis</i>) <p><i>Invasive faunal species:</i></p> <ul style="list-style-type: none"> Animals historically introduced deliberately for food or pets (e.g. pigs, deers, Javanese macaques, pigs) Animals historically introduced accidentally (e.g. rats, rosy wolfsnail) Current commercialization of invasive fauna (e.g. deer, monkeys) <p><i>Pests and diseases</i></p> <ul style="list-style-type: none"> Pests and diseases historically introduced accidentally (e.g. rats and pathogens) Transmission by native insect vectors 	<ul style="list-style-type: none"> There is no time-bound strategic plan, with the allocated resource allocation, to manage and control the spread of IAS in the 1.9% of remaining moderately intact forests of the mainland. IAS control programs implemented by the responsible PA agencies are currently ineffectual at conserving the remaining forests and curbing the aggressive spread of IAS. They are restricted to the small and fragmented 'Conservation Management Areas' (CMA) covering less than 0.8% of the current mainland PA estate. No invasive alien plant control measures are underway in the remaining 99.2% of PA estate or in most of the private landholdings with moderately intact forest. The cost of control of IAS in these CMA's is inordinately high. There is inadequate testing of alternative, more cost-effective options. There is limited testing of alternative methods of mechanical control techniques with the view to scaling up the IAS clearing program There is limited research and development in the testing and release of biological control agents There is limited research and development in the efficacy testing and application of herbicides The professional, technical and operating skills base for IAS control is low and under-developed The financial resources to initiate and sustain an IAS clearing program are inadequate. The once-off initial costs of clearing militate against a commitment to an IAS program from the GoM. There are no technical, financial, or other incentives provided to private landowners and lessees of state land to initiate and sustain an IAS clearing program in high priority forest areas

THREAT	BIO-PHYSICAL IMPACTS	ROOT CAUSES	MANAGEMENT CHALLENGE/BARRIER
	<p>threatened bird species</p> <ul style="list-style-type: none"> • Damage to productive commercial crops 		<ul style="list-style-type: none"> • There are limited cooperative governance and partnership arrangements in place to support the scaling up of an IAS control program • Mitigation measures to address the short-term impacts of large-scale IAS programs (erosion, soil compaction, aesthetics, fire risk, etc) and potential areas of conflict (fruit collection and planting of ornamentals) have not yet been developed • Phyto-sanitary control and quarantine measures are still inefficient to prevent introduction of new invasive species and pests and pathogens. • There is a low level of awareness of the threat of IAS and support for their management and control • There is no legislation directly applicable to the control and management of IAS. The regulatory mechanisms to control the importation, production, sale and use of new and known IAS are weak.
<p>2. Forest clearance for productive land uses</p>	<ul style="list-style-type: none"> • Loss of forest habitat for native species • Loss of vegetation communities in the lowland areas of the mainland • Fragmentation of forest and its concomitant impacts on faunal movements • Increased threats to the integrity of localized populations of endemic fauna and flora • Spread of IAS due to disturbance effects • Increasing isolation of forests from local communities • Loss of buffer areas that mitigate cyclone impacts • Decrease in quality of watershed and associated water quantity and quality 	<ul style="list-style-type: none"> • Conversion of forest land to sugar cane on marginal lands • Conversion of forests to pasture land for deer ranching • Development of public infrastructure, such as public roads, through forested areas • Expansion of urban and tourism development, notably on the lowlands and in the coastal regions 	<ul style="list-style-type: none"> • There is no systematic national biodiversity planning to develop prioritized targets for securing the conservation integrity of the remaining native vegetation • Less than 2% of the native forest of mainland Mauritius remains moderately intact. While the PA estate remains relatively secure, the forest areas outside the PA estate are under increasing pressure from legal and illegal conversion. • Outside the ‘forest’ and ‘river’ reserves, conversion of forest land to agriculture is currently unregulated • EIA regulations do not apply to public development projects • Ongoing construction of tourist and recreational infrastructure in the <i>pas geometrique</i> is compromising the ecological integrity of prime coastal areas • Deer ranching on privately owned land is currently unregulated, particularly the conversion of forest land to pasture land. • Enforcement of existing legislation on state-leased and private land is weak. • Private land owners are not always conforming with the requirements of state leases in terms of the Shooting and Fishing Leases Act • The ‘forest’ and ‘river’ reserves on private land are being encroached on as a result of inadequate monitoring and enforcement • There are no financial incentives, and insufficient

