



GEF-6 PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: Full-sized Project
 TYPE OF TRUST FUND: GEF Trust Fund

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PART I: PROJECT INFORMATION

Project Title:	A Ridge to Reef Approach for the Integrated Management of Marine, Coastal and Terrestrial Ecosystems in the Seychelles		
Country(ies):	Seychelles	GEF Project ID: ¹	9431
GEF Agency(ies):	UNDP	GEF Agency Project ID:	5502
Other Executing Partner(s):	Ministry of Environment, Energy and Climate Change	Submission Date:	8 April 2016
		Resubmission Date:	28 March 2017
GEF Focal Area(s):	Multi-focal Areas	Project Duration (Months)	60 months
Integrated Approach Pilot	IAP-Cities <input type="checkbox"/> IAP-Commodities <input type="checkbox"/> IAP-Food Security <input type="checkbox"/>	Corporate Program: SGP	<input type="checkbox"/>
Name of parent program:	N/A	Agency Fee (\$)	370,397

A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES

Objectives/Programs (Focal Areas, Integrated Approach Pilot, Corporate Programs)	Trust Fund	(in \$)	
		GEF Project Financing	Co-financing
BD 1, Program 2: <i>Expanding the reach of the global protected area estate</i>	GEFTF	824,775	1,400,000
BD 3, Program 6: <i>Ridge to Reef+: Maintaining integrity and function of globally significant coral reef ecosystems</i>	GEFTF	884,915	9,400,000
LD 2, Program 3: <i>Landscape management and restoration</i>	GEFTF	2,189,224	17,450,000
Total Project Cost		3,898,914	28,250,000

*US\$1,781,000 of the CCM allocation has been transferred to LD under the partial flexibility mechanism. US\$ 870,311 of the BD allocation – previously set aside for development of an ABS MSP – has been transferred to this project.

B. INDICATIVE PROJECT DESCRIPTION SUMMARY

Project Objective: To manage and conserve the flow of marine, coastal and terrestrial ecosystem services in targeted islands of the Seychelles for multiple benefits through the Ridge-to-Reef approach						
Project Components	Financing Type	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Co-financing
1. Expansion of marine and terrestrial protected areas of the Seychelles' Inner Islands	TA and Inv	<p>1.1. Expanded system of marine protected areas (MPAs) in the Seychelles' Inner Islands through the establishment of <i>temporal MPAs</i> (known as TPAs) in select sites.</p> <p>1.2. Improved management of existing MPAs (Port Launay, Baie Ternay and Curieuse Marine National Parks).</p> <p>1.3. Six Key Biodiversity Areas (KBAs) gazetted in upland forest ecosystems that produce significant downstream impacts on coastal and marine ecosystems.</p> <p><i>Indicators: 7 new temporal</i></p>	<p>1.1.1. Establishment of 7 new temporal MPAs at coastal sites (see Annex) downstream from areas where the project is undertaking the reduction of land-based stresses on coastal and marine ecosystems. Consists of: i) five TPAs that strengthen protection of 40.5 ha of critical nesting habitat for Hawksbill turtles (<i>Eretmochelys imbricate</i>); and ii) two TPAs that establish protections for 2,505 ha and 2,780 ha of critical feeding aggregation habitat for the whale shark (<i>Rhincodon typus</i>). The TPAs will be gazetted as permanent sites to which seasonal regulations apply.</p> <p>1.2.1. Improved management of three existing marine protected areas (Port Launay, Baie Ternay and Curieuse Marine National Parks) encompassing 1,293 ha on the west coast of Mahé and at Curieuse island to: i) enable development or strengthening of MPA management plans, which include zoning within MPAs; ii) support the development and approval of new regulations (under the 2015 Protected Areas Act) to enhance conservation of globally significant coral reefs in coastal MPA sites; iii) strengthen MPA monitoring and enforcement capacity to prevent illegal fishing and harvesting of marine resources, to reduce negative impacts of tourism on coral reefs, etc.; and iv) deliver priority ecological analyses</p>	GEFTF	1,040,400 (BD)	6,412,500

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

		<p><i>MPAs encompassing 5,325 ha formally established to conserve biodiversity and maintain ecosystem goods and services²; Improved management of 3 existing MPAs encompassing 1,293 ha, as measured by improved scores on GEF 6 METT; 4,000 ha of globally significant coral reef and 3,000 ha of sea grass beds surrounding the Inner Islands benefitting from reduced land-based stresses; Percentage of live coral cover is stable or increased at specified sites during the project period; 20 hectares³ of coastal forest / mangrove restored using native species; 2,235 ha of upland forests within KBAs formally gazetted under the new PA Act⁴.</i></p>	<p>and improve data collection protocols and knowledge management systems.</p> <p>1.2.2. Detailed ecosystem and biodiversity surveys of selected MPAs (including wetlands, coral reefs, mangroves and seagrass beds) undertaken to establish project baselines and determine key land-based threats to, and impacts on, marine and coastal ecosystems downstream of targeted watershed and forests.</p> <p>1.2.3. Restoration and rehabilitation of selected MPAs through coastal reforestation (coastal forests and mangroves) and improved management of coastal freshwater ecosystems (including improved management of domestic wastewater through wetland filtration to reduce impacts on globally significant corals).</p> <p>1.3.1. Gazetting of 2,235 ha of 6 KBAs (see Annex) under categories defined by the new PA Act in upland forest ecosystems with a focus on conserving biodiversity and carbon stocks. <i>Site boundaries to be finalized during PPG—to include areas where forest degradation has produced important downstream impacts on globally significant coastal and marine ecosystems.</i></p>			
<p>Cop2. Strengthened management of upland KBAs and adjacent areas to enhance the flow of ecosystem services through the R2R approach</p>	<p>TA and Inv</p>	<p>2.1. Improved frameworks for forest landscape management and restoration, and implementation of on-the-ground management activities in KBAs.</p> <p>2.2. Enhanced local capacities for implementation and enforcement of sustainable forest and land management to reduce impacts of land-based stresses on MPAs.</p> <p>2.3. Improved management of agricultural land through sustainable forestry and agro-forestry.</p> <p><i>Indicators: Reduced soil erosion rates due to reduced incidence / extent of forest fires (baseline TBD); 50 farmers participating in agroforestry activities; 350 community members and government officials trained through the forest/watershed management committees; 100 civil society members and government</i></p>	<p>2.1.1. Policies and related legal and regulatory frameworks reviewed and reformulated to promote effective management of wetlands and forests in Seychelles. Strengthened enforcement to reduce / mitigate stresses from land-based sources and activities to coastal and marine ecosystems, in particular to MPAs.</p> <p>2.1.2. Biodiversity-friendly sustainable forest management practices adopted and implemented in and around target KBAs to increase natural forest cover, reduce risks of IAS and wildfires, and promote soil, water and biodiversity conservation:</p> <ul style="list-style-type: none"> • Improved management practices for land areas recognized as ‘environmental assets’ which encompass the total area of 11,712 ha, or 60% of land mass of the Mahe and Praslin islands, including 10 “green corridor areas”(8 in the west coast of Mahe and 2 in Praslin). • Native plants propagated in forest nurseries. • Native trees and shrubs planted in bare or fire-damaged areas. • Private land owners, farmers and communities participate in reforestation/restoration of KBAs and adjacent areas. • Plant IAS controlled through targeted management actions. • 10 forest/watershed management committees established and capacitated for the improved management of green corridors. <p>2.1.3. Technical approaches to post-fire forest rehabilitation are piloted and the systems for a long-term monitoring for the forest recovery established in areas where rehabilitation of burned forest is undertaken. Capacity of Seychelles Fire and Rescue Services and community-based fire-fighting groups is strengthened to reduce threats of forest fires and their impact of forest ecosystems, including degradation of habitats and ecosystem services.</p> <p>2.1.4. Systems and capacities for long-term monitoring of forest</p>	<p>GEFTF</p>	<p>2,084,978 (LD)</p>	<p>18,044,533</p>

² See Annex for details on temporal MPA sites.

³ Figure to be confirmed on completion of baseline assessments for restoration of coastal areas currently underway by the University of Seychelles (UniSey).

⁴ Priority KBAs on Mahé and Praslin, Senterre and Henriette 2014. See Annex for details on KBA sites.

		<p><i>officials trained through forest fire fighting task forces; 11,712ha of areas reserved as 'environmental assets' benefited from improved SLM; 100 ha of low-productivity land converted to agroforestry; 10 ha of fire-degraded upland forest restored; Levels of agricultural chemicals in freshwater ecosystems downstream of target areas reduced to acceptable limits (P 5 mg/l, N 50 mg/l, COD 80) (baseline TBD); Enhanced local capacities emplaced for implementation and enforcement of sustainable forest and land management as measured by the UNDP-GEF Capacity Development Scorecard; 3,307 tCO₂e sequestered from restoration of 10 ha of fire-degraded forest and 40 ha of IAS-degraded forest, and from agroforestry on 100 ha; 464,632 tCO₂e emissions avoided.</i></p>	<p>recovery established to monitor areas where rehabilitation of forests is undertaken, using biological and chemical parameters to measure chemical composition, sedimentation rates, water temperature and water flow rates. In parallel, effective monitoring systems of rivers and streams flowing out of target KBAs established that measures chemical composition, sedimentation rates, water temperature and water flow rates.</p> <p>2.2.1. Biodiversity-friendly sustainable land and forest management practices implemented by local communities over 100 ha, such as organic agroforestry using native species, conservation agriculture, etc., with business plans in place to sustain. To be supported through the upscaling of networks already initiated by the GEF Small Grants Programme.</p> <p>2.2.2. Capacity of farmers and small-holders built in SLM, soil conservation and fertility management, pest management and agro-forestry techniques. The ecological integrity of sites involving communities will be enhanced by establishing informal buffer zones for agroforestry production (see 2.3.1). Good practices promoted in community and small-holder land management, including local knowledge.</p> <p>2.3.1 Agroforestry production expanded into degraded upland sites as well as existing areas of agricultural production in order to provide buffer zones for KBAs, reduce erosion on agricultural lands as well as the flow of nutrients, pollution and sedimentation into downstream coastal and marine ecosystems, and improve incomes and food security for local residents.</p>			
3. Promoting the 'Ridge to Reef' (R2R) approach through knowledge management, ecosystem health monitoring, and inter-sectoral coordination to foster partnerships in the Seychelles and knowledge-sharing among SIDS	TA	<p>3.1. R2R approach promoted through improved knowledge, strengthened partnership, and knowledge sharing with other SIDS in the Indian Ocean and beyond.</p> <p><i>Indicators: At least 3 targeted quantitative assessments conducted; the integrated ecosystem health monitoring institutionalized; the scaled-up information-sharing mechanism supporting the R2R approach; at least 2 policy recommendations from SSDS SC to improve the effectiveness of the R2R approach, based on the integrated ecosystem health monitoring results; at least 6 partnerships with the private sector and NGOs, contributing to the integrated ecosystem health monitoring; at least 10 District Administrations sensitised on the R2R approach and apply the knowledge in their ICZM implementation; at least 2</i></p>	<p>3.1.1. Targeted assessments to quantify the effectiveness of the land-based approach to improve the health of the coastal and marine ecosystem conducted in partnership with the Blue Economy Research Institute (BERI).</p> <p>3.1.2. The integrated ecosystem health monitoring at the project sites institutionalised, coordinated by BERI, and the information-sharing mechanism scaled up, building upon the existing Clearing House Mechanism, to support the implementation of the R2R approach.</p> <p>3.1.3. Policy recommendations on harmonisation of policies and monitoring efforts made by the Seychelles Sustainable Development Strategy Steering Committee (inter-sectoral coordination forum) to advance the R2R approach.</p> <p>3.1.4. Private sector involvement strengthened to support the implementation of the R2R approach (especially in monitoring and stress reduction activities).</p> <p>3.1.5. District Administrations sensitised with the R2R approach and knowledge and resources available to them to apply the R2R approach in their ICZM implementation.</p> <p>3.1.6. Knowledge sharing - through Blue Economy Summit, Indian Ocean Rim Association conferences, SIDS conferences, Nairobi Convention meetings, etc. - to promote the R2R application in the Indian Ocean SIDS and beyond.</p> <p>3.1.7. National reporting capacity to Nairobi Convention, in particular on the progress made towards the LBSA Protocol and the (upcoming) ICZM Protocol, strengthened.</p>	GEFTF	587,876	2,380,467

