



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:	Enhancing National Development through Environmentally Resilient Islands (ENDhERI)		
Country(ies):	Republic of the Maldives	GEF Project ID:	9668
GEF Agency(ies):	UNEP	GEF Agency Project ID:	01502
Other Executing Partner(s):	Ministry of Environment and Energy (MEE)	Submission Date:	January 13, 2017 (1 st resubmission) March 27, 2017 (2 nd resubmission)
GEF Focal Area(s):	Biodiversity	Project Duration (Months)	60
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 (\$)	335,632

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
BD4 – Programme 10: Integration of Biodiversity and Ecosystem Services into Development and Finance Planning	GEF	1,532,968	5,500,000
BD3 – Program 6: Ridge to Reef+: Maintaining Integrity and Function of Globally Significant Coral Reef Ecosystems	GEF	2,000,000	6,500,000
Total Project Cost		3,532,968	12,000,000

B. INDICATIVE PROJECT DESCRIPTION SUMMARY

Project Objective: To enhance reef protection, resilience and ecosystem recovery by reducing development impacts in the Laamu Atoll, enabled for replication nationally through public awareness and integrating the values of marine biodiversity and other natural capital in national policies and budgets

Project Components	Financing Type	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Co-financing
1. Green growth development for Laamu Atoll in the tourism, food and construction sectors.	TA	<p>1.1 Increase in area of sustainably managed reefs and other natural capital resources under a Green Growth policy for Laamu</p> <ul style="list-style-type: none"> ▪ 100,000ha reefs included in sustainable development plans, of which 20,000 ha benefitting from direct project interventions ▪ Marine Management Area (MMA) delineated & innovative incentive-based co-management mechanisms agreed ▪ At least 3 island communities, incl. > 35% women & 20 % youth, empowered and having agreed roles in NC-based planning for Integrated Coastal Zone Management (ICZM), and co-management of a new MMA ▪ Values, trade offs and Costs/Benefits of alternative development scenarios established for Laamu Atoll based on the Natural Capital (NC) Accounts, highlighting NC impacts, protection & rehabilitation targets, as well as the most optimum economic development paths and investments per 3 targeted sectors applied 	<p>1.1.1 <i>Green Growth policy, participatory MMA plan, and Sustainable Development and Investment Plans</i> adopted for Laamu Atoll and 3 villages (detailed), incorporating NC values and participatory ICZM practices, investments for NC and spatial targets to enhance reef resilience and protection in at least 100,000 hectares.</p> <p>1.1.2 Three System of Environmental-Economic Accounting- Experimental Ecosystem Accounting (SEEA-EEA) based <i>Natural Capital Accounts</i> established for Laamu Atoll (freshwater account, marine and coastal ecosystems)</p>	GEFTF	1,782,365	5,000,000

		<p>to a Green Growth policy, the MMA as well as the Sustainable Development and Investment Plans).</p> <ul style="list-style-type: none"> Government budget planning for Laamu Atoll showing increase with 7% over the length of the project related to resource allocation for NC. 3 island communities agreed modifying land-based production processes and sustainable fisheries for reduced impacts to reefs <p><u>1.2</u> Reduction in stressors impacting Laamu Atoll reefs through implementation of green growth and ICZM practices in the food (fisheries and agriculture), tourism and construction sectors.</p> <ul style="list-style-type: none"> 20% reduction (LOP) water use by participating families and SME 50% reduction (LOP) solid and domestic waste loads, and properly processed or collected for sanitary disposal 30% reduction (LOP) organic water pollution loads (baseline during first year of project) 100 HH practising sustainable bait and grouper fisheries One new resort working with Atoll Council protecting marine resources At least 2 construction firms adopted sustainable building practises in Laamu Atoll Capacity built with 10 staff of Laamu Atoll and Village Councils to measure, capture and report on positive results of Green Growth/ICZM practices 	<p>extend account, others - e.g. biodiversity and ecosystem services account) including valuation of assets, flows and impacts (physical and monetary) against the various development scenarios.</p> <p><u>1.2.1:</u> Three island communities adopt eco-technologies for sustainable food production and disposal of domestic waste (incl. sewage)</p> <p><u>1.2.2</u> At least 100 fisheries households implement sustainable tuna bait and demersal reef fisheries practices in conformity with the Maldives Fisheries Master Plan.</p> <p><u>1.2.3</u> Partnership, policy and implementation standards for Green Growth established with the Atoll Council, national construction firms and Tourism Operators on Laamu Atoll, and been registered nationally</p>			
2. Building the social capital supportive of a national economy based on sustainable use of island and reef biodiversity and natural capital values	TA	<p><u>2.1</u> People on Laamu and national population understand the values and dependencies on marine natural capital and biodiversity to their livelihoods and sustainable development</p> <ul style="list-style-type: none"> Increased knowledge and awareness levels of industries, civil society and government (>35% women & 20% youth) on reefs and marine NC values and dependencies (baseline during 1st year of project) At least 2 tertiary and 1 secondary school curriculum incorporate marine NC objectives, and basic student capacity built on NC accounting (tertiary level only) 	<p><u>2.1.1</u> A national gender-sensitive national Social Marketing and Outreach Plan developed and implemented by the National Biodiversity Knowledge and Outreach Centre (a co-funded new investment) at MNU Laamu Campus)</p> <p><u>2.1.2</u> National schools curricula, teacher training, and fisheries and agriculture curricula at MNU amended by incorporating marine biodiversity and natural capital objectives, tools and skills development.</p>	GEFTF	692,366	3,800,000
3. Mainstreaming marine Natural Capital and Biodiversity values in the	TA	<p><u>3.1</u> Increased institutional capacity, clarified mandates and integration of NC Accounting in government policy and programs on marine biodiversity conservation</p> <ul style="list-style-type: none"> Enhanced national government institutional capacity and coordination for NCA as 	<p><u>3.1.1</u> Institutionalized capacity and national methodology on Natural Capital Accounting established – based on the SEEA-EEA framework,</p>	GEFTF	890,000	2,690,000

<p>policies and regulatory frameworks of the food (fisheries and agriculture), tourism and construction sectors through natural capital accounting</p>	<p>measured by # of staff trained and involved in NC stock taking, valuation and scenario analysis</p> <ul style="list-style-type: none"> ▪ Reduction in NC & biodiversity-harmful financial incentives ▪ Increase # fiscal measures and/or 7 % increase in budgets (LOP) benefitting marine NC – specifically reefs of Laamu Atoll ▪ At least one national government policy or sector program adopted or modified to include NC considerations and targets based on the work of the NC Accounts ▪ NC Accounts linked to the national (economic) accounts and reported on (incl. SDG) by MEE and its National Bureau of Statistics ▪ Plans made for replication and national upscaling of the methodology and approach under the Atoll-wide NC Accounts coordinated by MEE, NBS and the Office of the President <p><u>3.2</u> Enhanced protection of coral reefs and other marine Natural Capital through actions by the corporate food, tourism and construction sectors</p> <ul style="list-style-type: none"> ▪ At least two sectors conduct binnual sustainability reporting ▪ At least 15 corporate staff of the tourism and building sectors trained in NC accounting, sustainability reporting and green growth strategies ▪ Integration of NC-values and accounting in at least three company business or operational plans – benefitting reef resources over at least 20,000 ha in the MMA in Lamuu Atoll. <p><u>3.3</u> A spatial planning framework reinforces incorporation of NC accounting in existing national and sector development strategies likely to affect sustainable development in the food, tourism and construction sectors.</p> <ul style="list-style-type: none"> ▪ Increase with 25% (LOP) in spatially deliniated marine management area nationally for sustainable management and protection of reefs and other NC through sector development ▪ At least 3 NC indicators improving towards meeting related SDGs targets ▪ Results of the NC Accounts and optimum development scenario(s) incorporated in the national spatial planning 	<p>for National NC-responsive statistics, policies, plans and budgeting.</p> <p><i>Steps:</i></p> <ul style="list-style-type: none"> • National NCA Technical Committee operational • NCA/SEEA-EEA Roadmap agreed • SEEA Quick Start Guide book prepared • Expand and adapt SEEA methodology for Maldives and Atoll level specifically; and build capacity in its application • Establish Atoll-wide NC Accounts – see 1.1.2 <p>3.1.2 Mainstreaming of NC objectives into government finance, development planning and policy (reform) by using the datasets and valuation of various development scenarios through the NC Accounts</p> <p><u>3.2.1</u> Natural Capital flows and values, footprint analysis, as well as protection targets set in three sector business or operational plans, supported by institutional capacity building and sector roundtables for the food, tourism and construction industries.</p> <p><u>3.3.1</u> NC-based spatial planning governance framework established through a government Decree, including a technical inter-ministerial Spatial Planning Task Force and modalities for full stakeholder involvement</p> <p><u>3.3.2</u> A Draft National Spatial Plan, released for public consultation, demonstrating sustainable development options for the period 2021-2030,</p>			
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			including incorporating the results of valuation and scenario analysis through the NC Accounts.			
			Subtotal		3,364,731	11,490,000
			Project Management Cost (PMC)	GEFTF	168,237	510,000
			Total Project Cost		3,532,968	12,000,000

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 and Energy	In-kind	500,000
Recipient Government	Ministry of Environment and Energy	Grant	1,250,000
Recipient Government	Ministry of Fisheries and Agriculture	In-Kind	250,000
Recipient Government	Ministry of Fisheries and Agriculture	Grant	250,000
Recipient Government	Ministry of Tourism	In-Kind	250,000
Recipient Government	Local Government Authority	In Kind	250,000
Recipient Government	Ministry of Housing and Infrastructure, the Maldives Construction Institute (CATI), Maldives Association of Construction Industries	In-kinds	100,000
Recipient Government	Ministry of Housing and Infrastructure, and the Maldives Construction Institute (CATI), Maldives Association of Construction Industries	Grant	250,000
Recipient Government	Maldives National University	In-kind	750,000
Recipient Government	Maldives National University	Grant	1,000,000
Recipient Government	Laamu Atoll Council and 3 island Councils (and communities)	In-kind	750,000
Donor Project	WB-Climate Change Adaptation Project (CCAP)	In-Kind	150,000
Donor Project	UNDP GCF - Support for Vulnerable Communities in the Maldives to Manage Climate Change-Induced Water Shortages	In-Kind)	500,000
Donor Project	UNDP GCF - Support for Vulnerable Communities in the Maldives to Manage Climate Change-Induced Water Shortages	Grant	500,000
CSO	IUCN, other NGOs	To be confirmed (In-Kind)	300,000
CSO	IUCN, other NGOs	To be confirmed (Grant)	100,000
Donor Project	USAID-IUCN: REGENERATE (strengthening the sustainable management of coral reefs)	In-kind	1,000,000
Donor Project	USAID-IUCN: REGENERATE (strengthening the sustainable management of coral reefs)	Grant	450,000
Donor Project	UNDP: LECReD (Low Emission and Climate Resilient Development)	In-kind	1,500,000
Donor Project	UNDP: LECReD (Low Emission and Climate Resilient Development)	Grant	750,000
Others	SKY URBAN VFS PTE LTD: Low Energy/Low water Vertical Food Systems for Agriculture	To be confirmed (In-Kind)	200,000
Others	SKY URBAN VFS PTE LTD: Low Energy/Low water Vertical Food Systems for Agriculture	To be confirmed (Grant)	200,000
Others	MicroBio Engineering Inc (Algal nutrient scrubbing of effluent water) www.microbioengineering.com	To be confirmed (In-Kind)	200,000
Others	MicroBio Engineering Inc (Algal nutrient scrubbing of effluent water) www.microbioengineering.com	To be confirmed (Grant)	200,000
GEF Agency	UNEP SCP, resource economy and TEEB programs	In-kind	350,000
Total Co-financing			12,000,000

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)	Total (c)=a+b
UNEP	GEFTF	Maldives	Biodiversity		3,532,968	335,632	3,868,600
Total GEF Resources					3,532,968	335,632	3,868,600

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
UNEP	GEF TF	Maldives	Biodiversity		120,000	11,400	131,400
Total PPG Amount					120,000	11,400	131,400

F. PROJECT’S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS

Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
1. Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	100,000 Hectares ¹

PART II: PROJECT JUSTIFICATION

Project Description

1.1 The global environmental problems, root causes and barriers that need to be addressed

Environmental & Socio-Economic background and trends related to Global Environmental Threats

The Maldives is an island nation of 26 atolls and an estimated 1,192 islands. The area of the country is 859,000 km², of which an estimated 21,300 km² is comprised of atolls, including 5,500 km² of reef systems, and the remainder is ocean. Only 198 of the islands are inhabited and of these 118 have populations of less than 1,000. The maximum elevation above sea level in the Maldives is less than 1.5 meters, making the country highly vulnerable to storm surges (the 2004 Tsunami caused the loss of 100 lives, made 14 islands uninhabitable and left 79 islands without access to freshwater). The reef ecosystem of the Maldives is the 7th largest in the world and the 5th most biodiverse. Its atolls are significant because they are by far the largest group of coral reefs in the Indian Ocean, with an area in excess of 21,000 km² and a total reef area of more than 3,500 km². There are an estimated 250 species of hard corals representing over 57 genera, and 1,200 species of reef and reef-associated fish species. The waters of the Maldives support a diverse megafauna of over 20 species of whales and dolphins, and 40 species of sharks. 167 species of birds, including 5 endemic to the country, have been recorded in the Maldives. Among animal groups that are internationally threatened are populations of green (*Chelonia mydas*, IUCN Red List Category EN¹) and hawksbill (*Eretmochelys imbricata*, IUCN Red List Category CR) turtles; the Maldives is perhaps the most important feeding area for hawksbill turtles in the Indian Ocean. It is also home to globally significant populations of whale shark (*Rhincodon typus*, IUCN Red List Category EN) and manta rays (*Manta birostris*, IUCN Red List Category VU). Other globally significant coral reef species include the Napoleon wrasse (*Cheilinus undulates*, IUCN Red List Category EN), Giant Grouper (*Epinephelus lanceolatus*, IUCN Red List Category VU)².