THREAT	BIO-PHYSICAL IMPACTS	ROOT CAUSES	MANAGEMENT CHALLENGE/BARRIER
			<p>motivational and voluntary property rights and regulatory incentives, to protect biodiversity on private land and little or no capacity in the responsible state institutions to implement any incentive schemes.</p> <ul style="list-style-type: none"> • There is a shortage of skilled personnel with negotiation skills and innovative instruments for successful establishment of new protected areas on both private and public land • The 'environmentally sensitive areas' envisaged in the Environment Act have not been identified or declared
<p>3. Poor regeneration of native forests</p>	<ul style="list-style-type: none"> • Habitat conducive to spread of IAS • Soil erosion and nutrient losses on steep slopes • Loss of potential habitat for native species 	<ul style="list-style-type: none"> • Historical deforestation for grazing • Lack of fire prevention program and suppression capabilities • Limited financial resources 	<ul style="list-style-type: none"> • There is no strategic fire management program and no capacity and resources to implement any fire management program • The cost-benefits of forest rehabilitation outweigh the perceived returns • There are limited practical forest rehabilitation models to guide any forest rehabilitation program • These degraded landscapes fall outside the formal protected area estate
<p>4. The protected area network does not effectively conserve the remaining high value forests</p>	<ul style="list-style-type: none"> • Spread of invasive alien species • Decrease in quality of watershed and associated water quantity and quality • Increased threats to the integrity of localized populations of endemic fauna and flora 	<ul style="list-style-type: none"> • Low staffing levels • Poorly trained and equipped staff • Inadequate financial support • Lack of political and public support • Weak enabling legal framework • Inefficiencies in resource allocations • Duplications and ambiguities in functions and responsibilities • Weak strategic planning • Inadequate information to direct decision-making • Limited co-operative and collaborative partnerships 	<ul style="list-style-type: none"> • It is not clear what contribution the current protected areas make to meeting national conservation targets • There are no explicit, prioritized targets for the expansion of the protected area estate • The status and conservation objectives of different categories of PA are unclear • There are no corporate strategic plans for the management of the PA estate, no explicit performance parameters and limited management systems • Many of the protected areas are not directed by management plans • The boundaries of PAs are not well defined on the ground • Most of the current extent of protected areas are not managed for biodiversity conservation - they are largely 'paper parks' • Conservation priorities in PAs are directed toward localized areas (CMA's) and highly threatened species • Protected areas have little demonstrable economic value and there is limited political and public support for their expansion in the context of an acute scarcity of land for development. Communities and users lack appreciation of the intrinsic and ecological value of these forests • The NPCS is understaffed with key management, technical and professional skills lacking. The budget allocations are

THREAT	BIO-PHYSICAL IMPACTS	ROOT CAUSES	MANAGEMENT CHALLENGE/BARRIER
			<p>inadequate to maintain a basic conservation service within the PAs.</p> <ul style="list-style-type: none"> • Staffing levels and budget allocation within the Forestry Service are being incrementally reduced. The Service envisages transferring operational functions to ‘competent organisations’ and needs to be restructured to assume its new role of policy, planning, monitoring and regulation • No new financing sources for PAs are being targeted as a mechanism to strengthen financial self-sustainability • The national and political commitment to allocation of public resources to the conservation of PAs is low. PAs are low on the national development agenda and awareness of PAs and their management needs is generally poor • There is some overlap, duplication and ambiguity across different functions and decision-making within PAs • There is no tourism development framework for the PAs • There are limited operational partnerships between the public and private sector in the management, development and commercialization of PAs • The current legislation does not provide for the declaration of privately owned land as a PA • There are low levels of enforcement in the buffer areas of the PA estate • There is generally a lack of community ‘ownership’ of the PA network • Knowledge management systems (information, monitoring, review and research) for the PAs is weak and uncoordinated

SIGNATURE PAGE

[Note: To be completed after CEO endorsement and before agency approval]

Country: Mauritius

UNDAF Outcome(s)/Indicator(s):

(Link to UNDAF outcome., If no UNDAF, leave blank)

Expected Outcome(s)/Indicator (s):

(CP outcomes linked t the SRF/MYFF goal and service line)

Expected Output(s)/Indicator(s):

(CP outcomes linked t the SRF/MYFF goal and service line)

Implementing partner:

(designated institution/Executing agency)

Other Partners:

Programme Period: _____
Programme Component: _____
Project Title: _____
Project ID: _____
Project Duration: _____
Management Arrangement: _____

Total budget:	_____
Allocated resources:	_____
• Government	_____
• Regular	_____
• Other:	
○ Donor	_____
○ Donor	_____
○ Donor	_____
• In kind contributions	_____

Agreed by **(Government)**: _____

Agreed by **(Implementing partner/Executing agency)**: _____

Agreed by _____