		<i>IW Experience Notes published on the R2R application.</i>			
			Subtotal	3,713,254	26,837,500
			Project Management Cost (PMC)	GEFTF 185,660	1,412,500
			Total Project Cost	3,898,914	28,250,000

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

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount (\$)
Recipient Government	Ministry of Environment, Energy and Climate Change (MEECC)	Grants	2,594,245 ⁵
Recipient Government	Seychelles National Parks Authority (SNPA)	Grants	2,700,000 ⁶
Recipient Government	Seychelles Agricultural Agency (SAA)	Grants	500,000
Recipient Government	Ministry of Fisheries and Agriculture: AfDB Agriculture Sector Development Project	Loans	10,000,000
CSO	University of Seychelles (UniSey)	Grants	2,255,755
GEF Agency	United Nations Development Programme: Adaptation Fund projects	Grants	6,500,000
GEF Agency	United Nations Development Programme: GCCA+ UNDP-implemented component	Grants	1,300,000
Donor Agency	EU GCCA+ MEECC-implemented component	Grants	1,700,000
Private Sector	Private Enterprises, Private Island Owners	Grants	500,000
CSO	Environmental NGOs (SIF, MCSS, Nature Seychelles, others)	Grants	200,000
Total Co-financing			28,250,000

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

GEF Agency	Trust Fund	Country/Regional/Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee (b) ^b	Total (c)=a+b
UNDP	GEFTF	Seychelles	Biodiversity		1,709,690	162,421	1,872,111
UNDP	GEFTF	Seychelles	Land Degradation		2,189,224	207,976	2,397,200
Total GEF Resources					3,898,914	370,397	4,269,311

E. PROJECT PREPARATION GRANT (PPG)

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

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

Project Preparation Grant amount requested: \$120,000					PPG Agency Fee: \$11,400		
GEF Agency	Trust Fund	Country/Regional/Global	Focal Area	Programming of Funds	(in \$)		
					PPG (a)	Agency Fee (b)	Total c = a + b
UNDP	GEFTF	Seychelles	Biodiversity		80,000	7,600	87,600
UNDP	GEFTF	Seychelles	Land Degradation		40,000	3,800	43,800
Total PPG Amount					120,000	11,400	131,400

F. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS

Corporate Results	Replenishment Targets	Project Targets
1. Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	15,853 hectares (total area of targeted new TPAs and KBAs to be established, existing MPAs to be better managed)
2. Sustainable land management in production systems (agriculture, rangelands, and forest landscapes)	120 million hectares under sustainable land management	11,822 hectares (over 60% of the total land mass of the Mahe and the Praslin Islands)

⁵ Contribution from MEECC budget, including support to DRDM, Forestry and Conservation sections (but excluding SNPA).

⁶ 3/8th share of the annual Government allocation to SNPA (3 out of 8 PAs targeted by this project).

3. Promotion of collective management of transboundary water systems and implementation of the full range of policy, legal, and institutional reforms and investments contributing to sustainable use and maintenance of ecosystem services	Water-food-ecosystems security and conjunctive management of surface and groundwater in at least 10 freshwater basins;	N/A
	20% of globally over-exploited fisheries (by volume) moved to more sustainable levels	N/A
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO _{2e} mitigated (include both direct and indirect)	472,830 metric tons
5. Increase in phase-out, disposal and reduction of releases of POPs, ODS, mercury and other chemicals of global concern	Disposal of 80,000 tons of POPs (PCB, obsolete pesticides)	N/A
	Reduction of 1000 tons of Mercury	N/A
	Phase-out of 303.44 tons of ODP (HCFC)	N/A
6. Enhance capacity of countries to implement MEAs (multilateral environmental agreements) and mainstream into national and sub-national policy, planning financial and legal frameworks	Development and sectorial planning frameworks integrate measurable targets drawn from the MEAs in at least 10 countries	N/A
	Functional environmental information systems are established to support decision-making in at least 10 countries	N/A

PART II: PROJECT JUSTIFICATION

The problem: Like many small island states, the Seychelles is highly dependent on the healthy functioning of both its terrestrial and marine ecosystems for its economic development and social well-being. A significant proportion of the country's economy depends on natural ecosystem services, including productive marine ecosystems for fisheries and pristine and diverse terrestrial and marine ecosystems to sustain the all-important tourism industry. The country's territory consists of a landmass of 455 square kilometres forming 115 islands, and an Exclusive Economic Zone (EEZ) covering 1.37 million square kilometres. The archipelago is divided into two groups: the mostly granitic islands (or 'Inner Islands') within the Mahé Plateau, and the outer coralline islands ('Outer Islands') stretching south-west from the Plateau. With a very limited land area, the Seychelles experiences intense competing pressures on land resources for tourism, agriculture, housing, water provision and other needs.

Seychelles is located in the Madagascar and Indian Ocean Islands Region, which has been classified as one of the world's "global biodiversity hotspots". Some 7,200 species of animal, plant and fungi have been recorded in the Seychelles, including several flagship species, such as the Aldabra giant tortoise (*Aldabrachelys gigantea*) and the coco-de-mer palm (*Lodeicea maldivica*). Endemism is comparatively high (between 50-88% for different animal groups in general, approximately 45% for plants and 48% for birds). Seychelles is also a globally important storehouse of marine biodiversity, with some 1,000 fish species recorded and particularly high levels of faunal diversity and endemism. Much of the marine biodiversity is associated with reef ecosystems—323 species of corals have been identified in the Seychelles⁷, and a 2002 survey of reef areas in the inner granitic islands recorded a total of 44 individual genera of corals belonging to some 14 different families. The Seychelles is recognized as a specific ecoregion for reef-building corals.^{8,9} The granitic Seychelles supports both coral reefs and coral communities on rock (i.e. corals that do not form reefs); the formation of these coral reefs and coral communities in the granitic inner islands are distinct within the western Indian Ocean due to the underlying geology, and are distinct from those around the coralline and outer islands. Within the inner islands, the most extensive fringing reefs surround the high granitic islands of Mahé and Praslin. On the west coast of Mahé, true fringing reefs have only developed in sheltered bays, such as Baie Ternay and Port Launay, while around Curieuse, there is a shallow fringing reef along the south coast. Two of the MPAs targeted by the project – the Port Launay Marine National Park and the Curieuse Marine National Park, showed some of the highest Scleractinian coral species richness in a 2000 survey, with 68 and 48 different species respectively.¹⁰ The Seychelles' waters also provide habitats for a large numbers of cetaceans (7 dolphin species and 19 whale species have been observed) and its beaches to 4 species of nesting sea turtles (3 of which are Red-Listed). Coastal freshwater ecosystems in the lowland areas of the granitic islands are some of the most threatened native habitat-types in the Seychelles. The area of such ecosystems has declined significantly and the remaining freshwater ecosystems are threatened by declining water quality due to reclamation, sedimentation, pollution and drainage. Near-shore marine ecosystems including mangroves, seagrass beds and coral reefs have also declined significantly in recent decades and continue to be under significant threat from land-based sources of pollution, including sediments, nutrients and agricultural chemicals flowing from upstream landscapes and from developed coastal areas. In terms of forest cover, most of the granitic islands were covered by pristine forest, but agricultural expansion, timber production and settlement/infrastructure

⁷ Klaus, R. (2015). 'Identification of priorities for the expansion of the marine and terrestrial protected area system of the Seychelles, Final report', Government of Seychelles, United Nations Development Programme, GEF

⁸ Marine Ecoregions of the World: A Bioregionalization of Coastal and Shelf Areas. Spalding et al. Bioscience 57(3), July/August 2007 / Vol. 57 No. 7

⁹ Obura D (2012) The Diversity and Biogeography of Western Indian Ocean Reef-Building Corals. PLoS ONE 7(9): e45013. doi: 10.1371/journal.pone.0045013

¹⁰ Klaus, R. (2004). Coral Bleaching Indices in Theory and in Practice: A Comparative Evaluation of the 1997/98 Indian Ocean Coral Bleaching Event. Ph.D. Thesis, University of Warwick, 343p.

have contributed to the loss, fragmentation and alteration of forest habitats. Today, less than 5% of the original native forest remains intact, primarily in upland areas that have been spared from development (although they continue to be negatively impacted by invasive alien species). Intact native lowland forests (0-300 m) and sub-montane forests (300-550 m) are limited to a few fragmented areas on Silhouette and Curieuse islands, and mangroves have been reduced to just 43 hectares on the inner granitic islands.¹¹

The Seychelles is a stable democracy with a population of approximately 91,000 inhabitants, 86% of whom live on Mahé Island and most of the remainder on the narrow coastal plains of the other two main granitic islands (Praslin and La Digue). The country ranks second in Africa in terms of GDP per capita (US\$ 23,799 in 2014) and it displays fairly high levels of human development (HDI was 0.772 in 2014) but high inequity (GINI coefficient was 0.658 in 2013). Most MDGs have been met and foreign aid has fallen substantially in the past few years. The Seychelles economy is primarily dependent on tourism and fishing (including a large tuna export industry and significant numbers of local inhabitants active in local small-scale commercial and artisanal fishing).