The Maldives society and economy, including its two largest economic sectors – tourism and fisheries – are highly dependent on marine natural capital and particularly the diverse values provided by its coral reefs and pelagic fish stocks. A pristine coral reef experience is vital to sustaining the tourism industry of the Maldives, which accounted for total revenue of about USD 375 million (or 40% of total national revenue) in 2014 from over 1.2 million visitors. Tuna catches in 2014 were 122,000 Mt, representing 95% of the recorded national fish landings with an export value of over US\$40 million. The ability to sustain the tuna industry depends on a sustainable supply of bait fish caught in the shallow inner-waters of the Atoll lagoons, but pressure on the bait fishery has increased dramatically and is estimated as between 35,000 and 80,000t per year. There also is a strong growth in the demersal reef fishery to meet demand from international visitors and an international reef fish market³⁴. This industry concentrates on trevally, sea perch and sea bass with some cod, especially the *coral trout*. Reported heavy declines in the reef fishery, the bait fishery and the beche-de-mer fishery have led to these being targeted in the National Fisheries Management Plan, presently under preparation. Overall, Maldives natural capital including biological diversity is estimated to contribute 71% to employment, 89% to GDP and 98% to exports⁵.

¹ This estimate is based on direct and indirect impacts of the project on the islands and reefs of the Laamu Atoll (Component 1) and flow on effects through better planning in relation to development projects in Component 3 resulting in about 50% of the atoll reef habitat benefitting (100,000 ha).

In order to sustain the country's coral reefs, an area of approximately 250 km² has been included in 42 legislated marine protected areas (MPAs), while another 274 locations identified as *Environmentally Significant Sites*. In addition, over 100 resorts have nominated *House Reefs* where activities likely to cause impacts on reef ecosystems are restricted by agreement within Marine Management Areas (MMAs), which extend to 1 kilometer from the beach where possible. MMAs represent a significant area of protected reefs maintained and often led by professional staff employed by the resorts and assisted through international project assistance. In contrast, formal MPAs – which are generally larger in area, inherently play a limited role due to challenges with supervision and enforcement by the central government. Due to lack of Government resources only one of the 42 MPAs is regarded as being well managed. Therefore MMAs have higher potential towards improving the protection of reefs, and be a better model of devolved governance; yet further work would be needed against the baseline situation to increase the role and benefits of MMAs to local communities, as well as their integration in whole Atoll development plans and investments, including to contain land-based and marine drivers of reef degradation. The Maldives has set a priority to establish the whole country as *Biosphere Reserve*; however, to be effective there needs to be an acceptance by individual villages and Atoll Councils throughout the country of the roles they must play in order to achieve sustainability.

Component 1 of the project will be focused on the Laamu Atoll, which has a total area of 8,846 km², including 2,037 km² of reefs. After the 1998 bleaching event⁶, observations taken in 2000 over the whole range of reef habitats, showed live hard coral cover to be around 10%, which recovered well since that time, but in 2016 were subject to severe bleaching that reportedly impacted over 80% of the reef area. The fishers on Laamu Atoll utilize pole-and-line tuna fishing which appears to be sustainable for the tuna stocks. However, bait fish species caught in this atoll (primarily apogonids) are taken by draping bait nets over the reef in combination with powerful lights, and the effect of this fishing method on the patch reefs is believed to be quite severe, especially to coral structures and to the herbivorous fish guilds⁷. In 2014, Laamu Atoll received 14,671 Mtons of tuna (11.4% of the national fish landings) and 8 M tons from demersal fisheries. A large tuna processing and marketing facility has been established on Maandhoo Island, capable of employing 1,000 workers. Various attempts have been made to develop other commodities such as seaweed and beche-de-mer, indicating the suitability of the area for green growth, but these have not advanced because of insufficient focus on markets.

While Laamu has a land area of only 231 km² on 77 islands, agriculture contributes almost as much to employment and local livelihoods on the Atoll as fishing. In consequence there has been a high demand for water from groundwater sources which are regarded as *open access*. In conjunction with growing demand from domestic requirements⁸ and industry, the demand for groundwater has resulted in salinization and pollution by agro-chemicals and sewage. There is strong scientific evidence that groundwater exchange with the surrounding reef environments can be very significant⁹ and this will be a focus for partnership with the Green Climate Fund Maldives Project which is designed to address water supply and groundwater remediation in the outer islands (including Laamu)¹⁰. Tourism on Laamu is still relatively low compared to the atolls closer to Male; at present, Laamu has one large luxury resort (the Six Senses Resort on Marmendhoo Island) and four smaller hotels offering a total of around 200 beds. There are plans for further significant growth with at least another four resorts planned for the Atoll, which is likely to exacerbate the already significant demand for locally produced fresh food such as fish and vegetables. The planned construction of an airstrip on Kalhaidhoo Island (35min flight from Male) will undoubtedly stimulate acceleration in tourism in the Atoll.

Environmental problems, drivers and root causes

More than any other country, the future of the Maldives requires that its coral reefs remain diverse and vigorously healthy. Further loss of its living coral cover will not only undermine the fishing and tourism on which the country's economy depends, but will also threaten the stability of its land surface. Climate change impacts such as increasing temperature, ocean acidification and rising seawater levels affect the living reefs that are vital for protecting human infrastructure, groundwater resources, food production, and other ecosystem services that support human life in these small islands. The impact of climate change on the coral reefs has already been severe, and it is essential that impacts from overfishing and from pollution coming from island communities do not exacerbate the impacts from climate change to enable the reefs to recover. Against this backdrop, there appears also to have been a significant decline in the average hard coral cover in the Maldives over the past 50-60 years, although the figures need to be interpreted carefully. In 1958 coral cover was estimated at 65%, falling to 56% in 1964 and 27.5% in 1992. Since that time the corals have been subjected to at least two major coral bleaching events in the two extreme *El Nino* years of 1998 and 2015-16¹¹, with coral bleaching during the latter period resulting in 80% bleaching of live coral cover¹².

A variety of other *stressors*¹³, strongly related to human activity on land such as outflows in surface and groundwater from agriculture, domestic sewage, solid waste, and infrastructure development, are producing additional and significant threats to coral reefs in the Maldives that were not present to the same degree in the recovery period from the 1998 coral bleaching event. For example, construction and dredging operators produce significant sediment run-off; groundwater on all of the inhabited islands is suffering saltwater intrusion in response to over-extraction and contamination and by nutrient enrichment from domestic sewage and agricultural chemicals; and solid waste management is a serious problem in most atolls, especially where tourism is concentrated and leachates contribute to groundwater, surface water pollution and polluted water entering the reef environment. Another key stressor on coral reef ecosystems in the Maldives are indiscriminate and inefficient methods for bait fishing that result in large amounts of by-catch¹⁴, primarily affecting herbivores (e.g. *F. Scaridae*, *F. Acanthuridae*, *F.*

Lethrinidae), which are important for keeping benthic algal competitors of the weakened coral under check¹⁵. All of these stressors on coral reef ecosystems are exacerbated by the rapid growth in human population and in visitation in the Maldives. Since the 1998 bleaching event, the country's population has increased by 34% to around 350,000. In addition, the number of tourists visiting the country has increased by 7-10% annually since the 2004 Tsunami; in 2015, 1.3 million tourists visited the Maldives and the number of resorts had reached 115 that together offered 24,500 beds. In support of the tourism industry and the strong surge in construction there is now a resident expatriate population of around 250,000.

The urgency of protecting those coral reefs that remain in the Maldives is underscored by the difficulty of carrying out coral reef recovery. In 2008 the *Global Coral Reef Monitoring Network* (GCRMN) concluded that 19% of coral reefs were unlikely to recover, 15% were in a critical phase and 20% are threatened by local activities¹⁶. While 2013 data reported by Morri *et al.* (see footnote 10) showed strong recovery, especially by the fast growing and storm-fragile *Acropora* spp. that now dominate the coral community at most lagoon sites, the recovery of other massive coral species is less clear and the picture spatially highly variable. The process of coral reef recovery is a long one and depends on the frequency of major bleaching events as well as the existence of the *stressors*¹⁷, identified above. Accumulating evidence from research into bleaching recovery on the Australian Great Barrier Reef suggests that the additional *stressors* are highly influential in determining recovery, especially as they favor the growth and expansion of macro-algal cover over the weakened corals¹⁸. On-going research by IUCN in the Maldives is raising concerns that these *stressors* may be leading to an ecological *tipping point* in some reefs adjacent to the more populated islands, especially with more frequent bleaching and *Crown of Thorns Starfish* (COTS) events.

Barriers that need to be addressed

The increment of the Project will seek to address three *Barriers* to effect change in the Maldives:

Barrier Description

Barrier 1. Ineffective local governance of natural resources and insufficient experience with sustainable alternatives to current livelihood practices

<p>The Maldives is a very old and distinct coastal culture with strong historical connections to its land and its seas. These historical connections have created unique understanding among its people of how to thrive in its dynamic physical environment of atolls, islands and reefs. However, history and a small population distributed over a large number of islands have also resulted in a cultural approach to resource use which has much similarity to the concept of “the commons”¹⁹. Mainstreaming of biodiversity, ecosystem services, natural capital and green economy already features in much of the legislative framework in the Maldives concerned with natural resources governance. However, there continue to be many impediments to its implementation, further aggravated by the recent growth in its population as well as the accelerated scale of economic growth in the Maldives. One of the most significant for the Maldives where two-thirds of its population live in widely separated small islands, is the strength of local natural resources governance. It offers little resilience to ex-situ or regional changes which place real limits to the sustainability of the resources of the <i>commons</i>. These commons resources such as groundwater, lagoon and reef areas, access to fish and to land for agriculture have all traditionally been regarded as open access, where issues of conflict are addressed through negotiation, often mediated by elder respected members of the community. This situation is now under great stress as expansion in demand for each of these resources, driven by demand from the tourism and fisheries industries, and expansion of the built environment on the islands through building construction, is creating serious environmental problems with which the regulatory framework is unable to cope. In addition, governance in the Maldives has historically been driven from the top, with an educated, professional civil service seeking to regulate a small but widely dispersed population, where difficulties in transport and communication make regular government interventions in local communities very difficult. Article 151 of the Decentralization Act, prescribes that Atoll and Island Councils have the power to formulate regulations and to make productive use on matters which fall within their jurisdiction, including rules governing use of the reefs, lagoons and other natural resources within the island boundaries. While on paper the Decentralization Act provides for effective local governance, the implementation of the Act has not been effective. The formal authority and resources continue to be retained by the national ministries that argue that there is not yet institutional capacity for local government to take on their responsibilities under the Act. Those powers retained in the central government are continuing to result in decisions that result in the expansion of international tourism in the national interest; in the implementation of infrastructure and in the way fisheries are managed in conjunction with the private sector. Tensions with local communities are reported but the existence of open access to fisheries and lagoons and reefs outside the defined areas of jurisdiction of islands, removes many practical civil society options to deal with these drivers of change, impacts to reefs and fisheries or e.g. potable water resources on the islands. The situation is further exacerbated by the fact that distance and lack of resources means that professional and government assistance, advice and enforcement on behalf of local communities isn't easily and regularly available. As a result, many island communities remain strongly traditional, relatively isolated and under-represented in political decision making, and absent in discussions on how to regulate resource use and development. One result of this is that there is little public participation or pressure to support effective regulation and oversight of tourism, construction and other sectors affecting the marine natural capital such as reefs. For example, although an Environmental Impact Assessment (EIA) process exists in the country, there is little institutional capacity to enforce regulations and consequently construction and dredging operators continue to produce large amounts of sediment run-off into lagoon ecosystems. The lack of legislation to regulate and protect groundwater means that groundwater on all inhabited islands is now suffering saltwater intrusion due to over extraction, as well as contamination by nutrient enrichment from domestic sewage and agricultural chemicals. Effective implementation of such regulations and processes is constrained by the lack of support from local communities for more structured and effective regulatory processes. This lack of support is due in great part to lack of awareness of environmental impacts (incl. land-based impacts on coastal and marine ecosystems), poor understanding of sustainable alternatives to resource utilization (especially in</p>
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fisheries / agriculture), and lack of experience with or understanding of participatory planning, governance for local Green Growth, and monitoring tools and options.

Barrier 2. The widespread poor understanding of how Maldivian society is dependent on Natural Capital (NC) and the options available to sustainably use Biodiversity (BD) to improve livelihoods

The Maldives has been transformed in a few decades from a developing country to a middle income country, to a large extent through the growth of international tourism. However, the benefits of this rapid economic change have not been equally distributed and there is wide disparity throughout the country in terms of affluence and opportunity. This disparity feeds conservative views which have prevented many people from understanding the need for change as the pressure on their environment and their traditional access to resources has changed. Notwithstanding the dominantly marine environment setting of the Maldives, little understanding is found in the population with regards the strong dependency on marine natural capital, including biodiversity for improving their livelihoods as well as for a sustained economic development path. Whereas much of the population would like continue to live as they have historically, the rapid growth in the population and in tourism visitation along with other environmental stressors make this impossible, and a large section of the population remains unaware of this and poorly equipped in terms of necessary new knowledge to adapt. This issue is recognized by the government in Male, which understands that a dual level society is emerging of those who can avail themselves of new opportunities – in including through Green Economic Growth, and those who are falling further behind as they continue to rely on now unsustainable resource use practices. At the same time, environmental issues continue to be perceived by many in government, industry and the general population as a constraint on economic growth, rather than as an opportunity to improve competitiveness and sustainability²⁰, due in part to the lack of practical examples of ways in which sustainable resource uses and environmentally responsive development designs can deliver economic outcomes that are sustainable; as well as part due to not realizing the marine natural capital values, dependencies and opportunities.

Barrier 3. Limited integration and capacity of NC and BD values in national legislation and policies, or in the operations of economic sectors dependent on natural resources

Despite the existence of a national government structure and agencies with a mandate and an appropriate legislative base, the level of governance of natural resources – specifically reefs and marine natural capital is still very poor simply because of the challenge of implementation. Supervision by national regulators is not occurring because of budget and logistics challenges that are not being met. Local regulations remain confused by issues of mandate between national and local government, by a lack of professional capacity in the local government and by unresolved issues around common resources in the lagoons and reefs and in relation to groundwater. This situation is perpetuated because the Maldives Economy is so dominated by the two sectors of tourism and fisheries that these ministries do not engage in practical activities which absorb the objectives of other sectors. The situation is serious and will require strong and consistent engagement, possibly driven by the private sector and civil society in order to bring about change. These governance factors impact on the mainstreaming of biodiversity into government policies across the sectors and also prevent progress being made on the incorporation of Natural Capital into national budgets and resource accounting and allocation. In addition, there is almost no experience among resource managers or the private sector in the Maldives of practical approaches to accounting for Natural Capital that would allow values and NC dependencies/investment risks to be assessed and incorporated into sustainable business planning, NC-responsive corporate budgeting and investments, as well as other opportunities such as sustainability reporting. An additional barrier to change and incorporating NC objectives in sector operations is the inadequate engagement of the ‘environment’ sector with key industry market players such as the Maldives Tourism Institute (MATI) dealing with tourism and the Maldives Construction Institute (CATI) dealing with construction. The increment will be closely concerned with this process, informing and incentivizing these peak bodies with a view to developing national guidelines for green growth, protection of reefs and other marine NC, and aspects of e.g. spatial planning.

The mainstreaming of biodiversity is a sophisticated concept, poorly understood in practical terms, including in the Maldives. One possible mechanism to enable BD and NC mainstreaming is based on NC-valuation to support better planning and decision making, based on economics, sector dependencies as well as sector impacts to e.g. reef resources. The Maldives has struggled for some years to apply its existing strategies for sustainable economic growth to the spatial distribution of environmental opportunities and constraint, including to properly implement the Tourism Master Plan as well as the Maldives Fisheries Master Plan. The Maldives does not have a national comprehensive system of spatial planning. A national GIS curated by the Ministry of Housing and Urban Development contains a significant number of thematic layers, but the absence of a national geodetic datum means that even the most detailed of the island plans cannot be used definitively for precise scalar manipulation. Additionally, the Ministry of Planning and National Development has recently been absorbed into several other ministries. Planning in itself rests with the Ministry of Finance while its concerns with national statistics are now handled separately in the National Bureau of Statistics. A Land GIS is within the Ministry of Housing and Construction. Major development decisions are now in the Economic and Youth Council by a council of ministers.

The result is that there is now a series of sector master plans (such as the Tourism Master Plan 2013-2017) nested under the National Development Plan, but without an integrating spatial tool to provide the multi-sector data, including those based on the values, benefits and dependencies on marine NC, necessary to help resolve spatial use and investment conflicts. This gap creates particular difficulties for the environmentally sustainable spatial allocation of resources. As the number of islands hosting tourist resorts growth, or the pressure by reef (demersal) fisheries increases, the issue of space allocation is a source of growing social tension, as is equally the case in managing conservation of protected areas, protecting environmentally sensitive areas (e.g. grouper aggregation sites), or areas optimal for economic development.

1.2 The baseline scenario or any associated baseline projects

Because of rather limited Government budget resources available for marine environmental protection, projects from international donor partners constitute the great part of current baseline spending that addresses the impacts of development on reef protection, resilience and ecosystem recovery in the Maldives, including the Laamu Atoll. One of the most significant programs is the UNDP Low Emission Climate Resilient Development Project (LECReD). With a budget of USD 9 million, this project is working in the Laamu Atoll until at least 2019 to enhance capacities at the national and local levels to support low carbon life-styles, facilitate the work of islands and communities on climate change adaptation, and strengthen disaster risk reduction measures. The project is chiefly targeting terrestrial ecosystems and resources, and will soon carry out a survey and cadastral mapping of all terrestrial natural, infrastructure and other physical resources, as well as the establishment of waste management facilities in all of the inhabited islands of the Laamu Atoll, all of which provides an excellent baseline for the proposed GEF project to build upon. To date, the project has achieved a considerable amount in terms of Atoll and Island Council engagement and capacity in planning and community engagement in participatory decision making – all of which also constitutes valuable baseline for the proposed project. The proposed Project will provide increment to the LECReD by adding practical activities at the Atoll and Island level geared specifically towards reducing negative impacts on reef and other marine Natural Capital (including impacts from terrestrial areas covered by LECReD), sustaining the local economy and its potential for growth, including building communities and sector capacities to assess the impacts and to explore eco-friendly options for remediation. Additionally, the GoM is very serious about waste management on the islands, and funds various related projects with an annual budget of above USD 6.5 million, including to the work in Laamu Atoll.

Another important baseline projects is the USAID-funded REGENERATE Project being implemented by the government with support by the IUCN Marine Programme, which has a total investment value of USD 9 million for Phase I (started in 2013) and Phase II (2015-2019). This many faceted project has a primary focus on the Baa Atoll where it is setting up institutional structures for the management of a Biosphere Reserve model within the Atoll, and for bottom-up management practices of a Marine Managed Area (MMA) in partnership with communities and tourism operators. Additionally, under the supervision by the Ministry of Environment and Energy (MEE), it has completed natural resource mapping and valuation in Ari Atoll, leading to the recent publication of the report on Resource Dependence and Social Resilience in North Ari Atoll, which constitutes an excellent methodological basis for the Natural Capital valuation and accounting under Components 1 and 3 of the proposed GEF project. The MEE will soon sign a contract with UN Environment to build capacity and facilitate adoption of the UN SEEA 2012 methodology in collaboration with the National Bureau of Statistics (NBS) – which holds the mandate for national accounts (all sectors). The System of Environmental-Economic Accounting (SEEA) has emerged as a leading tool in the support of policy and analysis of the environment and its relation with economic and human activities. Its particular strength is its capacity to integrate environmental information into standard measures of economic activity, and the related national accounts and monitoring systems. It can therefore facilitate the mainstreaming of environmental information in economic development and planning discussions and serve to recognise the connections between environmental policy objectives and broader societal outcomes. NBS is very interested in expanding the national accounts using SEEA for a more representative system of wealth accounting incorporating the key natural capital flows and values of the Maldives; and in fact are already trying to initiate environmental accounting using other platforms such as provided by UNFPA and UNESCAP. The NBS has an ongoing component with the LECReD project for Laamu atoll on accounting, which constitutes another institutional and methodological basis for the proposed GEF-funded work. The completed GEF- funded project ‘Atoll Ecosystem Conservation Project’ conducted extensive mapping and valuation work on Baa Atoll – including publishing the excellent report ‘Valuing Biodiversity - The economic case for biodiversity conservation in the Maldives’ (L. Emerton, 2009), which provides additional practice and a methodological basis to feed into the use of the SEEA methods.

TEEB (The Economics of Ecosystem Services) led by UN Environment since 2008, has extensive technical expertise, access to an international network of specialized agencies and experts, as well as the methodological basis and tools available to support the successful introduction and development of NC accounting in the Maldives. One of the key NCA programs of TEEB has been the recently completed project Advancing Natural Capital Accounting (ANCA), implemented with the United Nations Statistical Division (UNSD), the UN Environment - TEEB Office in Geneva, as well as the Secretariat of the Convention on Biological Diversity. The ANCA project has generated a very useful and applicable series of guidelines, tools and methodology – based on SEEA for use by countries (see e.g. <http://www.teebweb.org/areas-of-work/advancing-natural-capital-accounting/>). It is suggested that UN Environment through the TEEB program and its staff capacity will provide technical support to the Government of Maldives on the GEF project, which will be further specified and decided during the PPG. Under the new GEF project, MoEE would collaborate with NBS on applying the SEEA and building upon this pending the specific government monitoring, policy and development needs, sectoral interests as well as key targeted natural capital and services involved. It has been confirmed by MEE that the new Natural Capital Accounts – to be developed, maintained and reported on by MEE, would be linked with the central national (economics) accounts; which would be an essential step to feed NC aspects in government programming, budgeting and monitoring.

In addition, the MEE is providing approximately USD 120,000 annually in support of biodiversity surveys and protection work under the REGENERATE project. These upcoming investments, as well as experience of the REGENERATE project and its transference to national institutions, are an important baseline to the proposed project in the Laamu Atoll, and it is expected that the two projects will share resources and information in relation to the management and amelioration of human impacts on the

coral reefs of Laamu Atoll. Because the proposed project will work to establish an IUCN Category VI Protected Area in the Laamu Atoll, it will learn from and be coordinate with the coral reef management activities being undertaken in the Baa Atoll by IUCN so as to provide a greater understanding to the nation of how to achieve sustainability over the human-biodiversity interface.