Threats: Anthropogenic threats to the Seychelles' biodiversity and its terrestrial, coastal and marine ecosystems include:

- **Ecosystem Conversion:** In the Seychelles, deforestation, degradation, fire, drainage, development activities in general, and land reclamation are major causes of land-cover change, contributing to land degradation and erosion, and the decline and extinction of terrestrial species (22 species have gone extinct, and 34% of plants, 45% of amphibians, 64% of birds, 34% of mammals and 43% of reptiles are threatened with extinction). Originally, most of the granitic islands were covered by pristine forest, but agricultural expansion, timber production and settlement/infrastructure have contributed to the loss, fragmentation and alteration of forest habitats. Frequent forest fires have destroyed native forests across the inner islands: fire has degraded forests covering approximately 40% of Praslin and Curieuse, 20% of Mahé and La Digue, and 10% of Silhouette¹². Once native forests are destroyed by fire they rarely come back without rehabilitation interventions; on Praslin, 1,500 ha of forest have been affected by fires, of which 1,250 ha are now shrubland/bush vegetation composed mainly of exotic flora, 100 ha are just beginning to recover vegetation, and 160 ha are severely degraded (i.e. bare, exposed sites). Of the 160 ha that are severely degraded, 53 ha are considered to be a high priority for restoration¹³. Forest fires continue to be a significant threat (especially for dry palm forests); conflicts over land and other issues frequently result in intentional fires as a protest tool or way of settling scores, while unintentional fires result from negligence while burning rubbish or harvesting wild honey, and a general lack of awareness of the threat and impacts of forest fires. Coastal wetlands have been destroyed on a scale even greater than that of forests; coastal development has reduced the size of wetlands by 90%, which has destroyed important habitats and greatly reduced the capacity of coastal ecosystems to store freshwater (leading to increased flooding of coastal areas), to filter freshwater flowing into the marine environment, and to protect the landscape from storm surges and flooding.
- **Ecosystem Degradation:** The primary causes of soil erosion on the main granitic islands have been identified as forest degradation from fires, construction, and the cultivation of crops on hillsides without the use of appropriate soil conservation measures¹⁴. Soil losses resulting from these activities reduce land productivity and cause declines in water quality and quantity, including disruption of the hydrological cycles in downstream coastal wetlands. Perhaps the most important impact, however, stems from sediments flowing into the sea where they “smother” and kill the corals upon which the Seychelles' beaches, fish stocks and coastal population depend^{15,16}. Studies measuring sediment runoff in 2 rivers flowing into the Praslin Marine National Park—the Casimir River which flows through a very degraded landscape and the Pasquiere River which flows through less degraded forest—demonstrated that the Casimir river was depositing red silt up to 75 m from the shoreline (and thus onto the reef), while the Pasquiere River and Davidson River which flow into the same lagoon had negligible deposits¹⁷. Flooding of the coastal plains after high-intensity rains is common during the rainy season; although this is a natural phenomenon, it is aggravated by deforestation of the uplands and increasing

¹¹ Table 10 in Senterre, B. and Wagner, M. (2014). *Mapping Seychelles habitat-types on Mahé, Praslin, Silhouette, La Digue and Curieuse*. Consultancy Report. Government of Seychelles, United Nations Development Programme, GEF.

¹² Senterre, B. (2009). *Distribution and determinants of forest fires and land degradation on Praslin, Seychelles*.

¹³ Senterre, B. (2009). *Cost-effective techniques for the rehabilitation of burned and degraded lands in the Seychelles*.

¹⁴ Antoine H., Carolus I., Naya N., Radegonde V., and Sabury E. (2007). *Seychelles National Summary Report - Land-based Activities, Sources of Pollution and Pollutant Levels in Water and Sediment*.

¹⁵ Clifton J., Etienne M., Barnes D., Barnes R., Suggett D., Smith D. (2012). ‘Marine conservation policy in Seychelles: Current constraints and prospects for improvement’, *Marine Policy* 36 (2012) 823–831.

¹⁶ Antoine *et al*, 2007.

¹⁷ Henriette, E., Bunce, S., Lesperance, M., Laboudallon, V. and Lesperance, B. (2011). *Ridge to Reef - Where does all the soil go? Raising awareness and engaging community to participate in measuring soil erosion at Anse Possession, Praslin – Seychelles. Demonstration project of coastal monitoring including socio-economic aspects as a tool for developing local capacity building, raising public awareness and future long-term monitoring*. Terminal Report for the Mangroves for the Future project. Terrestrial Restoration Action Society of Seychelles, Seychelles; and Talma, E. and Lesperance, M. (2011). *Marine Survey in Baie of Pasquiere, Praslin Island, Seychelles*. Terrestrial Restoration Action Society of Seychelles, Seychelles

infrastructure developments on the coastal plain. This flooding results in crop losses and, in severe cases, may cause long-term land degradation by leaving the land unfit for further cultivation.

- **Pollution, Waste and Invasives:** Pollution of inland waters by faecal bacteria has been identified as a major concern¹⁸, and run-off and wastes from agricultural activities produce significant negative impacts on lowland ecosystems. Most of the areas on Mahé, except for the capital city of Victoria and the Beau Vallon area (densely populated areas in the Northern part of Mahé), are not sewered and entire islands (for example, Praslin and La Digue) are still to be sewered. The existing sewers are in generally critical condition, requiring constant repairs and are in need of refurbishment. Leaks are likely to increase if the network is not refurbished, leading to further pollution of rivers.¹⁹ Management of septic tanks is also not optimal. About 20% of crop farmers use fertiliser and all farmers use pesticides as a mean to control agricultural pests. The practice of pig rearing is another major source of water and coastal pollution to water bodies and the coastal areas; approximately 90% of legally-registered pig farms (plus illegal farms) have inadequate septic tanks/soakage systems, so that fluid effluents flow directly into rivers and streams or seep into the soil, causing ground and water pollution²⁰. Waste flows (from pig farms and other sources) are suspected of being one of the primary causes of a widespread Harmful Algal Bloom (HAB) event that affected much of the Inner Islands of the Seychelles in late 2015, resulting in substantial fish die-offs and negative impacts on tourism and fisheries (in particular, artisanal fisheries and local fish markets)²¹, thereby posing a threat to the two main economic sectors in the country. A recent study in the Seychelles has underlined the importance of addressing pollution in order to protect nearshore coral reefs, finding that “complex reefs in deeper water that are not deluged with pollution recover best...and may serve as coral refuges.”²² The Crown of Thorns Starfish (*Acanthaster planci*) has become a significant source of damage to coral reefs in the inner islands in recent years, including a large infestation commencing in 2014 and continuing to date²³. Again, it is believed that increased nutrient levels in terrestrial runoff (which are known to produce denser phytoplankton levels, which in turn increase the survival rates of larval starfish) have been a key factor in this outbreak. Five distinct cohorts of starfish are now present, indicating good survival of the larvae over five population cycles, and this is resulting in widespread damage to coral reefs. Finally, because many septic systems are inadequate, there is a significant risk of contamination by sewage and storm runoff during intense storm events typical of the wet season.²⁴
- **Threats to the Coastal and Marine Ecosystems:** The Marine Ecosystem Diagnostic Analysis of the Seychelles²⁵ identifies most habitat destruction in the Seychelles’ coastal zone as occurring on the inhabited Inner Islands of the Seychelles archipelago and mostly affecting the immediate coastal marine environment. Impacts include reclamation and sedimentation from runoff and alteration of the coastline. Land-based pollution (sedimentation and nutrients) is identified as one of the greatest threats to the health of the marine ecosystems within 5 km around the 4 main, inhabited islands of the Seychelles.²⁶ In addition, increasing levels of tourism (numbers are currently increasing by 19% per year, with development concentrated in coastal areas), the changing chemical composition of rivers and nutrient run-off²⁷ are known to be causing algal blooms and encouraging the spread of IAS, particularly Crown of Thorns Starfish (COTS). A further growing concern is coastal erosion, which is more common in the inner islands where it has been aggravated by anthropogenic effects.²⁸
- **Over-Exploitation of Natural Resources:** Unsustainable levels of fishing have led to the depletion of fisheries stocks and the removal of keystone species (e.g. sharks, large reef fish), with cascading effects on marine ecosystems. In recent years, there has been a pronounced increase in poaching of the valuable Coco-de-Mer (*Lodoicea maldivica*) nuts on Praslin island, which poses a threat to the long-term survival of the species. The collection of bird eggs from migratory seabird populations is also considered unsustainable. Unsustainable harvesting of timber and forest products also plays a role in removing vegetation and exposing soil layers to the climatic elements. At present, the importation of timber is

¹⁸ State of the Environment Report (2014); Richetr, I. and Adonis, G. (2014). ‘Carrying capacity study for the districts of Bel Ombre, Beau Vallon and Glacis’. Consultancy report. Government of Seychelles, United Nations Development Programme, GEF.

¹⁹ UNEP/AU/SIDA/Output 3.2e (2010) *Country Report – the Republic of Seychelles: policy, legislation and institutional analyses and recommendations for LBSA Protocol ratification and implementation*.

²⁰ Antoine et al, 2007.

²¹ Seychelles News Agency, 26th October 2015. *Toxic algal bloom or lack of oxygen? Tests needed to determine abnormal fish deaths in Seychelles*.

²² Coral Reefs Show Remarkable Ability to Recover from Near Death. Biello, D. Scientific American, January 15, 2015.

²³ Engelhardt U. (2014). *Status and age composition of current outbreaks of the crown-of-thorns starfish (Acanthaster planci) on the reefs around North Mahé Island, Republic of Seychelles*; Eames J./WiseOceans (2015). *2015 Status assessment of the crown-of-thorns starfish (Acanthaster planci) population in Petite Anse, Mahé, Seychelles*.

²⁴ Clifton J., Etienne M., Barnes D., Barnes R., Suggett D., Smith D. (2012). ‘Marine conservation policy in Seychelles: Current constraints and prospects for improvement’, *Marine Policy* 36 (2012) 823–831.

²⁵ ASCLME (2012). *National Marine Ecosystem Diagnostic Analysis*. Seychelles, Contribution to the Agulhas and Somali Current Large Marine Ecosystems Project (supported by UNDP with GEF grant financing).

²⁶ Payet, R. (2006). ‘Decision processes for large marine ecosystems management and policy’. *Ocean & Coastal Management*, 49:110-132.

²⁷ Government of Seychelles (2014), *State of Environment Report 2014*. Government of Seychelles (2014), *Carrying capacity study for the districts of Beau Vallon, Bel Ombre and Glacis: towards sustainable tourism and residential development*.

²⁸ Bijoux, J.P., Decomarmond, A., Aumeeruddy, R. (2008). *Status of the Marine Environment Report, Seychelles*. UNEP-GEF-WIO-LaB Project: Addressing Land Based Activities in the Western Indian Ocean.

insufficient to meet the demand for construction, which has increased the demand for local timber.