The Green Climate Fund has approved a USD25 million grant for the project Support for Vulnerable Communities in the Maldives to Manage Climate Change-Induced Water Shortages to provide safe and secure freshwater to the outer islands through integrated water supply systems, decentralized dry season water supplies, and improvements to groundwater quality. The GCF project will provide the baseline investments to the Project's work on enhancing water efficiencies as well as reducing ground water pollution under Comp 1.2. A World Bank funded Climate Change Adaptation Project – CCAP (USD4.3 million through 2018) is investing in wetland conservation, coral reef monitoring, solid waste management, and mainstreaming of climate change in island development planning for Hithadhoo and Fuvahmulah Atolls. Although not specifically investing in Laamu Atoll, this project's work on environmental education and communication; strengthening of the national Coral Reef Monitoring Framework for improved decision making and management of coral reefs; and support for local eco-friendly livelihood activities constitutes baseline funding for the proposed project, which will build upon the CCAP and establish incremental support to the GoM through linking into the national reef monitoring network being established and enabling its implementation for the MMA in Laamu; incorporating NC considerations and objectives into the national education (curriculum) and social marketing campaign; and expanding the range of eco-friendly livelihood activities specifically with reef conservation as an objective.

In the baseline, the potential for successful adoption of the project approach and outputs by national government as well as Atoll Councils is enhanced by the recent incorporation of 'planning' into the Office of the President – encompassing all sectors, as well as the placement of the NBS under MEE, also responsible for statistics on all sectors, as well as the realisation by the government that its planning processes needs to be strengthened, better applied at operational and budgeting levels, and express the country's great dependency on coastal and marine natural capital for a sustained and blue economic development path.

1.3 The proposed alternative scenario, GEF focal area strategies, with a brief description of expected outcomes and components of the project

The Project proposes a practical agenda of change in the Maldives towards national adoption of Green Growth atoll development, aiming at maintaining its marine natural capital as well as specifically strengthening the resilience and recovery of reefs²¹, that is built around lessons to be learnt from testing of atoll-wide integrated coastal zone management, introduction of innovative eco-design²² applied to food production – agriculture and fisheries, as well as the use and management of water as the basis for transforming the ecological footprints²³ on three populated islands (Gan, Kalhaidoo and Gaadhoo²⁴) in the Laamu Atoll, and taking this to national level through sector transformation, spatial planning as well as new governance and planning based on Natural Capital Accounting.

Summary: The intermediate objective of the transformation is to minimize the flows of pollutants from land based activities into the adjacent marine environment, as well as to reduce marine-based drivers of reef degradation including grouper fisheries. This will be achieved by facilitating a participatory planning and co-management process, introducing innovative and incentive-based conservation management mechanisms, culminating in the establishment of a Marine Management Area (MMA) in one Atoll, by the introduction of eco-technologies and agreeing on green growth options with island communities as well as three targeted industry sectors, which will lead to reducing the flows and drivers of reef degradation through maximizing efficient use of limited resources, specifically land and ground water²⁵, as well as ensuring that the quality of the water is improved through the removal of pollutants. This requires a change against the business as usual scenario practiced in the Atolls, by emphasizing the (i) values and dependencies for local economic development, (ii) the need for protection, (iii) the enhanced spatial allocation as well as (iii) testing and adopting new decentralized governance of reefs and other key marine natural capital. These processes would be enabled by the project through both capacity building and social organization, as well as investments in alternative green growth options, based initially upon an Atoll-wide valuation of natural capital in order to generate local (and national) support for reef and NC conservation, both with public, CSO and private sectors.

The project would enable the establishment of three Natural Capital Accounts, one is suggested for 'Freshwater Resources', given their key strategic importance for local economic development – including urban/tourism development, horticulture, fisheries industries, as well as maintaining healthy reefs in the inner-Atoll waters (pollution control), one account on 'Marine and Coastal Resources and Biodiversity' encompassing the type, extend and flows of the various ecosystems, including their biodiversity. A third account will be decided upon during the PPG and could involve a NC Account specific for 'Ecosystem Services' in Laamu Atoll, including provisioning services such as fish and other reef resources – important in support of the national Tuna fisheries, or supporting services such as genetic resources (biodiversity), coastal protection or recreational services – key to Laamu green growth of the tourism sector, stable islands and healthy communities. The accounts will be based on the UN SEEA 2012 – Experimental Ecosystem Accounting (SEEA – EEA) methodology and to be expanded and made locally specific based on e.g. the guidance by TEEB program and staff, as well as the prior experience and available methodological tools under the 'Advancing the SEEA Experimental Ecosystem Accounting project'. These accounts – to be

managed by MEE, will be linked to and constitute an extension of the System of National Accounts, held by the national Bureau of Statistics (NBS). To enable a thorough partnership as basis for both full access to various existing government data systems, the design of the NC Accounts, as well as reaching consensus on methodology, capacity building needs and sustained funding, the project will support the establishment of a National Committee on NCA, chaired by the Minister of Environment and Energy, and which will report to the Office of the President. Suggested government members include NBS, Min of Finance and Treasury, Min of Fisheries, Min of Tourism, MEE/ NBS, and MoFA.

The transformation towards a green growth resilient island model is proposed as the primary instrument to conserve the marine biodiversity through the removal of controllable *stressors*. Lessons learnt from the demonstration of Green Growth and natural capital valuation through the establishment of NC Accounts for Laamu Atoll and three islands (Component 1) will be linked, in Component 2, to other means of national communications and formal capacity building, to develop greater awareness, throughout Maldives civil society on the dependencies to livelihoods and sustainable development of the values of reefs and other natural capital; and options how this can be used more sustainably to benefit people. The experience gained regarding Green Growth in Laamu Atoll (Component 1), supported through the building of national capacity, awareness and knowledge on the importance of Green Growth based on its marine natural capital through Component 2, will contribute momentum to the national-level mainstreaming under Component 3, of natural capital accounting in policy, plans and budgets of government as well as the operations of selected corporate sectors, and brought together in a new national spatial planning mechanism incorporating options for NC-based sustainable development that resolves conflicting objectives among the key economic sectors or sets guidelines as to how impacts on natural capital can be reduced to sustainable levels. The three Natural Capital Accounts enabled by the project, once completed will show how the marine and coastal natural resources – at an Atoll-wide assessment, valuation and planning scale, contribute to the local and national economy of the Maldives, and how the various targeted economic sectors affect and/or depend on these marine and coastal resources. The process of Natural Capital Accounting in Maldives will be introduced in a phased step-wise approach, where the methodology, tools and NC Accounts established specific for Laamu Atoll – focusing on a restricted number of NC and their services such as reefs, freshwater resources, fisheries and coastal protection, would be gradually expanded upon, as well as be scaled up nationally, or replicated to other key Atolls.

Component 1: Green growth development for Laamu Atoll in the tourism, food and construction sectors: Under Outcome 1.1 towards ‘increasing the area of sustainably managed reefs and other natural capital’, the incremental support through the project will lead to the adoption of a decentralised Green Growth policy for Laamu Atoll, which will be strongly based on Integrated Coastal Zone Management (ICZM) principles and practises as well as the incorporation of natural capital accounting by national and local governments as well as three economic sectors active in Laamu Atoll, towards the establishment and enhanced spatial resource allocation of a new Marine Management Area (MMA) of approx. 100,000 hectares. Deviating from the baseline, inclusive and incentive-based co-management governance mechanism will be adopted, starting with a multi-stakeholder approach to planning and decision-making, as well as the modification of land-based production processes and adoption of sustainable reef fisheries to significantly enhance reef resilience and reduce drivers of impact. Stakeholder workshops involving national sector agencies, major industry partners, communities and civil society organizations, including representatives of the Atoll and three Island Councils will be conducted to build support and capacity for natural capital accounting (part of 3.1.1.), as well as the adoption of a *Green Growth policy* for Laamu Atoll, incorporating natural capital accounting and targets, as well as options for enhancing the resilience of reefs and reduction in impact drivers from both land-based as well as marine-based processes for an area of at least 100,000 hectares.

Based on the NCA/SEEA Roadmap to be established under Component 3, including the methodology, as well as the institutional capacity built, the project will enable the establishment and application of three NC Accounts for Laamu Atoll – one for ‘Freshwater Resources’, one account on ‘Marine and Coastal Resources and Biodiversity’ encompassing the type, extend and flows of the various ecosystems, including their biodiversity, and the third account possible on marine and coastal ‘Ecosystem Services’ – to be confirmed during the PPG. The data sets, the valuation and scenario analysis of various development options for Laamu, would feed into the formulation of the Green Growth Policy for Laamu, the determination of boundaries, zones and management options for the Marine Management Area (MMA) as well as generate important findings, recommendations and targets to feed into the Sustainable Development and Investment Plans to guide the government and sector agencies towards more sustainable and NC-beneficial investments and programs in Laamu Atoll. As indicated above the methodology to be adopted would be based on the SEEA-EEA, modified to the specific Maldives and Atoll situation, facilitated and technically supported by the UN Environment TEEB team as well as other specialized agencies to be identified during the PPG, and implemented by the MEE and their NBS on the statistics, indicators, analysis and reporting.

Field Schools for community-led planning to sustain biodiversity and natural capital will train locally identified Facilitators who will work interactively with three island communities to enhance understanding of the principles of ICZM, introducing concepts like “soft-engineering” and “eco-design” for both coastal infrastructure as well selected production sectors like horticulture or fisheries, to reduce impacts to sensitive marine habitats from sedimentation and nutrient pooling; as well as create willingness to adopt and to develop local plans for implementation of the new technology solutions. The schools will also be used as consultative platform to introduce and design options for atoll and reef conservation based on the Green Growth policy, fitting the local spectrum of stakeholder interests, culminating in the design of a new MMA including the most optimum governance,

cost-recovery/financing and enforcement mechanisms, based on the consensus, feasibility assessment, and experiences established through the project specific to the Maldives situation.

The Green Growth policy, new NC Accounts as well as the establishment of the MMA, will enable replication in other atolls (as a model approach) and facilitate the necessary national and local support towards enhanced reef and NC conservation. Under Outcome 1.1 this is targeted to result in 100,000 ha of reefs included in sustainable development plans/MMA, of which 20,000 ha would directly benefit from project investments under Outcome 1.2 (stress reduction) as well through the integration of NC values and accounting into the operations by the private sector under Outcome 3.2. Additionally, it will target an increase with 7% over LOP in NC-based government budgets made available for Laamu Atoll, specifically related to implementing the MMA. With the necessary capacity, stakeholder organization and NC Accounts (scenarios) information at hand, the project will support the development of Spatial and Sustainable Development and Investment plans for the entire Laamu Atoll, and more detailed plans for the three inhabited islands to be decided on during the PPG, suggested e.g. Gan, Kalhaidoo and Gaadhoo. The plans will allocate the land and sea use for fisheries, agriculture and protected zones, including reef areas dedicated for sustainable use (fisheries, tourism), restoration (e.g. due to impacts coral bleaching) or conservation. The project will also be able to organize and empower three islands communities, of which at least 35% women and 20% youth, to participate in the planning, decision making and co-management on the planned MMA, through applying Integrated Coastal Zone Management principles targeting the reduction in key stress factors such as destructive fishing and surface water pollution affecting the reefs.

Under Outcome 1.2 towards 'reduction in stressors impacting Laamu Atoll reefs' various incentive-based green growth approaches will be introduced through direct project interventions and (co-funded) investments. As part of the implementation of the Spatial and Sustainable Development and Investment plans, alternative eco-technologies for sustainable food production and enhanced collection & disposal of domestic waste and sewage will be demonstrated on the three target islands, ensuring island-wide uptake by the end of the project. These demonstrations will be focused on alternative agricultural approaches that are water efficient (20% reduction in water use) and ensuring that levels of organic and inorganic pollution is reduced with 30%, through close partnership with the e.g. the UNDP GCF baseline project. Adoption of these practices will be led by the Island Councils and will need to be accepted through local ordinance by all participating households to be effective.

The project will also focus on 100 fisher households and work closely with the Ministry of Fisheries and Agriculture to facilitate change in fishing practices especially towards the bait fish and the demersal reef fish according to the recommendations in the evolving Maldives Fisheries Management Master Plan (incl. safeguarding fish spawning and aggregation sites). A partnership between the Ministry of Tourism and the Maldives Tourism Institute will be established on best environmental practice in the sector, leading the formulation of formal guideline for optimizing sustainable management and development of tourism in Laamu Atoll, specifically related to reducing potential impacts to reefs and other marine natural capital. Apart from the construction of tourism infrastructure, the construction sector is engaged in considerable efforts in the islands in the south east of the Atoll in erosion defense. The project targets having at least one new resort working with Laamu Atoll council on protecting marine resources; and having at least two construction firms adopt sustainable building practises in Laamu Atoll. The implication of this work is while shorelines may suffer reduced erosion, these impervious shorelines may have unpredicted flow-on affects elsewhere on that island, or on adjacent islands and reefs. Guidelines for planning and implementation of shoreline modifications will be developed in order to ensure that decisions are taken that are recognizing coastal hydrology patters and avoiding previously unexpected environmental impacts. The construction of the airport at Kalhaidoo is expected to result in potential impacts from island surface hardening and changes to sedimentation that will provide further opportunities for the Project to engage positively with the construction sector to develop methodologies with reduced impact on the marine environment within the proposed MMA. Given the WB-CCAP and the IUCN led REGENERATE projects already developed and applying reef health survey and monitoring tools, this new EndhERi project will refrain from replicating reef monitoring, yet build upon the systems towards environmental quality and green growth monitoring in collaboration with the Marine Research Center of the Ministry of Environment and Energy (MEE) and its EPA, to observe progressive bio-physical change in ground water levels and water quality, nutrient levels and other toxic pollutants including hydrocarbons in the adjacent lagoon; but also related to social change in terms of the extent of adoption and commitment to new eco-friendly livelihood options; relationship development with other stakeholders including entrepreneurship, and market development. This may culminate in regular reporting by Laamu Atoll Council of Green Growth and ICZM practices featuring biodiversity and natural capital preservation and synthesis of lessons learnt for Laamu.

Component 2: Building the social capital²⁶ supportive of a national economy based on sustainable use of island and reef biodiversity and natural capital:

through activities under its targeted Outcome 2.1 'People in Laamu and the national population understand the values and dependencies on marine natural capital and biodiversity to their livelihoods and sustainable development', the project will collaborate with the Maldives National University (MNU) through its largest campus situated on Gan Island towards establishing the fully co-funded National Biodiversity Knowledge and Outreach Centre. In the baseline, communication networks in Maldives are sufficiently strongly established that they can be used as the core medium for reaching across the archipelago to stakeholders in all communities but miss the key messages and an agreed communications strategy related to the need and benefits for Green Growth and natural capital (accounting). The University has indicated that it will expand in Laamu to provide a specialist focus on Agriculture and Fisheries. The MNU propose that the facility will operate as a living record of the biodiversity of the country, tracking its fauna and flora over space and time and

servicing an important educational role through public exhibitions and outreach. The facility will also act as scientific center for biodiversity and environmental management and collate knowledge about biodiversity at threat from environmental change, including economic development; undertake targeted biodiversity inventories to determine key species distributions, identify and publicize biodiversity hotspots and identify species at risk. The Project incremental support under Output 2.1.1 will enable the proposed facility to support, sustain and expand education services and social marketing/outreach – specifically regarding methodologies and programs applying Natural Capital Accounting (e.g. SEEA-EEA such as adopted by WAVES and TEEB), Green Growth and eco-design options, based on experiences (including those of the project Component 1) that reduce pressures on marine ecosystems and promote sustainability nationally, as well as specific for the three targeted sectors. Additionally, through project support, the Center will run initiatives in citizen science, including to encourage community-based monitoring and reporting of biodiversity change (Comp 1), as well as will provide and administer small grant assistance designed to empower local people and encourage the accumulation of scientific and traditional knowledge. The ultimate purpose of this Component is to build understanding across the nation of the (sustainable) resource use changes that will be required and eco-technologies which are available to the Maldives to grow their economy on their most important natural resource – the natural capital of their marine ecosystems (*Barrier 2*). The focus for the community behavior change will be a Social Marketing and Outreach Plan to be developed and implemented by the MNU with international technical assistance provided by the project. The plan will be multi-sectoral and developed with the participation and agreement of all key national and local government agencies and the targeted private sector, specifically tourism, fisheries and agriculture and construction. The process of development of this plan will commence the mainstreaming of biodiversity and marine NC concerns in society and will serve as a relationship building exercise, ensuring ownership of the plan and a commitment to its implementation. To this end the Plan will identify functions for all government and non-government stakeholders who will use it in programming communication with their own stakeholder networks. Further under Output 2.1.2, the project will provide the increment to enable incorporation of marine biodiversity and the principles, values and approaches to protect natural capital for sustainable development and community welfare into school curricula, and ensure it also features in the teacher training and the curricula of fisheries and agricultural courses that are already and will continue to be provided by MNU (these tertiary-level courses would advance skills on the basics of NC accounting, policy development and capacity building). The project will expand upon the MNU curriculum development undertaken by DFID through GEF support for compiling existing knowledge related to the methodologies and values of marine biodiversity and other natural capital. Studies of natural capital of the Maldives reef systems is on-going in the MNU and the translation of the results of this work as well as expanding the methodological basis into educational curricula will be a substantial increment offered by the Project.

Component 3: Mainstreaming marine Natural Capital and Biodiversity values in the policies and regulatory frameworks of the food (fisheries and agriculture), tourism and construction sectors through natural capital accounting:

The purpose of this Component – involving all three Outcomes 3.1, 3.2 and 3.3, is to address the methodological, political and social *Barrier* that exists to enabling biodiversity and marine natural capital mainstreaming in government and private industry development and finance planning. The two largest sectors in the Maldives are Tourism and Fisheries and both these Ministries retain significant political and economic influence, yet rarely collaborate nor engage with other sectors – e.g. construction. As a result, the Project will need to engage with the Tourism, Fisheries and Construction sectors in government and in industry to attain its targeted objectives and impacts related to adopting natural capital accounting (including though budgets and spatial planning), green growth strategies/business plans and sustainability reporting.

The key approach of Component 3 is to enable the Government of Maldives to adopt the SEEA-EEA methodology to the benefit of mainstreaming coastal and marine natural capital, including biodiversity in government policy, budgets and sector programs. To this end, the project will follow an incremental stepwise process, going from adapting, capacity building, and the application of the SEEA-EEA methodology to Atoll-level development of a Green Growth Policy, establishment of the three NC Accounts (1.1.2), as well as integration of various development scenario analysis into the planned MMA and its related Sustainable Development and Investment Plans. In the baseline some assessment of biodiversity natural capital has been undertaken through the MNU with assistance from other donors.

As incremental activities under Outcome 3.1 ‘Increased institutional capacity, clarified mandates and integration of NC Accounting in government policy and programs on marine biodiversity conservation’, the Project will support Atoll-wide assessment, valuation and mainstreaming of marine and coastal NC into government development planning, finance and policy (modifications). The project through public sector partnership, will facilitate working partnerships with the *peak* tourism, food and construction industry bodies; the Maldives Association of Tourism (MATI) and the Maldives Association of Construction Industries (MACI) have been suggested so far. The Project will support workshops and technical training in the use of SEEA-based Natural Capital Accounting tool applied to the range of sectors, using expert consultant input from local and international sources. The objective will be to enhance capability in the country to prepare reform/modify at least two national government Sector Plans such as the 2013-2017 *Tourism Master Plan* and to prepare the way for a 2021-2025 National Development Plan which reflects national accounts and offsets that promote biodiversity conservation and incorporates marine natural capital objectives. Under Output 3.1.1, the project will enable the MEE to build institutional capacity through international training, peer support and technical workshops, forge national and Laamu Atoll partnership, and expand the national accounts with the National Bureau of Statistics based on Natural Capital Accounting, based on the SEEA-EEA methodology. To do this

effectively and targeted, a National Roadmap for SEEA-EEA will be agreed, clarifying mandates as well as on how NC accounting would contribute to national strategic goals, the specific SDGs as well as enable national development through environmentally resilient islands. It is suggested to request the UN Environment TEEB program to provide expertise and provide direct support to MEE on this process by building on the experience as well as technical guidebooks, software tools and training capacity established under the ‘Advancing the SEEA Experimental Ecosystem Accounting’ project, completed in 2015. As a first step TEEB could help developing a Quick Start Guide book on SEEA which would help the country to take the initial steps towards adoption of SEEA-EEA. Next, the NC Accounts, initially for Laamu Atoll, will be linked to the national accounts (GDP etc) held by the National Bureau of Statistics at MEE; which in its turn will enable the government to conduct development scenario analysis and NC-valuation (output 3.1.2), which will inform budgeting, needed fiscal measures and government sector policy modifications, by basing it increasingly on NC considerations. This is targeted to lead to a reduction in any NC & biodiversity harmful financial incentives, an increase in the number of fiscal measures and/or a 7% increase in budgets benefitting NC and biodiversity (Laamu) and at least one national government policy being modified or newly adopted based on the analysis outcomes of the NC-accounts.

Under Outcome 3.2, ‘Enhanced protection of reefs and marine NC through actions by food, tourism and construction sectors’ the project will enable the country to mainstream marine NC values and environmental services in corporate business plans, investments and operations. Building on the SEEA-based work conducted as part of Outputs 1.1.2 and 3.1.1 - towards setting the locally-appropriate methodology, national partnership, enhanced capacity and development of NC Accounts), the project will assess both the dependencies as well as the impacts/footprints of the national food, tourism and construction sectors to biodiversity and marine/coastal natural capital at a national scale, analysed on the existing as well as alternative development scenarios for the sectors, noting the adverse environmental implications and potential consequences of policy failures to their business models (3.2.1). Notwithstanding the excellent ‘baseline’ sustainability score cards of the international resorts in the Maldives, much incremental gain can be achieved by specifically targeting the many other types of resorts, tourism facilities as well as related construction sector. The Project will facilitate interactions between the faculties of the MNU and the tourism and construction peak bodies to develop in service training courses that introduce environmental best practice, options for green growth, sustainability reporting and related aspects not captured in any of the existing staff development training schemes.

The national assessment, scenario analysis and valuation - using the NC Accounts established under 1.1.2, underpinning the three sectors will also identify interdependencies especially between fisheries, tourism, and water services, and the assessment of their contribution to the SDG’s. Additionally it will review and guide on the role of gender in the sectors and how to best maximize positive outcomes on incorporating NC in the sectors through gender equality. An important next step will be to conduct national sector roundtables (also part of 3.2.1) to discuss and adopt the findings of these reviews. This latter process will help identify and agree on entry points and opportunities for mainstreaming NC values into at least four corporate business plans – benefitting reef resources over at least 20,000 ha as part of the MMA (Output 1.1.1), including adoption of sustainability reporting by at least two corporations. The sector round tables will consider potential to improve and strengthen the EIA procedures especially in the tourism and construction sectors, based on the information and cost/benefit analysis conducted in the Natural Capital Accounts as part of the scenario analysis for different development paths in these sectors. The PPG will determine the best ways to use/link the planned Natural Capital Accounts as a further tool to benefit existing government procedures, including e.g. for Strategic Environmental Assessments (SEA).

Under Outcome 3.3 “A spatial planning framework reinforces incorporation of NC accounting in existing national and sector development strategies likely to affect sustainable development in the food, tourism and construction sectors”, incremental project support will enable the government a much better national development planning and protection of marine natural capital assets through (i) addressing the lack of a comprehensive and formalized system of spatial planning in the Maldives and incorporating natural capital accounting principles and results, that (ii) brings together the various GIS and other already existing databases in the number of ministries, and (iii) benefitting from inter-Ministerial collaboration on the various planning related mandates housed with different government agencies. The project, at the request of the Minister of Environment and Energy, will introduce an integrating spatial planning framework to reinforce existing national and sector strategic development plans. In the baseline, the potential success of the strategy is enhanced by the recent incorporation of ‘planning’ into the Office of the President as well as the need to significantly strengthen the government planning process based on reef resources and other marine natural capital, given its very high dependency on these resources for a sustained and blue economic development path. The project will provide assistance to the MEE, in engaging the Office of the President to advise the Ministerial Council to facilitate cross-ministerial collaboration in relation to NC-based spatial planning in line with a national priority to conserve biodiversity within a country-wide biosphere reserve. This will be made possible by both (i) formalizing the national spatial planning framework and mandates (output 3.3.1) – including working with the National Natural Capital Accounting Technical Committee (3.1.1) to facilitate the integration of the right SEEA-based methodology in the spatial planning, as well as (ii) the use of the NC Accounts and its GIS, database and modeling/scenario analysis capacity situated with the MEE/NBS, towards the formulation, national review and consultation of the Draft national Spatial Plan for 2021-2030 (aligned with start of the 2021-2025 National Development Plan to be developed). A government Decree will be issued for the establishment of an *ad hoc* inter-Ministerial Spatial Planning Task Force of professionals to advice on the preparation of a NC-based spatial plan for the country, which will deliver the commitments for the 2030 Sustainable Development Agenda. It is noted that the MEE has

recently been mandated by the President to oversee the implementation of the SDG’s and their targets through the various sectors. However, it is also appropriate because of the Ministry’s responsibility to deliver objective criteria for the identification of biodiversity and other key natural capital sensitive/priority areas and key Protected Areas, including local Marine Managed Areas (MMA) in conjunction with local government and industry. The purpose of the technical Task Force will be to give voice to the objectives of each sector and to ensure the basis for inter-sectoral resolution to land and sea-scape conflicts of interest that can be captured in the spatial plan.