- *Climate change*: Over the past 40 years, the Seychelles has experienced average increases in maximum and minimum temperatures of 0.33°C and 0.82°C respectively. Climate change is also influencing the seasons, with the rainy season projected to be shorter but more intense and the dry season projected to be longer. The frequency of extreme weather events, such as heavy rainfall and storm surges, is expected to increase and will affect mainly coastal areas. Surface runoff events will become more intense in the rainy season and ecosystem desiccation – with attendant fire risks – more widespread in the dry season.²⁹

Baseline: There are a large number of on-going Government programmes as well as initiatives supported by development partners that address the management of terrestrial, coastal and marine ecosystems in the Seychelles. Among the most important baseline initiatives are several strategic planning initiatives of the Government of Seychelles.

- The draft Seychelles Strategic Plan (SSP) includes an overall strategic plan for the country, a framework plan for the main island of Mahé with a focus on planning for the ‘green spine’ or upland forest areas, and a master plan for the capital of Victoria. The SSP is intended to provide the spatial framework for the implementation of objectives set out in the country’s various national strategies and plans, including the National Development Strategy (NDS) 2015-2019, the Seychelles Sustainable Development Strategy 2012-2020 (SSDS), the Seychelles Climate Change Strategy 2009 (SCCS) and the NBSAP 2015-2020. The NDS includes an allocation of 9% of the national budget for programmes related to environment and renewable energy; of this amount, 40% will be allocated to the protection and valorisation of natural capital, and 60% to the promotion of energy efficiency, resource efficiency, water supply and sanitation management. The 40% amounts to approximately US\$ 75 million (US\$ 15 million/year) during the project period and constitutes the primary budgetary allocations for key institutions concerned with environmental protection (detailed below). The NBSAP 2015-2020 also provides details on targeted investments, and has a total budget (estimated by the Seychelles BIOFIN project) of US\$ 23.7 million, and will hopefully guide the expanded Government investment indicated in the NDS.
- Integrated Coastal Management (ICM) is considered to be a priority in the Seychelles, since the entire archipelago is considered as a coastal zone. ICM principles are fully integrated into the Land Use Planning exercise carried out at the District level, whose first phase has been completed for all 25 District Administrations in the country (22 in Mahé, 2 in Praslin and 1 in La Digue). Through an ongoing reform and decentralisation effort, it is expected that the District Administrations will have more significant responsibilities in the implementation of the land use plans, which will be the major implementation mechanism for ICM on the ground. As the implementation of the land use plans will have significant impacts (both positive and negative) on the terrestrial and coastal ecosystems, it is imperative to strengthen the overall capacity of District Administrations on integrated ecosystem management planning and implementation.
- A new Marine Spatial Plan (MSP) for Seychelles is being drafted to help the country meet its commitment to expand the area of its strict marine protected areas (high biodiversity zones) to 15% of the EEZ, and the areas of marine sustainable use zones (medium biodiversity zones) to another 15% of the EEZ, while also optimising the sustainable use and effective management of the EEZ as a whole. The MSP is a Government-led process in partnership with The Nature Conservancy (TNC) and others, with co-financing through a US\$1 million grant from Ocean 5 to TNC. The MSP is expected to be completed around the end of 2016 and will include proposals for the location/boundaries of the new MPA system (zoning of the EEZ), following the priorities for expansion identified in the GOS-UNDP-GEF PA NGOs project. The Government of Seychelles has adopted a phased approach and has integrated the MSP process into a number of different projects to facilitate the sequential progression and to allow time for the refinement of planning outcomes. The Seychelles Marine Spatial Planning Consortium and the associated Steering Committee are being formed partly in response to this decision, and to ensure harmonisation of on-going and planned projects/initiatives, thereby avoiding duplication.
- Integrated Water Resources Management and Water Use Efficiency (IWRM/WUE) is critical in the Seychelles, where freshwater resources are limited. At present, nearly 80% of the country’s rainfall is lost into the sea as runoff and much of it goes through urban or agricultural areas, collecting waste and pollutants on its way to the ocean. The Government, through the Public Utility Corporation, has made considerable efforts in awareness-raising on water conservation, promoting rainwater harvesting and increasing water storage capacity. An IWRM demonstration is ongoing on the island of La Digue, with support from the regional UNEP-UNDP-GEF Atlantic and Indian Ocean SIDS IWRM project, to promote water use efficiency, water security, rehabilitation of marshes and private sector partnership. This demonstration will inform the ongoing water sector reform process, which will support the efficient implementation of IWRM and improved water use efficiency in key sectors. The water sector reform process has identified the urgent need to develop a National Water Policy fully embracing IWRM principles. The National Water Policy development process is expected to start in 2016.

²⁹ Government of the Seychelles (2011), *Second National Communication to the United Nations Framework Convention on Climate Change*.

- The key baseline activity to help achieve the goals of the MSP is the creation of a Seychelles Conservation & Climate Adaptation Trust (SeyCCAT), a fund that is being established to oversee and fund activities identified as priorities under the MSP initiative (and with a particular focus on operationalising new MPAs). Funding for the SeyCCAT will come from an initial \$39 million sovereign debt swap for the Government of the Seychelles in exchange for a commitment to invest in climate adaptation and marine conservation projects in the Seychelles. As part of this debt swap, the Government will pay a substantial amount (still to be determined) into the SeyCCAT over a 20-year period, and the interest earned on these funds (currently estimated at US\$ 0.4 million/year starting in 2016) will be used for activities to implement the Marine Spatial Plan.

In addition to these overall planning initiatives, ongoing Government projects and programmes funded through budgetary allocations constitute a significant part of the baseline for this project. As noted above, the NDS expects to allocate approximately US\$ 75 million (US\$15 million/year) during the project period for the protection and valorisation of natural capital; most of this funding will support the programmes of the Department of Environment (DoE), Seychelles National Parks Authority (SNPA) and the Division of Risk and Disaster Management (DRDM). Additional NDS funds (from the US\$ 60 million per year allocation for production sectors) will support programmes of the Seychelles Agricultural Agency (SAA). The University of Seychelles (UniSey) is supporting significant baseline activities, including a new Blue Economy Research Institute (BERI) and regional partnerships (such as the EU-funded EduLink FisherMan project (building capacity in Fisheries Management in the Western Indian Ocean) and an Indian Ocean Rim Association grant to strengthen regional environmental research platforms).

Barriers: Although the programmes and projects described above address numerous elements necessary for the management and conservation of terrestrial, coastal and marine ecosystems in the Seychelles, the baseline for the proposed project is characterised by a number of key deficiencies and barriers to the integrated and effective management of these ecosystems and the ecological, socio-economic and other services they provide. These barriers, which will persist in the absence of the GEF intervention, include:

- *Lack of capacity and experience in effectively managing the flow of coastal and terrestrial resources through a comprehensive R2R approach:* Weak coordination among the institutions, sectors and stakeholders that manage or influence terrestrial, coastal and marine resources and ecosystems means that the environmental impacts of development (particularly on the Seychelles' fragile and limited terrestrial and coastal forestry resources) are not being considered – either adequately or holistically. Given the small size of the islands in the Seychelles, and the proximity of people and the natural resources that they depend on, pressures on the environment are contributing to the accelerated degradation of critical ecosystems that not only support subsistence and livelihoods for at least 48% of the population, but underpin the national economy which depends on fisheries and tourism for 70% of GDP and more than 90% of exports. There is scope to follow a development path that is less environmentally damaging through implementation of a comprehensive R2R approach that enhances integration of sustainable forest and coastal management objectives in development planning and promotes greater overall consideration of environmental impacts.
- *Lack of understanding of the inter-dependency of terrestrial, coastal and marine ecosystems in the Seychelles:* Poor understanding of the scope of the problems associated with nutrient runoff into coastal and marine ecosystems, including contributions to harmful algal blooms and increases in invasive alien species (even in protected areas) is compounded by the lack of data on biological invasion rates over time, and inadequate knowledge of species invasiveness and distribution, particularly in key biodiversity areas (KBAs), which hampers effective IAS analysis and planning. Government institutions operate in silos and there is a lack of inter-departmental linkages and flow of information, which can be improved by strengthening data collection and monitoring capacities but which also needs sharing of data to understand interlinked issues and be able to act in a holistic manner, with shared and complementary actions. There is also a lack of professionals skilled in the fields of oceanography, forestry, climate science, environmental management, etc., to ensure this happens.
- *Lack of concrete demonstrations of effective and responsible management of interconnected coastal and terrestrial habitats in the face of intense development pressures:* There are limited coordinated (cross-sectoral) actions focused on effective co-management of wildlife and habitats, particularly in engaging local communities as guardians of their resources. Limited restoration and rehabilitation of degraded landscapes, with little capacity to follow up—e.g. to control IAS—is also a key concern. Poor attention to sustainable local income generation, resulting in a growing number of people classified as poor amidst the growing wealth of a few is leading to over-fishing of near-shore areas as fishing households strive to make ends meet and a surge in illegal activities such as coco-de-mer poaching. There is also limited capacity to monitor and manage interlinked upland forest and coastal ecosystems effectively and ensure that the flow of ecosystem services remains healthy. Limited capacity to reduce factors contributing to the prevalence or severity of forest fires, and inadequate training and resources to effectively fight forest fires, also represents a serious risk to fragile habitats.

The alternative scenario: The long-term solution is to undertake a comprehensive Ridge to Reef³⁰ (R2R) approach that addresses the ‘whole island’ priorities of improved management and conservation of upland forest and agricultural ecosystems as well as coastal and marine ecosystems in the Seychelles to produce global benefits in terms of conservation of globally significant biodiversity and the effective management of the large marine ecosystems (including coastal and near-shore marine ecosystems), and to arrest and reverse ecosystem degradation. This approach acknowledges and actively incorporates the issues of scale, proximity and interconnectedness of environmental systems on SIDS, and utilises the multi-focal area approach to provide ‘joined up’ solutions for sustainable development. By addressing a range of terrestrial threats to the marine environment, including flows of pollutants, nutrients and sediment, disrupted hydrological services, degradation of critical habitat, etc. that have significant negative impacts on important coastal/marine ecosystems including wetlands, mangroves, seagrass beds and coral reefs, the project will simultaneously improve the management of the terrestrial landscape, improve the effectiveness of integrated coastal management practices and secure the integrity of existing and new marine protected areas in the Seychelles, which are vital components of, and effective management tools to conserve, the Agulhas and Somali Current Large Marine Ecosystems. At the policy and strategic level, the project will unite the three most important spatial and resource planning processes in the country (which provide the baseline to this project), namely the Marine Spatial Plan (for the seascape), the Seychelles Strategic Plan (for the landscape, most notably the ‘Green Spine’ on Mahé and other upland forest areas in the Inner Islands), and the Land Use Plans (which embrace integrated coastal management principles and act as the most suitable vehicle to engage District Authorities and local communities in the implementation of these strategic plans). The project will build on these baseline activities by providing strategic incremental funding to implement priority actions in each of the plans.

Outline of the project strategy

Under Component 1, the project will undertake activities to expand and strengthen the system of terrestrial and marine protected areas (focused on KBAs and coastal MPA sites along the west coast of Mahé, Praslin and Curieuse) in order to conserve globally significant biodiversity and ecosystem services, including provision of fisheries, tourism and coastal protection services. Specifically, the project will support the establishment of temporal marine protected areas (known as TPAs), which target the critical habitats of migratory marine vertebrates that are often affected by seasonal, environmental and physical cues that may be temporary in time, extent and geographic location.³¹ TPAs are widely considered to be an effective management tool for mainstreaming ecosystem and biodiversity considerations effectively into a productive seascape and as a coping strategy for fluctuating impacts of climate change. In Seychelles, legislation has been recently introduced to support their use under the Protected Area Policy and the new National Parks and Reserves Act. In one pilot, applying the TPA increased Hawksbill turtle nesting success from 33% in 2013 to 61% in 2015.³² It is important to note that TPAs are not ‘temporary’ PAs, rather they are permanent but activated and managed only at certain times of year (temporal). In Seychelles, they are open to community use as regulated under the wider Mahe fisheries management plan at other times. In addition, the project will expand and strengthen the management of 6 KBAs gazetted in upland forest ecosystems that produce significant downstream impacts on coastal and marine ecosystems. Activities under Component 1 will also contribute to the protection and conservation of the globally significant coral reef ecosystems. Under Component 2, the project will implement a suite of activities to conserve and restore critical ecosystem functions and reduce the impacts of land-based stresses. Activities will take place in upland areas of the Inner Islands and will support sustainable land and forest management activities in high-value forest landscapes, including restoration of forest areas degraded by fire and IAS. At sites adjacent to these forest areas, the project will support the uptake of biodiversity-friendly sustainable land and forest management practices including agroforestry interventions. Through better management of forested landscapes and watersheds, the project will address the direct drivers of degradation downstream in coastal and marine habitats. Under Component 3, the project will accelerate the R2R approach through integrated ecosystem monitoring, information-sharing, policy harmonisation and partnership-building. The project will generate quantitative knowledge on the effectiveness of the R2R approach for the conservation of the coastal and marine ecosystem, and it will institutionalise integrated ecosystem health monitoring. The monitoring data will inform policy decision-makers representing various sectors on the Seychelles Sustainable Development Strategy Steering Committee and will enable them to formulate concrete recommendations on policy and monitoring harmonisation for the effective implementation of the R2R approach. The private sector will be supported to participate in monitoring and stress reduction activities. Experience and knowledge emerging

³⁰ The ‘ridge-to-reef’ approach is promoted by the GEF globally, most notably in the Pacific SIDS through the GEF-5 multi-agency, multi-focal area Program titled ‘Ridge-to-Reef’ (UNDP as the lead IA with FAO and UNEP participating as co-IAs). The GEF continues to promote the same approach in GEF-6, as outlined in GEF-6 IW Program 4 (paragraph 53 of the GEF-6 Strategy)..

³¹ Temporal MPAs are more sustainable than regular MPAs in several ways. In financial terms, temporal MPAs have much lower recurring costs than regular MPAs, as such costs consist primarily of: minimal infrastructure to maintain (apart from some signage / buoys); very minimal staffing requirements (periodic monitoring during only part of the year, an activity that frequently can be carried out by existing marine conservation / fisheries staff); and very localized needs for public education and outreach. Additionally their operation can be sustainably financed through community stewardship and corporate social responsibility programmes with local businesses, especially in Seychelles’ case where pristine nature and wildlife are the core assets of the countries tourism sector.

³² Webster et al. (2015). Turtle and terrapin monitoring on the south of Mahe. Marine Conservation Society Seychelles.

from the project will be shared among other SIDS in the Indian Ocean and beyond through the IW:LEARN related activities and other regional and global fora.

Component 1: Expansion of marine and terrestrial protected areas of the Seychelles' Inner Islands

Outcomes:

- 1.1 Expanded system of marine protected areas (MPAs) in the Seychelles' Inner Islands through the establishment of *temporal MPAs* (known as TPAs) in select sites.
- 1.2 Improved management of existing MPAs (Port Launay, Baie Ternay and Curieuse Marine National Parks).
- 1.3 Six Key Biodiversity Areas (KBAs) gazetted in upland forest ecosystems that produce significant downstream impacts on coastal and marine ecosystems.

Outputs:

- 1.1.1. Establishment of 7 new temporal MPAs at coastal sites (see Annex) downstream from areas where the project is undertaking the reduction of land-based stresses on coastal and marine ecosystems. Consists of: i) five TPAs that strengthen protection of 40.5 ha of critical nesting habitat for Hawksbill turtles (*Eretmochelys imbricate*); and ii) two TPAs that establish protections for 2,505 ha and 2,780 ha of critical feeding aggregation habitat for the whale shark (*Rhincodon typus*). The TPAs will be gazetted as permanent sites to which seasonal regulations apply.
- 1.2.1 Improved management of three existing marine protected areas (Port Launay, Baie Ternay and Curieuse Marine National Parks) encompassing 1,293 ha on the west coast of Mahé and at Curieuse island to: i) enable development or strengthening of MPA management plans, which include zoning within MPAs; ii) support the development and approval of new regulations (under the 2015 Protected Areas Act) to enhance conservation of globally significant coral reefs in coastal MPA sites; iii) strengthen MPA monitoring and enforcement capacity to prevent illegal fishing and harvesting of marine resources, to reduce negative impacts of tourism on coral reefs, etc.; and iv) deliver priority ecological analyses and improve data collection protocols and knowledge management systems.
- 1.2.2. Detailed biodiversity surveys of selected MPAs (including wetlands, coral reefs, mangroves and seagrass beds) undertaken to establish project baselines and determine key land-based threats to, and impacts on, marine and coastal ecosystems downstream of targeted watershed and forests.
- 1.2.3. Restoration and rehabilitation of selected MPAs through coastal reforestation (coastal forests and mangroves) and improved management of coastal freshwater ecosystems (including improved management of domestic wastewater through wetland filtration to reduce impacts on globally significant corals).
- 1.3.1 Gazetting of 2,235 ha of 6 KBAs (see Annex) under categories defined by the new PA Act in upland forest ecosystems with a focus on conserving biodiversity and carbon stocks. *Site boundaries to be finalized during PPG—to include areas where forest degradation has produced important downstream impacts on globally significant coastal and marine ecosystems.*

Component 2: Strengthened management of upland KBAs and adjacent areas to enhance the flow of ecosystem services through the R2R approach

Outcomes:

- 2.1. Improved frameworks for forest landscape management and restoration, and implementation of on-the-ground management activities in KBAs.
- 2.2 Enhanced local capacities for implementation and enforcement of sustainable forest and land management to reduce impacts of land-based stresses on MPAs.
- 2.3 Improved management of agricultural land through sustainable forestry and agro-forestry.

Outputs:

- 2.1.1. Policies and related legal and regulatory frameworks reviewed and reformulated to promote effective management of wetlands and forests in Seychelles. Strengthened enforcement to reduce/mitigate stresses from land-based sources and activities to coastal and marine ecosystems, in particular to MPAs.
- 2.1.2 Biodiversity-friendly sustainable forest management practices adopted and implemented in and around target KBAs to increase natural forest cover, reduce risks of IAS and wildfires, and promote soil, water and biodiversity conservation:
 - Improved management practices for lands recognized as 'environmental assets' which encompass the total area of 11,712 ha, or 60% of land mass of the Mahe and Praslin islands, including 10 "green corridor areas"(8 in the west coast of Mahe and 2 in Praslin).
 - Native plants propagated in forest nurseries.
 - Native trees and shrubs planted in bare or fire-damaged areas.

- Private land owners, farmers and communities participate in reforestation/rehabilitation of KBAs and adjacent areas.
 - Plant IAS controlled through targeted management actions.
 - 10 forest/watershed management committees established and capacitated for the improved management of green corridors. (One in Mahe and one in Praslin are already established; thus the net increase of the management committees supported by the project intervention is eight.)
- 2.1.3. Technical approaches to post-fire forest rehabilitation are piloted and the systems for a long-term monitoring for the forest recovery established in areas where rehabilitation of burned forest is undertaken. Capacity of Seychelles Fire and Rescue Services and community-based fire-fighting groups is strengthened to reduce threats of forest fires and their impact of forest ecosystems, including degradation of habitats and ecosystem services.
- 2.1.4. Systems and capacities for long-term monitoring of forest recovery established to monitor areas where rehabilitation of forests is undertaken, using biological and chemical parameters to measure chemical composition, sedimentation rates, water temperature and water flow rates. In parallel, effective monitoring of rivers and streams flowing out of target KBAs established that measures chemical composition, sedimentation rates, water temperature and water flow rates.
- 2.2.1. Biodiversity-friendly sustainable land and forest management practices implemented by local communities over 100 ha, such as organic agroforestry using native species, conservation agriculture, etc., with business plans in place to sustain. To be supported through the upscaling of networks already initiated by the GEF Small Grants Programme.
- 2.2.2. Capacity of farmers and small-holders built in SLM, soil conservation and fertility management, pest management and agro-forestry techniques. The ecological integrity of sites involving communities will be enhanced by establishing informal buffer zones for agroforestry production (see 2.3.1). Good practices promoted in community and small-holder land management, including local knowledge.
- 2.3.1. Agroforestry production expanded into degraded upland sites as well as existing areas of agricultural production in order to provide buffer zones for KBAs, reduce erosion on agricultural lands as well as the flow of nutrients, pollution and sedimentation into downstream coastal and marine ecosystems, and improve incomes and food security for local residents.

Component 3: Promoting the R2R approach through knowledge management, ecosystem health monitoring, and inter-sectoral coordination to foster partnerships in the Seychelles and knowledge-sharing among SIDS

Outcome 3: ‘Ridge to Reef’ (R2R) approach promoted through improved knowledge, strengthened partnership, and knowledge sharing with other SIDS in the Indian Ocean and beyond.

Outputs:

- 3.1.1. Targeted assessments to quantify the effectiveness of the land-based approach to improve the health of the coastal and marine ecosystem conducted in partnership with the Blue Economy Research Institute (BERI).
- 3.1.2. The integrated ecosystem health monitoring at the project sites institutionalised, coordinated by BERI, and the information-sharing mechanism scaled up, building upon the existing Clearing House Mechanism, to support the implementation of the R2R approach.
- 3.1.3. Policy recommendations on harmonisation of policies and monitoring efforts made by the Seychelles Sustainable Development Strategy Steering Committee (inter-sectoral coordination forum) to advance the R2R approach.
- 3.1.4. Private sector involvement strengthened to support the implementation of the R2R approach (especially in monitoring and stress reduction activities).
- 3.1.5. District Administrations sensitised with the R2R approach and knowledge and resources available to them to apply the R2R approach in their ICZM implementation.
- 3.1.6. Knowledge sharing - through Blue Economy Summit, Indian Ocean Rim Association conferences, SIDS conferences, Nairobi Convention meetings, etc. to promote the R2R application in the Indian Ocean SIDS and beyond.
- 3.1.7. National reporting capacity to Nairobi Convention, in particular on the progress made towards the LBSA Protocol and the (upcoming) ICZM Protocol, strengthened.