In the increment, the Project will facilitate the establishment of the NC-based spatial planning governance framework (3.3.1), as well as provide expert input on the transformation of the planning framework towards a blue economy which values sustainable flows of biodiversity, natural capital and their environmental services as the core to sustainability and improved livelihoods. The NC Accounts established and SEAA-EEA methodology adopted prior to that will constitute a key element towards building the spatial planning methodology, GIS and related databases. Given the project focusses its development, testing and use of the NC Accounts to (model) Laamu Atoll, the government and partners will provide the necessary co-funded expansion of the datasets to the national level, this to enable a full national coverage of the Draft Spatial Plan.

In addition to the common GIS platform used for this, and deviating from the commonly adopted government-only approach, the Project will enable a multi-stakeholder consultation and review approach to the spatial planning, involving civil society (including educational and religious organizations), representing a fair gender balance, government, NGOs as well as key industries. The project will enable the government to conduct outreach to the broader society and conduct consultations during the formulation of the spatial plan, benefitting from the communications and training provided under Component 2. The Project will also provide direct short and long term technical assistance to Maldives government and university professional staff assigned to the Spatial Planning Task Force, to build the professional capacity to inform the NC-based planning process, interpret data and capture it in predictive and scenario modelling, integrating sector master plans as well as marine natural capital assets and values. The planning process would also provide a platform for collation of local and traditional knowledge and ensures that community aspirations are accommodated – a basis for successful and sustained implementation of any spatial plan, development strategy or Green Growth policy at decentralized levels. The target set by the project is to have a 25% increase (LOP) in spatially delineated marine area for sustainable management and protection of reefs and other NC through sector development; to see full use and integration in the Draft Spatial Plan of the methodology and results of the NC Accounts, including on scenario analysis/valuation against various development options, as well as having at least 3 NC indicators showing improvements towards meeting related SDGs targets. The draft National Spatial Plan (3.3.2) will incorporate different scales of analysis as appropriate and *inter alia* determine priorities areas for the management of environmental impacts and threats to biodiversity, reefs and other marine natural capital, providing the basis for objective decisions concerned with the location of infrastructure development, demersal fisheries, tourism development etc. The Plan will ensure that environmentally sensitive areas, known biodiversity hotspots (incl. for migratory species like turtles, whales and sharks), as well as key areas sustaining marine production (e.g. grouper spawning/aggregation) are identified so that they can be taken into account in economic development planning by identifying whether design solutions or off-setting are management options.

Project alignment with the GEF Focal Areas: In order to address the barriers identified above, GEF support is requested from two GEF programs with which the project objectives are closely aligned. Program 6 (BD3) is concerned with maintaining the integrity and function of globally significant coral reef ecosystems. Considering that the Laamu Atoll Lagoon is to be a Marine Management Area (equivalent to IUCN Cat V) within the broader national objective of a national Biodiversity Reserve, the project will address direct and indirect impacts on coral reef ecosystems through practical technical and governance interventions that emphasize local rights based responsibilities and reduce pollution and exploitation of the fisheries and the coral reef structures. Through an approach of ICZM, the proposed project will reduce the impacts of human activities on the seascapes of the Maldives through activities in all three components: working locally in the Laamu Atoll by directly reducing impacts from agriculture, tourism and extractive activities and introducing new approaches to local governance and planning. Program 10 (BD4) is concerned with the integration of Biodiversity and Ecosystem Services into development and finance planning. Under Component 3, the proposed project aims to modify or establish new national (sector) policies, plans as well as increase budgets directed at supporting BD and NC through the implementation of Natural Capital Accounting (NCA) at the national as well as local level in Laamu. The target groups include government but also food/fisheries, tourism and construction industry associations. Multifactorial resource assessments taking into account BD and Ecosystem Services values will be incorporated in the production of strategic and spatial planning in order to institutionalize the NCA considerations in national policy, specifically related to the three targeted sectors. Additionally the project contributes to Program 10 through its incremental support to the development of NC- and Green Growth specific national awareness and education programs which will deepen understanding of the dependence of society on biodiversity and other marine natural capital, and through the building of capacity for strategic and spatial planning approaches that focus on the incorporation of natural capital into development decision making, especially in the food, tourism and construction sectors.

1.4 Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCE, SCCF, and co-financing

Project Component	Scenario Without GEF Project	Scenario With GEF Project
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1: Enhancing reef protection and ecosystem recovery at Laamu Atoll through planning and implementation of green growth development practices in the fisheries, agriculture and construction sectors.	Legislation exists to support reef protection but lack of resources prevents implementation. The USAID Funded REGENERATE Project is active in the Baa Atoll and has a generic interest in the reefs of the archipelago. Other Projects including CCAP support monitoring. However, there are no activities that seek to reduce human ecological footprints in ways that will promote coral reef protection and support green growth.	The Project addresses the human-reef interface and demonstrates how human activities can be modified to enhance reef protection and implement sustainable approaches to the three main economic sectors at the local level.
2: Building the social capital supportive of a national economy based on sustainable use of island and reef biodiversity and natural capital	There is no current national program to take on the core problems of lack of awareness and understanding and bottom up engagement in local and national planning for green development through the protection of BD and Natural Capital	The Project will provide supportive partnership to MNU facilities to develop the knowledge outreach, education and training media necessary to address issue related to sustainable use of island and reef biodiversity and natural capital, as identified in the Maldives NBSAP.
3: Mainstreaming marine Natural Capital and Biodiversity values in the policies and regulatory frameworks of the food (fisheries and agriculture), tourism and construction sectors	The GoM has identified the need to mainstream biodiversity which is a principle of its NBPSAP. Preservation of BD is also recognized in the Constitution. Each key economic sector has agreed to mainstream biodiversity within its Master Plans and also in the National Development Strategy. However a lack of resources and poor understanding of the practical ways this can be done are limiting progress.	The Project will build on the strong legislative framework by providing practical options for mainstreaming in government at all levels. It will demonstrate how community engagement and engagement of the private sector can be expanded through the provision of practical incentives. Tools related to Natural Capital Valuation will allow policies and budget revisions and incorporation of practical solutions in spatial plans affecting key economic sectors.

1.5 Global Environmental Benefits

The project is expected to generate the following types of global environmental benefits (GEB), and which will be re-assessed during the PPG based on baseline surveys and a decision regarding the exact working area (towards the MMA), confirmation of the targeted islands, as well as other bio-physical and project design aspects:

- a. Increasing the area of coral reefs in Laamu Atoll where conservation and sustainable use of biodiversity are integrated in practice
- b. The development of national sector policies and regulatory frameworks that incorporate natural capital and biodiversity considerations
- c. The integration of biodiversity and ecosystem service values and objectives into budgeting systems and internalized in three sectors' operations.

The Maldives is globally important because it contains the 7th largest and 5th most biodiverse coral reef system in the world, and its biogeographical position means that it supports critical source populations connecting the coral reefs of Asia and the Pacific with those of East Africa. As such the Maldives, including the selected Laamu Atoll, represents a key population of coral reefs at the global scale, further highlighted in importance given the generally good environmental condition (notwithstanding the fact that extensive bleaching has occurred now twice) of the coral reef ecosystems in the country.

Specifically the project has the following GEBs directly related to biodiversity:

- Inclusion of 100,000 hectares of biodiverse reef sites of global significance as source populations for reef recovery and protection, including through co-management under a MMA scheme; with 20,000 ha benefitting from direct project interventions (as part of three villages and three sector program interventions);
- Enhanced reef resilience, protection and recovery, including part of the estimated 250 species of hard corals found in the Maldives Atolls, representing over 57 genera, and conservation of habitat for 1,200 species of reef and reef-associated fish species;
- Better protection for internationally threatened populations of Green Turtle (*Chelonia mydas*, IUCN Red List Category EN) and Hawksbill Turtle (*Eretmochelys imbricata*, IUCN Red List Category CR); the Maldives is perhaps the most important feeding area for Hawksbill Turtles in the Indian Ocean;
- Enhanced incorporation of protection and sustainable tourism operation related to globally significant populations of Whale Shark (*Rhincodon typus*, IUCN Red List Category EN), Manta Ray (*Manta birostris*, IUCN Red List Category VU) and a diverse megafauna of over 20 species of whales and dolphins;
- Improved management and protection of spawning and fish aggregation sites of coral reef dependent grouper species, including the globally significant Napoleon Wrasse (*Cheilinus undulates*, IUCN Red List Category EN) and Giant Grouper (*Epinephelus lanceolatus*, IUCN Red List Category VU).

Cross-cutting environmental benefits: The Project is designed to deliver a combination of technology, policy and outreach interventions that will contribute to mainstreaming environmental sustainability objectives at island-Atoll and national levels. These will include: (1) Higher productivity in agriculture; (2) Increased resource use efficiency, particularly water; (3) Reduced use of agrochemicals; (4) Improved net profitability and (5) Reduced environmental footprint to specifically reefs and demersal reef fisheries. The project will lead to enhanced protection and sustainable management of the coral reef-atoll seascapes throughout the Maldives through an in-built design for scaling up from local experience to national change across its three components. Integration of the NC concept and approaches into business models, risk analyses and decision-making processes within government, private sector entities and financial institutions is expected to bring national and local governance into line with national and sector planning as outlined in the NBSAP.

1.6 Innovation, sustainability and potential for scaling up

Innovation: The proposed project is designed to integrate the three pillars of sustainable development: environment, social equity and economic opportunity, by applying innovative eco-design to island community resource management and livelihoods in order to reduce the impacts of terrestrial life on the marine environment. This approach constitutes an innovative program for the Maldives, recognizing that changes in resource use and management are urgent as levels of demand and exploitation for ecosystem services continue to increase rapidly. The project also takes a true multi-stakeholder approach introducing new participatory and co-management approaches, supported by Atoll and village councils, to enable community support and private sector involvement at several locations across a single Atoll. Through this mechanism the Project will bring reality and understanding to abstract concepts of *Natural Capital* and mainstreaming biodiversity by demonstrating through day-to-day activities how resources can be sustained by changes in the way people use water and land, dispose of domestic waste and engage in their lagoons and coral reefs. Working with partner projects, the Project will engage people in planning and regulating the use of space and resources, and in examining options for reducing impacts from tourism, fishing, horticulture and construction. Other innovations of the project for the Maldives include: i) facilitating the integration of the concepts of biodiversity, natural capital and ecosystem services in secondary and tertiary education curricula; ii) introduction and application of NC valuation and objectives as entry points for spatial planning, economic development support, and BD-responsive policies; iii) supporting establishment of green budgets and policies leading to better mainstreaming of BD in non-tourism operations; and iv) targeting reef conservation and resilience through public-private partnerships with new/non-traditional partners (e.g. construction, horticulture, sewage treatment).

Replication and Sustainability: Laamu is one of 18 Atolls which form second tier administrative government in the Maldives. Although atolls in the country differ in specific detail, their basic geomorphology and ecological patterns are similar, as are their settlement patterns and livelihoods opportunities. For this reason, changes to institutional and policy frameworks as well as lessons learned from interventions on Laamu Atoll will have strong application and potential for replication in other parts of the Maldives, and potential for up-scaling into national ministerial policies, spatial plans and practices. Replication of lessons learned will be facilitated by comparative visits and delegations among island communities through which new experiences can be shared. Furthermore, a great challenge for the national government in pushing decentralization is the level of understanding and professional competence at the local government level, and the proposed project, by focusing on households as the basic social unit within the islands and the atoll, provides the opportunity to build understanding and capacity from the bottom up which will assist the national government in developing programs on the atolls.

The design of the project specifically addresses sustainability through targeting changes in local government ordinances related to the planned established of a Marine Management Area, agreement on co-management mechanisms, and impact monitoring of green growth options in Component 1; through the use of knowledge, outreach and education processes in Component 2 to build nationwide and intergenerational support to maintaining marine biodiversity NC based on understanding of the importance of NC to the future of the Maldives; and in the institutionalization of the lessons learned in the Laamu Atoll into government policies, green budgeting and legislation in Component 3, as well as the NC-responsive activities of the private sector in the three predominant economic sectors. In addition, the project interventions in Laamu Atoll are expected to have measurable bio-physical advantages to the adjacent marine environment during the project life, but should also be sustained post-project at the local and national levels by establishing models and a learning environment that can enhance sustainability through national legislative and policy reform.

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

Stakeholder	Implementation Role
Ministry of Environment and Energy	The Ministry of Environment and Energy (MEE) deals with issues of biodiversity but also serves as an umbrella organisation for the Bureau of Meteorology, the Maldives Energy Authority, and water and sanitation. MEE hosts a number of important donor-supported projects within the broad environment sector, and will serve as the project’s national Executing Agency, including oversight at the Minister’s level in order to facilitate coordination among closely related and potentially synergistic projects.

Ministry of Tourism	This Ministry is a key and powerful government stakeholder as it regulates an industry worth over half of the direct and indirect national income. The ministry will be a close partner in the Project, and during the project preparation phase opportunities for cooperation, co-financing and facilitation of relationships with resorts will be pursued.
Ministry of Fisheries, Agriculture and Marine Resources	This Ministry is a critical partner of the proposed project because of its management of significant parts of the national economy. The ministry will play a critical role in the design and implementation of food production related activities under Component 1, which will require significant changes to the way agriculture and fisheries are managed, including the impacts of agriculture on the marine environment (e.g. expanding horticulture is using very large amounts of ground water).
Ministry of Housing	This Ministry is an important stakeholder as it regulates land and land ownership on the islands, and it will be a valuable technical partner for Component 1 towards introducing best practise in the construction sector, and Component 3 where the development of the GIS will be highly important.
Local Government Authority	The LGA is an organisation within the Ministry of Home Affairs, broadly responsible for the administration of the 2010 Decentralisation Law and the governance oversight and support of Atoll and Island Councils. The LGA will be an important partner in the Project in facilitating and guiding selection of demonstration sites, running decentralised and participatory governance of e.g. the proposed MMA, and guiding capacity building.
Maldives National University	The Maldives National University (MNU) was inaugurated in 2011 and operates across 4 campuses and 18 Learning Centers across the country. MNU will be a key partner in the Project especially in Component 2 related to the acquisition and dissemination of knowledge of biodiversity as well as the establishment of the National Biodiversity and Outreach Center. It is also expected that the University will ultimately house both the Marine Research Centre and the Environmental Research Centre; MNU will therefore contribute substantially in kind to the project and benefit from lessons learnt and capacity building, especially directed towards issues like natural resource accounting and biodiversity documentation and planning.
Maldives Linguistic Academy	This group consists of professionals and academics and has a mission of researching and understanding Maldives non-material heritage, including oral histories and traditional knowledge. The group will be collaborating on activities under Component 2 for building and disseminating knowledge of biodiversity and other natural capital.
Maldives Association for the Tourism Industry (MATI)	There are currently 115 tourist resorts in the Maldives (with a further 50 planned). The project will work with specific resorts in the demonstration sites, but MATI will be a key partner as well in developing industry-wide coordination and agreement on sustainable tourism activities that mainstreams biodiversity & NC, including promoting minimum standards and the exchange of information and experience in environmental management
Maldives Association for the Construction Industry (MACI)	The construction industry is a major employer and source of investment in the Maldives. Dredging and changes to island shapes through harbors and sea walls are a major threat to the marine biodiversity if done in a poorly designed and controlled manner. The Project will seek to develop close partnership with MACI in order to facilitate knowledge transfer, promote <i>soft engineering</i> solutions, and encourage best practices with respect to coastal planning, predictive of impacts and vulnerabilities.
Ministry of Law and Gender	This Ministry will be involved during the PPG in conducting gender sensitive stakeholder assessments, the design of participatory and governance platforms, and the monitoring of inclusive green growth activities of the project.
Laamu Atoll Council Island councils for L Gan, Kalhaidoo and Gaadhoo	The Atoll and Island Councils hold considerable authority on the basis of the Constitution and the 2010 Decentralization Act. Although resources and authorities are still largely retained in the National Government Ministries, the success of the Project will depend on guidance and commitment from local communities, and therefore the project will make early contact with the local government councils in order to increase understanding and buy-in from directly affected populations.
Civil society and local communities	The Project will include the participation of a wide range of stakeholders in civil society. During the project development phase, a gender sensitive stakeholder analysis and public participatory processes will be completed to establish selection criteria for the identification of target demonstration villages. Community Facilitators will be selected from target islands and trained to become key staff supporting implementation of Component 1.

3. Gender Equality and Women's Empowerment. Are issues on [gender equality](#) and women's empowerment taken into account? (yes /no). If yes, briefly describe how it will be mainstreamed into project preparation (e.g. gender analysis), taking into account the differences, needs, roles and priorities of women and men.

In August 2016, the Maldives passed a new Gender Equality Act with the objective of eliminating discrimination between genders, and established the roles of government agencies – notably the Ministry of Law and Gender – in implementation of the law. Nevertheless, although formally the Maldives demonstrates remarkable progress towards gender equality, much remains to be done. The social organization of the Maldives has evolved over a long time under the influence of complex ethnic origins; but united in a common dependence on seabound travel, trade and sourcing of food. Although cultural determinants of gender roles continue to be powerful in the country, constitutional equality, good primary and secondary education and opportunities for medical care, education and office employment, mean that nationally the *UNDP Gender Inequality Index (GII)*²⁷ is

equivalent to the average GII in OECD Countries. However, in more isolated atolls a lack of mobility and employment opportunities, and the difficulty of providing educational and health services, have resulted in levels of GII equivalent to the worst encountered in South Asia, Sub-Saharan Africa and the Arab States. Women have traditionally held family and land-based responsibilities, including a predominant role in agriculture, which is an important element of the Laamu local economy. However, in the tourism sector, limited mobility and social mores mitigate against women finding employment in tourism. In fisheries, the most visible activity of fish harvesting is performed exclusively by men, but women are involved in the preharvest and postharvest stages, and are more involved than men in postharvesting activities, especially in fish processing. Because women's work in the sector is less visible and less recognized, women are often overlooked in policy making and resource allocation and thus often miss out on incentives to improve the productivity of the sector such as credit, technologies, and training²⁸.

As part of project activities to build practical local knowledge of successes into a national programme of social marketing and outreach through universities, networked learning facilities, government and potentially religious leaders, the project will address the social dimension of gender roles in the communities. Furthermore, to change the way people use and manage marine and natural resources, the roles, needs and skills of men and women need to be assessed, and the project will take this into account, for example by conducting a gender assessment to improve understanding of the underlying social mechanisms and community perspectives related to marine biodiversity and natural capital. During the project preparation phase, stakeholder engagement will focus on understanding how Project activities can best target the needs of women and youth in the implementation of activities under Component 1. In addition, issues of gender equality will be clearly identified in the baseline studies which will look closely at the UNDP GII in the L Gan, Kalhaidoo and Gaadhoo of Laamu Atoll. Focus Group Discussions will specifically target women's groups on the basis of seniority and family responsibilities and engagement in employment and education (e.g. at the Horizon Fish Processing facility on Mundhoo Island). With regard to the scaling up of lessons learnt in Laamu under Component 2, it is expected that demand from women for the provision of similar opportunities will lead to wide replication of the demonstration projects, and linkages between the reduced environmental footprint – and impact on biodiversity – of activities on Laamu will feature in social marketing and institutional networking. In addition, the livelihood gains for women through biodiversity mainstreaming are expected to be a driver for policy and regulatory change in government under Component 3.

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

Risk	Level	Risk Mitigation Strategy
Possible shifts in government priorities and/or policy changes, including the issues of decentralization	L	The project will strengthen the political commitment by raising the awareness of decision makers, institutions, and communities on the importance of natural capital to sustaining national development objectives. In relation to decentralization, the Project complements other projects, notably the LECReD Project and the GCF Project, which are focused on strengthening local communities.
Reluctance, distrust and limited institutional and community understanding and capacity to work on change with regards locally managed MMA, impact reduction to reefs, and eco-production practices	M	The social marketing campaign and well as the community-based resources management approach of the project are aimed at building trust, collaboration as well as local (in-kind) contributions to the project objectives. The baseline and stakeholder assessments during the PPG will have to determine how feasible the decentralized management models are, what additional resources and approaches needed, as well as where the GEF as well as the GoM resources can step in. The project will also strengthen capacity of decision makers, institutions, as well as facilitate and empower communities through facilitating social organization, targeted training, including Field Schools and access to best practice tools. 1
Continued uncontrolled exploitation of marine ecosystems / biodiversity by island communities	M	Although pressure to use marine resources is significant, the threat to inshore coral reefs through intensive bait fishing is already receiving attention from the Ministry for Fisheries and Agriculture. To the extent that the targeted island communities depend on tourist resorts to provide a market for reef fish, the project will address this risk through multi-stakeholder engagement between resort management/middle men, fishermen and local and national governments to establish a regulated fishery. To the extent that open access to the reef fishery in targeted communities is promoting over-harvesting, incentives and monitoring of impacts will be used to explore options for systemic changes to policy and law.
Lack of institutional / individual capacities to link NC and biodiversity concerns to other sectoral policies and provisions	M/H	The project will undertake awareness raising and capacity building about the way biodiversity / natural capital benefits are critical for most if not all productive sectors, in part by using social marketing tools, sector round tables and training directed at a range of government and civil society and industry stakeholders.
Limited coordination / communication between sectoral agencies and/or	M/H	The Project will partner with several key ministries – seeking shared interest through e.g. shared NC objectives and resources, to address negative perceptions among development-focused ministries/sectors, and the close involvement of relevant sectoral agencies is

ministries		foreseen in project implementation as well as the development of inter-agency collaboration using shared national commitment to the SDGs
Increasing frequency of severe <i>El Nino</i> events results in coral bleaching events that prevent the recovery of reefs	M/H	The 2015/16 <i>El Nino</i> has caused heavy damage to coral reefs in the Maldives through bleaching. The project is designed to produce the best environmental conditions in favor of a healthy coral reef so that they are more resilient to future bleaching events and able to recover more quickly from the 2015/16 event. In addition, by demonstrating the economic benefits of sustaining reef natural capital, the project will encourage ongoing support for reef protection and recovery from throughout Maldivian society.