Incremental reasoning and global environmental benefits

In the baseline situation: The various programmes and projects described in the baseline analysis address specific geographical and thematic elements relevant to the approach proposed by this project, including sustainable management of marine, coastal and terrestrial ecosystems, management of protected areas, agricultural development, pollution control, etc. However, despite these initiatives, the baseline for the proposed project is characterised by a lack of management frameworks and policies, technical data, and understanding of the inter-dependency of terrestrial, coastal and marine ecosystems. Furthermore, the

business-as-usual scenario will see continued weakness in terms of coordination among the various sectors and stakeholders that manage or influence terrestrial, coastal and marine resources and ecosystems. As a result, degradation of key ecosystem services such as biodiversity conservation, climate change adaptation and mitigation, and watershed services will continue to be widespread in areas ranging from upland forest and agricultural landscapes to coastal wetlands and shorelines and out to coral reefs and other inshore marine habitats, with significant impacts including sedimentation, pollution and nutrient overloads flowing from terrestrial to coastal to marine ecosystems. These continued negative impacts on ecosystem functioning and resource sustainability threaten the long-term success of previous projects funded by the GEF and other partners, including significant efforts to strengthen marine protected areas, sustain inshore fisheries, reduce land degradation and minimise the impacts of invasive alien species.

In the alternative scenario enabled by the GEF: By utilising an integrated approach to managing marine, coastal and terrestrial ecosystems and stresses, the natural resources and ecosystem services provided by the main granitic islands of the Seychelles can be sustained and restored, thereby improving ecological functioning, strengthening the national economy and local livelihoods, and generating global environmental benefits. With only a relatively small investment from the GEF Trust Fund through the Biodiversity, Land Degradation and International Waters focal areas, the project can leverage a large number of on-going initiatives and produce both immediate and long-term positive impacts. Using GEF LD funds, the project will promote sustainable land and forest management to maintain and restore upland and coastal forest ecosystem functioning, reduce erosion, sedimentation and nutrient run-off impacts on coastal and marine ecosystems, and strengthen forest management planning and information capacities, including technical capacities to reduce the impacts of forest fires and agriculture and capacities among local communities to ensure their full ownership and engagement in promoting SLM/SFM practices in areas outside of protected areas and in productive land. Using BD funds, the project will significantly strengthen the network of marine and terrestrial protected areas in the Seychelles, which will conserve globally significant biodiversity, including globally significant corals, while also protecting valuable ecosystem services that sustain the highly important tourism and fishing industries in the country. Using IW funds, the project will strengthen the linkages between the management and conservation efforts made for the terrestrial ecosystem and those for the coastal and marine ecosystems to achieve better management effectiveness. Addressing the gaps in technical knowledge, strengthening capacity for more holistic ecosystem health monitoring, and promoting inter-sectoral coordination and policy harmonisation should be all considered as SAP implementation activities at the national level for two regional SAPs³³ that Seychelles endorsed at the ministerial level and help the country report their efforts to deliver towards the Nairobi Convention, specifically towards the proper management and conservation of marine and coastal resources. By implementing all of these activities in an integrated approach, the proposed project will seek to support the objectives of each focal area while at the same time producing synergies that not only increase positive impacts (e.g. forest landscape management and restoration that also protects coastal and marine ecosystems; improved and increased protection and management of terrestrial and marine ecosystems that reduces threats to coastal and marine ecosystems, including globally significant corals, and produces local and national socio-economic benefits and regional benefits at the WIO LME scale; etc.) but also make these interventions more sustainable over the long-term. The expected contribution from co-financing partners is \$28.25 million.

Global Environmental Benefits: The project is designed to: i) reduce threats to globally significant biodiversity by strengthening the country's system of marine protected areas and reducing negative land-based impacts on those ecosystems, as well as strengthening the management of forested Key Biodiversity Areas and their surroundings; ii) reverse land degradation in areas outside of formally protected areas and in productive land through the promotion of SLM/SFM practices and agroforestry, leading to the restoration and sustainable flows of forest ecosystem services with positive impacts to communities as well as to adjacent coastal and marine ecosystems; and iii) strengthen capacity and partnerships to promote integrated ecosystem management based on the R2R approach and implement key priority activities for the sustainable management of the Western Indian Ocean Large Marine Ecosystems adopted by the nine coastal and island states of the Western Indian Oceans. Through these actions, the project will contribute to the goals of the UNCCD by addressing key drivers of environmental degradation (e.g. land conversion, unsustainable land use, etc.) and contribute to the achievement of GEF-6 LD-2 Program 3 Outcomes 2.1 and 2.2 in Seychelles. The project will also contribute to the goals of the CBD in implementing activities identified in the National Biodiversity Strategy and Action Plan. The project will also contribute directly to the CBD goal for protection of 10% of the marine area globally, and contribute directly to the fulfilment of the Government of Seychelles' commitment, as delivered at Rio+20, for protection of up to 30% of its marine ecosystems. In addition, the project represents the country's commitment to invest in transboundary priorities jointly agreed among the nine coastal and island states of the Western Indian Ocean through

³³ The Strategic Action Programme for the sustainable management of the Western Indian Ocean Large Marine Ecosystems (WIO LME SAP) was endorsed by the nine WIO countries at the ministerial level during the period from 1 Sept 2014 to 23 June 2015. The ministerial signing ceremony was held on 23 June 2015. The Strategic Action Programme for the Protection of Coastal and Marine Environment of the Western Indian Ocean from Land-based Sources and Activities (WIO SAP) was endorsed by the nine WIO countries at the Ministerial level on 1 April 2010 during the 6th Conference of Parties meeting for the Nairobi Convention.

the ministerial endorsement of the two strategic documents, namely the Strategic Action Programme for the Sustainable Management of the Western Indian Ocean Large Marine Ecosystems and the Strategic Action Programme for the Protection of Coastal and Marine Environment of the Western Indian Ocean from Land-based Sources and Activities. The project will also contribute to the Government's commitment and obligation to the Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region, including its Land-based Sources and Activities Protocol. Finally, the project will assist the Seychelles in making its contribution to the fulfilment of Aichi Targets at the national level, as follows:

Aichi Targets	Activities of proposed project contributing to Aichi Targets
Target 6: By 2020, all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.	<ul style="list-style-type: none"> Strengthen MPA monitoring and enforcement capacity to prevent illegal fishing and harvesting of marine resources, to reduce negative impacts of tourism on coral reefs, etc.
Target 7: By 2020, areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.	<ul style="list-style-type: none"> Agroforestry production expanded into degraded upland sites as well as existing areas of agricultural production in order to provide buffer zones for KBAs
Target 8: By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity	<ul style="list-style-type: none"> Strengthened enforcement (or adoption of new specified policies and regulations) to reduce/mitigate marine pollution and damage to MPAs. Levels of agricultural chemicals in ecosystems downstream of target areas reduced to acceptable limits
Target 10: By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.	<ul style="list-style-type: none"> Reduced soil erosion rates due to reduced incidence / extent of forest fires Agroforestry production expanded into degraded upland sites as well as existing areas of agricultural production in order to reduce the flow of nutrients, pollution and sedimentation into downstream coastal and marine ecosystems Improved management of coastal freshwater ecosystems, leading to reduced stress to MPAs from domestic wastewater through improved collection and management of domestic wastewater
Target 11: By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine area, especially areas of particular importance for biodiversity and ecosystem services, and conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes,	<ul style="list-style-type: none"> 7 new temporal MPAs encompassing 5,325 ha formally established 2,235 ha of upland forests within KBAs formally gazetted, increasing representativeness and habitats within the terrestrial PA system and connectivity through the 'green spine' of Mahe Improved management of three existing marine protected areas (Port Launay, Baie Ternay and Curieuse Marine National Parks) encompassing 1,293 ha 11,712ha of land areas recognized as 'environmental assets', or 60% of land areas of Mahe and Praslin Islands benefits from the improved SLM/SFM practices, integrated into the wider R2R approach.
Target 12: By 2020, the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.	<ul style="list-style-type: none"> Five TPAs strengthen protection of 40.5 ha of critical nesting habitat for Hawksbill turtles (<i>Eretmochelys imbricate</i>); two TPAs establish protection for 2,505 ha and 2,780 ha of critical feeding aggregation habitat for the whale shark (<i>Rhincodon typus</i>) Strengthened MPAs and reduced land-based impacts on marine ecosystems supporting conservation of globally significant corals, most of them IUCN red-listed.
Target 14: By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.	<ul style="list-style-type: none"> Restoration and rehabilitation of selected MPAs through coastal reforestation (coastal forests and mangroves); restoration (seagrass beds); and improved management of coastal freshwater ecosystems. 10 ha of fire-degraded upland forest restored 40 ha of IAS-degraded upland forest restored; Local communities' engagement enhanced in the SLM/SFM activities and the restoration of ecosystem services from targeted buffer zones in Mahe and Praslin (e.g. at green corridors) through the establishment and operationalization of forest/watershed management committees.
Target 15: By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.	<ul style="list-style-type: none"> 3,307 tCO₂e sequestered from restoration of 10 ha of fire-degraded forest and 40 ha of IAS-degraded forest, and from agroforestry on 100 ha; 464,632 tCO₂e emissions avoided

Innovation, sustainability and potential for scaling-up: The project will pioneer the first GEF-financed R2R project to be implemented in the Indian Ocean. Specifically, the project will put in place a comprehensive R2R approach to the management of terrestrial, coastal and marine ecosystems in the Seychelles that will link sectors and partners responsible for the management of upland forest and agricultural areas with those responsible for downstream coastal and marine ecosystems, increase local communities' involvement in SLM/SFM activities systematically through the establishment of forest/watershed management committees and their engagement in the forest/catchment/coastal ecosystem restoration activities in the context of R2R approach, and for the first time focus a major project on addressing land-based stresses to the coastal and marine environment. A high level of Government support for this innovative approach is expected in view of the commitment of the Government to

implement both the new Seychelles Strategic Plan (with a special focus on the upland ‘green spine’ of the main islands) and the pending Marine Spatial Plan (for the management and conservation of marine ecosystems).

The project approach has significant potential for replication and up-scaling beyond the targeted areas by the project, as the challenge of sustainably managing upland forest and agricultural lands and reducing their negative impacts on downstream ecosystems is largely the same among all of the granitic islands in the country, including large islands such as Silhouette and La Digue and other smaller islands on the Mahé plateau. Institutional sustainability will be supported by focusing on capacity building in areas such as forest management, forest fire fighting, forest rehabilitation, enforcement of MPA regulations, data management capacity for MPAs, and the technical aspects of Blue Economy approaches. The sustainability of the newly established forest/watershed management committees will be ensured by linking them to relevant District Administrations as well as to the SSDS SC and treat them as a valuable implementation and/or monitoring mechanism at the local level, as their capacity develops. Forest/watershed management committees can enhance the bottom-up approach in forest and watershed management practices in the country. The sustainability of these management committees will ensure the strong local community engagement in the SLM/SFM practices in productive land and land outside of formal protected areas, which is key for the sustainability of the SLM/SFM practices promoted by the project in such areas.

In terms of financial sustainability, the financing of MPAs is already being addressed by the UNDP-GEF PA Finance project³⁴ and the SeyCCAT; in the terrestrial environment, farmers will receive support in the processing and marketing of agroforestry so as to improve profitability and provide an incentive to continue activities after the project has ended. The project is designed to not only build capacity but also raise awareness of the importance of SLM/SFM in the whole island context and in their pursuit of sustainable Blue Economy in line with the Seychelles Strategic Plan. With increased awareness among decision-makers, supported by tangible benefits from improved ecosystem functions generated through the on-the-ground pilot activities supported by this project, GEF investments through this project are expected to catalyse more resources to sustain, replicate and upscale similar activities.

Beyond Seychelles, the innovative approaches to be tested by this project, such as the R2R implementation and forest/watershed management committees, will be highly useful and replicable, as there are many small island countries that face similar human resources, natural resources and financial constraints in their pursuit to sustainable development.

2. Stakeholders. Will project design include the participation of relevant stakeholders from [civil society organizations](#) (yes /no) and [indigenous peoples](#) (yes /no)?

Stakeholder	Expected Role in Project Preparation
Ministry of Environment, Energy and Climate Change, Department of Environment	The Ministry of Environment, Energy and Climate Change (MEECC) will be the Executing Agency for the project. The Department of Environment, within MEECC, is responsible for management of the environment in the country, and will be the leading partner in the project design process, especially regarding forest management (IAS management, reforestation) activities and in reducing stresses on coastal and in-shore marine ecosystems.
Seychelles Fire & Rescue Service	The Seychelles Fire & Rescue Service (within MEECC) is responsible for all fire and rescue operations in the country, including fire prevention and fighting of forest fires. The Fire & Rescue Service will play a leading role in designing the forest fire management activities of the project.
Seychelles National Parks Authority (SNPA)	SNPA (a unit within MEECC) is responsible for managing many of the terrestrial and marine protected areas in the country. SNPA will be a key partner in planning for MPA-related activities and for the forest management activities in areas under its jurisdiction (e.g. Praslin NP, Curieuse Marine NP).
Division of Risk and Disaster Management (DRDM)	DRDM (a unit within MEECC) is responsible for disaster risk management, emergency management and civil protection. During project design, DRDM will act as a partner in assessing critical risks and mitigation strategies related to land-based impacts on coastal and marine ecosystems.
Seychelles Agricultural Agency (SAA)	Within the Ministry of Agriculture and Fisheries (MAF), SAA will act as the leading partner to design agroforestry activities.
Seychelles Fisheries Authority (SFA)	Within the Ministry of Agriculture and Fisheries (MAF), SFA will help to design project activities to establish / strengthen MPAs and to coordinate project design with the GEF SWIOFish3 project. It will also contribute to the integrated ecosystem health monitoring.
Public Utility Cooperation (PUC)	The Public Utilities Corporation (PUC) is a parastatal body wholly owned by the Government of Seychelles. It is the only utility company providing electricity, water and sewerage services in the Seychelles. Its major operations include: 1) generation, transmission, distribution and sale of electrical energy on the main islands of Seychelles, 2) treatment of raw water and supply of potable water to the population of Seychelles, and 3) treatment and safe disposal of wastewater to the environment. PUC will contribute its monitoring data for the project activities and to the integrated ecosystem health monitoring.
Farmers	Farmers' Associations will be consulted on agroforestry interventions.
Fishermen	Fishermen's' Associations / Co-Management Committees will be consulted regarding plans to establish / strengthen MPAs.
Environment Trust Fund (ETF)	ETF (a fund administered by MEECC's Department of Environment to provide small grants to address urgent environmental issues) will help to design project activities to control the invasive Crown of Thorns starfish.
Ministry of Education	The Ministry of Education will advise on Blue Economy education and knowledge-sharing (engaged through the MEECC Department of Education and Awareness Raising).

³⁴ Seychelles' Protected Areas Finance Project (GEF Project ID 5485).

Stakeholder	Expected Role in Project Preparation
UniSey	UniSey, through its Blue Economy Research Institute, will act as a leading partner in generating, analysing and disseminating technical and scientific knowledge that supports the science-to-governance approach in inter-sectoral policy and management discussions.
Environmental NGOs	The Seychelles Islands Foundation (SIF) (in partnership with SNPA) will be consulted regarding improved protection of coco-de-mer in the Vallée de Mai and Praslin NP; the Marine Conservation Society of Seychelles (MCSS) will help to design project activities to establish MPAs (especially temporal MPAs); the Terrestrial Restoration Action Society of Seychelles (TRASS) will be consulted on the rehabilitation of burned forests on Praslin; Nature Seychelles will be involved in wetland restoration and carbon assessment, and will assist with information dissemination through its Blue Economy Knowledge Centre; NGOs associated with smaller inner islands will be consulted concerning potential application and scaling-up of reforestation activities and IAS controls.
Community Associations	Community associations (in particular existing Watershed Committees) will advise on watershed management, including forest management and activities in forest-agriculture interface areas.
Private sector	Private tourism partners such as island owners and lessees will be consulted regarding MPAs and programmes for monitoring and collection of marine data.
District Administrations	Through the forthcoming decentralisation efforts of the National Government, more responsibilities will be delegated to the District Administrations, including the implementation of the land use plans, which may have significant positive and negative impacts on the terrestrial and coastal ecosystems. Building the capacity of District Administrations through sensitisation and training activities will yield positive impacts in the application of the R2R approach on the ground.

3. Gender Considerations: Are [gender considerations](#) taken into account? (yes /no).

Gender and social issues will be fully considered in the project, and gender accountability is a cross-cutting issue that will be tracked as part of the M&E system. The project will pursue a gender-sensitive approach whereby gender equality in participation will be strongly promoted. Seychelles is a matriarchal society with a high level of female-headed households³⁵. Furthermore, males are increasingly under-represented in technical, managerial and government positions as fewer trained male graduates enter the job market³⁶. There is thus an emphasis on engaging both women and men through targeted training, social mobilisation and other means, and a particular focus on male youth who are over-represented in unemployment statistics³⁷. The project will focus on equality in participation and will support vulnerable groups (such as male youth) to increase their ability to participate in the project and benefit from project achievements. Implementation of specific activities will pay particular attention to identifying and minimising the gender-differentiated consequences of environmental degradation, and participatory consultation processes will ensure that specific interventions are accepted and owned by communities, are gender-sensitive and equitable, and clearly understood outputs or targets are communicated. Socio-economic related activities during project implementation will engage males and male youth in agroforestry, forest management and reforestation activities where training will be provided to develop specific skills relevant to more commercially-oriented activities as opposed to casual backyard farming, and the women in agroforestry enterprises (e.g. through agricultural processing) who make use of their often already-developed entrepreneurial skills. The project will also support Government in encouraging male uptake of training opportunities (through UNISEY / BERI and other partners) in the R2R approach and coastal and marine conservation programmes.

4. Risks.

Risk	Rating	Management Strategy
Continued introductions / spread of IAS prevent any progress on reducing forest fires or increasing carbon sequestration	Medium	Seychelles' biosecurity system / protocols are expected to reduce introductions of new IAS, implemented through the new National Biosecurity Committee that is tasked with monitoring and responding to any new introductions, and the existence of new emergency response protocols.
Opposition from fishermen to new MPAs or strengthened MPA regulations in the Inner Islands	Low	The project design mitigates this risk by limiting the establishment of new MPAs to Temporal Protected Areas, which – because they are generally small in size and only seasonally in force – are not perceived by fishermen to be a threat to their livelihoods.
Socio-economic pressures (e.g. the importance of tourism development for the national economy) prevent effective implementation of development controls to protect coastal freshwater ecosystems	Medium	The Seychelles Planning Authority has previously given permission for development in sensitive areas, including KBAs, and current EIA processes are inadequate. Recent legal decisions have overturned Government land use planning designed to protect sensitive areas on constitutional grounds. However, EIA regulations are currently being revised and strengthened, including new regulations regarding wetlands, and this project will support these efforts as needed.
Climate change impacts (more severe storm events; longer and more severe dry seasons; ocean warming) produce significant negative impacts on project activities for ecosystem restoration and maintenance of ecosystem service	Medium	The risk of climate change impacts on ecosystem conservation / restoration activities can be minimised with careful planning and mitigation strategies (such as planting seedlings during seasons when extreme storm events or droughts are least likely, and selecting species most likely to survive such events).

³⁵ 55% of households are female-headed (GOS, Household budget survey 2013)

³⁶ 279 students graduated from University of Seychelles in 2013-2014 of whom 80% were female (University of Seychelles statistics).

³⁷ Causes for high levels of school drop-out and subsequent unemployment of male youths are difficult to determine, but are not related to poverty so much as to lifestyle and other weaknesses in livelihood processes (National Bureau of Statistics: data quoted in UNDP Country Programme Document for Seychelles 2017-2020).

5. Coordination: The proposed project will be carried out in coordination with several other projects, as described below:

Existing Initiatives	Proposed collaboration with Project
The pending WB-GEF SWIOFish3 project (2017-21) will address fisheries management and expansion of sustainable use zones (a category of marine protected areas) in the Seychelles.	Coordinate in marine environmental management: i.e. planning of MPAs under this project with MPAs and fisheries management under SWIOFish3 (Output 1.1.1). This project focuses on high-biodiversity areas (MPAs) in the Inner Islands whereas SWIOFish3 focuses on multiple use zones, with particular focus on greening the Seychelle's fisheries sector. The two projects are significantly different yet complementary, contributing synergistically to operationalizing the PA Policy and the new MSP.
The GOS-UNDP-GEF Seychelles' Protected Areas Finance project (2016-2020) is working to improve the management and financing of the existing system of PAs, focused on PA units in the Inner Islands managed by SNPA.	Collaborate with work on valuing ecosystem services and improving management of coastal MPAs on Mahé, Praslin and Curieuse (Outputs 1.1.2 and 1.1.3).
The GOS-UNDP-GEF Outer Islands PA project (2014-2018) is extending PA coverage into the outer islands, and also supporting national planning and capacity building for PA management.	Collaborate in planning for the national MPA system (Output 1.1.1).
The GOS-UNDP-AF coral reef restoration project (2016-2019) aims to upscale and mainstream the rehabilitation of degraded coral reefs in order to restore essential ecosystem services.	Collaborate in documenting threats and processes leading to loss of coral reefs; the AF project will focus on rehabilitating damaged coral reefs, while this project will focus on addressing threats (Outputs 1.2.1 and 1.2.2).
The pending AfDB-GEF SCCF Building Resilience in the Water Sector in Seychelles project (2016-2019) includes flood prevention infrastructure on Mahé and installation of river/stream gauging stations.	Collaborate with activities under this project to reduce stresses on coastal and marine ecosystems and enhance ecosystem resilience (Outputs under Outcome 2).
The UNEP-GEF Coastal EBA project (2014-2016) is focused on Praslin island and deals with spatial planning for integrated marine and coastal environment and resource management for EBA.	Some activities of the Coastal EBA project, such as integrated coastal management planning, will guide the proposed project's design (Output 2.1.1).
The EU GCCA+ project (2016-2019) is strengthening climate change policies and supporting adaptation to climate change by increasing coastal and flood protection on La Digue island (UNDP is implementing activities on La Digue).	Collaborate in the design of activities for coastal zone management (Outputs 2.1.1 – 2.1.6).
GOS-UNEP-UNDP-GEF Implementing Integrated Water Resource and Wastewater Management in Atlantic and Indian Ocean SIDS regional project (2012-2016) is focused on IWRM interventions on La Digue island.	The project is piloting small-scale approaches for integrated management of watersheds and coastal ecosystems that will provide lessons learned for the proposed project (Outputs 2.1.4, 2.1.5).
The GOS-UNDP-AF EBA project (2015-2020) focuses on enhancing ecosystem resilience and sustaining watershed and coastal processes in order to secure critical water provisioning and flood attenuation ecosystem services.	Collaborate with activities under this project related to protection of water regime in upland and coastal forest / wetland areas (Outputs under Outcome 2).
The regional UNDP-GEF SAPPHERE project (2016-2020) will support the implementation of the WIO LME SAP at the regional level, covering 9 coastal and island states in the Western Indian Ocean.	The project will address training needs in the region which can be more cost effectively done at the regional scale, such as training in remote sensing and data management, Ocean-Atmosphere (O-A) monitoring capacity and data products, and development of monitoring and mitigation activities for O-A impacts. They can provide useful inputs into the integrated ecosystem health monitoring efforts to be promoted at the national scale by the proposed project (Outcome 3). The SAPPHERE project can also support the technical capacity building of BERI to become a Centre of Excellence in the region on the sustainable Blue Economy. Further, the SAPPHERE project will support the development of a National Action Plan for the Seychelles, which complements the WIO LME SAP and help mainstream the regional priorities identified in the WIO LME SAP into the national development policy context of Seychelles. The proposed project will be fully engaged in the NAP development process.
The UNDP-GEF Joint Management Area Demonstration project (2016-2019) is supporting the Governments of Seychelles and Mauritius to promote sustainable utilisation and management of resources within the Joint Management Area (the extended continental shelf jointly managed by the two countries).	The project will collect oceanographic data for the JMA, which can be made available through the information-sharing portal and/or linked to the integrated ecosystem health monitoring, as appropriate (Outcome 3).
UNEP-GEF WIOSAP regional Implementation of the Strategic Action Programme for the protection of the Western Indian Ocean from land-based sources and activities (WIO-SAP) project, to be executed by the Nairobi Convention, will support the implementation of the WIO-SAP with some demonstration activities to reduce stresses to the coastal ecosystem from land-based activities.	If/when the project identifies stress reduction demonstration activities in Seychelles, the proposed project will closely coordinate and collaborate with such demonstration activities for improved synergy, coordination, data and knowledge-sharing at the national level in the Seychelles. The results from the proposed project can be presented by the Government of the Seychelles to other WIO countries through Nairobi Convention fora.

6. Consistency with National Priorities. Is the project consistent with the National strategies and plans or reports and assessments under relevant conventions? (yes /no).

The project is country-driven and the project's design is consistent with, and supportive of, national development strategies and approaches. The project scope and strategy is based on the outcomes of a **National Portfolio Formulation Exercise (NPFE)** carried out during the first 8 months of 2015 to establish priorities for funding from GEF-6, which called for a project for “A Ridge to Reef approach to landscape and seascape planning and management in Seychelles”, with the objective “To support the

operationalisation of national planning processes, linked to regional plans and international conventions, through long-term climate change mitigation, carbon sequestration, protection of biodiversity in terrestrial and marine ecosystems, through new management regimes, capacity enhancement and innovative knowledge generation and management”. In GEF-6 NPFE, National stakeholders emphasized the needs to strengthen the management of forest and forestry, particularly in areas outside of protected areas and productive lands, to restore the country’s terrestrial ecosystem functions and its services for their sustainable future. This is in line with a key priority of Ministry of Environment, Energy and Climate Change to raise the profile of forestry in the national awareness and budget allocation. Development planning in the Seychelles is guided by the Government’s **Strategy 2017**, developed in 2005, and subsequent **Vision 2020**, which set out the priorities and main approaches for development. The new **National Development Strategy (NDS)** is the over-arching document for environmental management in the Seychelles; the NDS incorporates the **Seychelles Sustainable Development Strategy 2012-2020 (SSDS)** and the country’s commitments under the CBD, UNFCCC and UNCCD, and is in line with the recommendations of the **National Capacity Self-Assessment (NSCA)** conducted in 2005. The National Development Strategy (NDS) identifies a number of priorities for biodiversity conservation and ecosystem management that the proposed project supports, including: a) new legislation on fisheries and law enforcement, b) mainstreaming biodiversity into production sectors, c) putting in place sustainable financing mechanisms for protected areas and outer islands, d) enlarging land, coastal, and marine protected areas, e) monitoring and protecting endangered species, f) promoting land conservation and drainage and g) urban planning development and geographic information systems. The project also complies with and supports national commitments and objectives relevant to the targeted focal areas of the project. Issues of land management are elaborated in the **Seychelles National Action Plan for Sustainable Land Management (2011)**, which is in line with the aims and requirements of the UNCCD, and the recent **National Land Use Plan (2013)** and **Land Use Guidelines (2013)**; all of these documents prioritise sustainable land management and have a strong environmental protection component. Other important land management documents include the **Seychelles National Agriculture Investment Plan**, the **Water and Sanitation Development Plan**, and the **Solid Waste Policy**, which recognise the need for effective management of agricultural and industrial pollution and wastes. Biodiversity conservation priorities are defined in the Seychelles’ **National Biodiversity Strategy and Action Plan (NBSAP; 2015-2020)**, which is the national mechanism for implementation of the CBD, and in the country’s **Fifth National Report to the Convention on Biological Diversity (2014)**, which identifies the following “main threats” to biodiversity that the proposed project will help to address: invasive alien species (IAS) in terrestrial ecosystems; habitat loss in lowland wetlands; a variety of threats to marine and coastal ecosystems; climate change impacts on Seychelles’ biodiversity and related socio-economic well-being; and insufficient knowledge and related data management.³⁸ The project also will contribute to the Seychelles **Intended Nationally Determined Contribution (INDC; 2015)** under the UNFCCC, in which “the Republic of Seychelles will reduce its economy-wide absolute GHG emissions by 122.5 ktCO₂e (21.4%) in 2025 and estimated 188 ktCO₂e in 2030 (29.0%) relative to baseline emissions”, and it will support the INDC’s Long Term Vision, which includes “Put in place measures to adapt, build resilience and minimise vulnerability to the impacts of climate change, especially in critical sectors such as water, food and energy security, and disaster management”. Project activities are also fully in line with Seychelles obligation towards the **Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region**, and with priorities identified in the **Strategic Action Programme for the Protection of Coastal and Marine Environment of the Western Indian Ocean from Land-based Sources and Activities**, the **Strategic Action Programme for the sustainable management of the WIO Large Marine Ecosystems (WIO LME SAP, 2014)** and the **Seychelles Marine Ecosystem Diagnostic Analysis (MEDA)** and the **Transboundary Diagnostic Analysis for the Western Indian Ocean**.

7. Knowledge Management: The proposed project will seek to learn from, and utilise lessons learned and best practices from, several recent and on-going initiatives, including: integrated coastal management planning developed under the UNEP-GEF Coastal EBA project (2014-2016); small-scale approaches for integrated management of watersheds and coastal ecosystems piloted under the GOS-UNEP-UNDP-GEF IWRM regional project (2012-2017); scientific knowledge and approaches developed under the UNDP-GEF SAPPHERE project (2017-2021); strategies and methodologies for the control of invasive alien species developed under the GOS-UNDP-GEF Mainstreaming Prevention and Control Measures for Invasive Alien Species into Trade, Transport and Travel Across the Production Landscape project (2008-2014); and information and design guidelines for temporal marine protected areas developed under the GOS-UNDP-GEF Strengthening Seychelles’ Protected Area System through NGO Management Modalities project (2010-2015). The project will implement its own Communication, Advocacy and Knowledge-Sharing programmes to promote the R2R approach; an information platform providing data and knowledge resources on biodiversity, forests, coasts, land, carbon and water management practices, climate change impacts / trends, etc., supporting the integrated and holistic management approach to the island ecosystem. Strong emphasis will be put on the knowledge sharing with other SIDS in the Indian Ocean (Comoros, Maldives and Mauritius). This project will be the first MFA project in Africa and in the Indian Ocean promoting the R2R approach.

PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

³⁸ Government of Seychelles (2014). *Fifth National Report to the United Nations Convention on Biological Diversity*; p. 6

A. RECORD OF ENDORSEMENT³⁹ OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):
 (Please attach the [Operational Focal Point endorsement letter](#)(s) with this template. For SGP, use this [SGP OFF endorsement letter](#)).

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
Wills Agricole	Principal Secretary – Energy & Climate Change; GEF Operational Focal Point	MINISTRY OF ENVIRONMENT, ENERGY & CLIMATE CHANGE	26 MARCH 2016

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF policies⁴⁰ and procedures and meets the GEF criteria for project identification and preparation under GEF-6.
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Agency Coordinator, Agency name	Signature	Date (MM/dd/yyyy)	Project Contact Person	Telephone	Email
Adriana Dinu, Executive Coordinator, UNDP-GEF		8 April 2016	Akiko Yamamoto, Regional Technical Advisor	+251 91250 3316	akiko.yamamoto @undp.org

C. ADDITIONAL GEF PROJECT AGENCY CERTIFICATION (APPLICABLE ONLY TO NEWLY ACCREDITED GEF PROJECT AGENCIES) Not applicable

³⁹ For regional and/or global projects in which participating countries are identified, OFP endorsement letters from these countries are required even though there may not be a STAR allocation associated with the project.

⁴⁰ GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, and SCCF