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

This Project is concerned with **mainstreaming** biodiversity. By its nature and overall objective it will need to seek strong coordination across government and levels of government and civil society. In order to do this there are a number of GEF and other donor projects with which it will collaborate. By its nature, the Project is concerned with building the capacity for behavior change among individuals and among institutions that will extend the impacts of other projects, more narrowly concerned with delivery of technical solutions at particular locations to the protection of natural capital and for them to be sustained and replicated. Because of the geography of the Maldives, the country has a vulnerability to predicted environmental change that has ensured a large number of projects have or is occurring, funded by multilateral and bilateral development partners. Some of the most important of these to this Project are:

Project	Relationship to Project
<i>Integrated Water Resource Management in the Maldives. GEF Regional Project:</i> The ongoing SIDS AIO - Integrated Water Resource Management in the Maldives, a regional UNDP/UNEP/GEF project (USD 9.4 million GEF grant) aims at promoting integrated water resources management in six island states: Maldives, Seychelles, Mauritius, Comoros, Cape Verde and Sao Tome and Principe. In the Maldives, the project will implement a demonstration project on Thodoo Island about 70 km from Male to resolve pollution of the freshwater lens, regulate abstraction and address the challenge of saltwater intrusion.	The proposed project will adapt methodologies suitable for the main targeted sectors in Laamu, to maximize environmental benefits to the reefs and marine environment, and provide opportunities for comparative studies and visits.
<i>GCF Support for Vulnerable Communities in the Maldives to Manage Climate Change-Induced Water Shortages:</i> This USD 25 million GCF project managed by UNDP and Implemented by the MEE will provide safe and secure freshwater to 105,000 people on the outer islands of the Maldives through integrated water supply systems, decentralized dry season water supplies, and improvements to groundwater quality.	Given its common objectives in terms of water efficiency and supply, pollution and groundwater protection with the Project's Component 1 activities and deliverables, the GCF project constitutes an important baseline investment to which the GEF Project will provide incremental support – specifically targeting environmental benefits to reefs, through work with sectors like horticulture, fish processing and village sewage treatment; as well as conducting environmental monitoring..
<i>UNDP-Low Emission Climate Resilient Development (LECReD):</i> Enhanced capacities at national and local levels to support low carbon life-styles, climate change adaptation, and disaster risk reduction.	Collaboration on mapping of physical and natural resources of Laamu Atoll; the establishment of waste management facilities; as well as building upon the local governance mechanisms for community participation and co-management established under LECReD. Also sharing local networks and potentially sharing office accommodation
<i>Enhanced Resilience of social-ecological coral reef systems in the Maldives (REGENERATE):</i> USAID supported and implemented through IUCN and GoM.	Common objectives related to reef and fisheries management and relationships with tourism and fisheries sectors. Devising bottom-up management practices of Marine Management Area (MMA). Strong baseline data and information networks, including links to the MNU
<i>Climate Change Adaptation Project (CCAP):</i> The World Bank is developing management plans for wetlands and working up coral reef monitoring projects with 14 tourist resorts	Similar objectives in relationship to coral reef monitoring and management planning in conjunction with tourism facilities. Monitoring methodologies and logistical organization and reporting will benefit the GEF Project.
<i>Sustainable Grouper Fishery Assessment and Management in Laamu -</i> by Marine Research Center.	The Project will benefit from the field surveys on grouper aggregation and maturity, which will be used to enhance management of grouper fishery under Comp 1.2.
<i>UN Environment SWITCH Asia project –</i> (i) National Roundtable on Sustainable Consumption and Production (SCP) and the 10FYP in the Maldives; and (ii) South Asia SCP Dialogue and Training on Sustainable Waste Management and Tourism	Collaborate towards integrating SCP principles and Natural Capital in national sector policies, and development plans. Shared focus on local resource efficiency, reducing water use and pollution, waste reduction & management, and NC-based self-sufficiency for livelihoods improvement. One of many projects related to solid waste management providing baseline and resources for Laamu interventions to reduce polluted run-off.

UN Environment TEEB program – various recent, ongoing and soon to start NCA projects utilizing and building upon SEEA.	Advancing Natural Capital Accounting (ANCA) project - completed: utilise and build upon the methodology, tools and guidelines available. Benefit from the significant expertise in NCA and valuation housed with the TEEB team and its international partners, for capacity building, design of NC Accounts, and strategies to integrate NCA in routine government processes..
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In the preparation of the Project (PPG) a much larger list of activities recently completed, on-going or planned will be documented. However, this already significant list underpins the importance of a coordinating mechanism to ensure not only that overlap and gaps are avoided but that close synergy can be generated. Synergy is particularly important in the Maldives because of the size and geographic spread of the country and because key issues and constraints to biodiversity and environmental services conservation are often common to each of the projects. It will be appropriate for this Project, concerned as it is with mainstreaming, to facilitate a high level coordinating *ad hoc Steering Committee* in the MEE that can guide, through adaptive management, the implementation of these and other major projects so that they most effectively contribute to the national environmental priorities for 2020 and 2030.

6. Consistency with National Priorities. Is the project consistent with the National strategies and plans or reports and assessments under relevant conventions? (yes /no). If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.

Dramatic changes in national priorities, governing structures and national policies in the past ten years reflect the growing support for conservation and sustainable use of resources in the Maldives and align well the interventions of the proposed project. The 2008 Constitution highlights the importance of conservation and sustainable use of biological resources for the benefit of present and future generations; and stating protection of environment is a duty of the state as well as the local councils. The President of the Maldives pledged to make the entire country a Biosphere Reserve by 2017, and this was endorsed by the Cabinet in January 2013.

The Maldives climate change National Adaptation Plan of Action (NAPA), the 3rd National Environmental Action Plan (NEAP III) and the Strategic Action Plan of Maldives 2009-2013 (SAP) each adopt the goals of the 2002 NBSAP to: i) Conserve biological diversity and sustainably utilize biological resources; ii) Build capacity for biodiversity conservation through a strong governance framework, and improved knowledge and understanding; and iii) Foster community participation, ownership and support for biodiversity conservation; all three of these goals will be supported by the activities of the proposed project. The proposed project sets out an approach which complements the NBSAP, seeks to synergize with initiatives currently under way or planned that are in accordance with the national direction in biodiversity and environment, and to assist in linking the practical process of change to mainstreaming at the local level to processes of awareness raising and consolidation in governance at the national level. The NBSAP 2016-2025, which incorporates the Aichi Goals and Targets and the country’s Biodiversity Strategic Plan 2010-2020, is based on three interacting principles of which Principle 3 is directly supported by the Project “Biodiversity shall be mainstreamed into all sectors in a manner whereby monitoring of progress and accountability can occur”. Further, the NBASP sets out six Strategies of which at least five are directly supported by the proposed project, as detailed in the table below:

Strategy	Targets	Relationship to Project
Strengthen governance, policies and strategies for biodiversity	<ol style="list-style-type: none"> 1. By 2020 governance on biodiversity conservation is strengthened at local and national level 2. By 2025 mainstream biodiversity into island, atoll, sectoral and national plans 3. By 2025 government, businesses and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits. 	Issues are targeted directly in Components 1 and 3 at the local and national levels and with civil society and business sectors
Enhancing communication and outreach through awareness programs and capacity building	<ol style="list-style-type: none"> 1. By 2025 people are aware of the value of biodiversity and the steps they can take to conserve and use it sustainably 2. By 2025 parliamentarians, judiciary, elected officials and decision makers across government are aware of the significance of including biodiversity conservation in all developmental, social and economic policies, strategies, plans, laws and regulations. 3. By 2025 the capacity of people including community, CBOs, NGOs, media and different government bodies to manage knowledge and to participate in biodiversity planning is increased 	Issues are targeted in Component 2 (in collaboration with the MNU)
Ensure sustainable use of biological resources	<ol style="list-style-type: none"> 1. By 2020 all major fishery, including aquaculture and mariculture are managed and harvested sustainably. 2. By 2017 fertilizers, insecticides, pesticide, and excess nutrient management are 	Issues are targeted in Components 1 and 3 in Laamu and also

	<i>sustainably managed</i> 3. By 2020 at the latest, positive incentives for conservation and sustainable use of biodiversity are developed and applied.	nationally
Address threats to conserve biodiversity	1. By 2025 pressures on coral reefs and other vulnerable ecosystems due to anthropogenic activities and climate change are minimized. 2. By 2025, impacted ecosystems that provide essential services related to water, human health, wellbeing and livelihood are restored significantly. 3. By 2020 pollution from waste and sewage has been brought to levels that are not detrimental to ecosystem functions and biodiversity.	Issues are targeted in Component 1 in demonstration in the Laamu Atoll
Strengthen Information Management and Resource Mobilization	1. By 2025 innovative financing mechanisms for biodiversity conservation are established.	Issue is targeted in Component 3

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

The proposed project places knowledge management at the center of its strategy. Component 2 is concerned with social marketing and awareness raising throughout the Maldives and capacity building and training support by the Project will support national plans to establish a National Biodiversity Knowledge and Outreach Centre within the Laamu-based local chapter of the Maldives National University. The intention in the University is for the “Centre” to be located on an outer island campus, and the lessons derived from the collections and displays will be available for networking throughout the country through the four branch campuses and other Learning Centers and Outreach Centers. The project also will help to develop a Social Marketing and Outreach Plan to raise awareness of the importance of biodiversity, NC and environmental services to national economies and livelihoods, and it will support the incorporation of marine biodiversity and natural capital values into school curricula, teacher training and the curricula of fisheries and agricultural courses. The strategic location of the Maldives in terms of its biogeography and the sophistication of its society and education systems mean that the existence of national institutional facilities to develop and extend awareness about biodiversity will be a major attraction for international research and development that this Project will help to facilitate through capacity building.

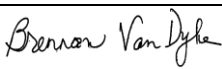
PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
Miruza Mohamed	Director, and National GEF Operational Focal Point	Ministry of Environment and Energy	17/10/2016

B. GEF AGENCY(IES) CERTIFICATION

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

Agency Coordinator, Agency name	Signature	Date (MM/dd/yyyy)	Project Contact Person	Telephone	Email
Brennan Van Dyke GEF Executive Coordinator Deputy Director, Office for Operations, UNEP		March 27, 2017	Max Zieren Task manager	+66-2 288 2101	max.zieren@unep.org

Annex 1 : *Project alignment with the CBD-Aichi Targets:*

Aichi Targets	Project Design Response
Target A.1: By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.	The Project will contribute to this target through partnership with the MNU and implementation of national activities in Component 2
Target A.2: By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems	The Project will contribute to this target through its work on the islands in the Laamu Atoll in Component 1 and institutionalization in Components 2 and 3
Target A.4: By 2020 Governments, business and stakeholders at all levels have taken steps to implement plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits	The Project will contribute to this goal through demonstration in the islands of the Laamu Atoll and institutionalization in Component 3
Target B.8: By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity	The Project will contribute to this target through demonstration activities in the Laamu Atoll in Component 1
Target B.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	The Project is taking action in Component 1 to reduce those ancillary stressors that aggravate the impacts of climate change on coral reef ecosystems

¹ IUCN Red List Threatened Categories: CR = Critically Endangered; EN = Endangered; VU = Vulnerable

² Emerton, L., Baig, S. and Saleem, M. (2009). Valuing Biodiversity. The economic case for biodiversity conservation in the Maldives. AEC Project, Ministry of Housing, Transport and Environment, Government of Maldives and UNDP Maldives.

³ Sluka, R.D. 2000. *Grouper and Napoleon Wrasse Ecology in the Laamu Atoll, Republic of the Maldives*. Atoll Research Bulletin, 492. Smithsonian Institute: Washington.

⁴ Sattar, SA, A. Najeeb, F. Islam, MS Afzal and E.Wood 2010. *Managing the Grouper fishery of the Maldives*. Darwin Reef Fish Project with the Marine Research Centre, Ministry of Fisheries and Agriculture, Male: Maldives.

⁵ According to the IUCN - Valuing Biodiversity Report (2009)

⁶ Carla Morri, Monica Montefalcone, Roberta Lasagna, Giulia Gatt, Alessio Rovere, Valeriano Parravicini, Giuseppe Baldelli, Paolo Colantoni, Carlo Nike Bianchi: 2015. *Through bleaching and tsunami: Coral reef recovery in the Maldives*.

⁷ Dr Abdul Ameer IUCN Pers comm.

⁸ The population of the main islands of Laamu have received in-migration of residents from other atolls since the Tsunami in 2005

⁹ Smith, JS and CR Johnson. 1995. *Nutrient inputs from sea-birds and humans on a populated coral cay*. Mar.Ecol. Prog. Ser., 124:189-200

¹⁰ The GCF proposes USD 23.6 million to provide safe and secure freshwater to 105,000 people on the outer islands of the Maldives, in response to climate change-induced water shortages. Introducing integrated water supply systems, decentralized dry season water supplies, and improvements to groundwater quality.

¹¹ See T. R. McClanahan, 2000, *Bleaching Damage and Recovery Potential of Maldivian Coral Reefs*, Marine Pollution Bulletin Vol. 40, No. 7, pp. 587-597, 2000

¹² Personal Communication Dr Ameer Abdulla 2016

¹³ Muthukrishnan, R. and P. Fong. 2014. *Multiple anthropogenic stressors exert complex, interactive effects on a coral reef community*. Coral Reefs, 33:911-921

¹⁴ Dr A Ameer, May 2016 pers comm

¹⁵ See Wilkonson 2008 op cit. p 122.

¹⁶ Wilkinson, C. (2008). Status of coral reefs of the world: 2008. Global Coral Reef Monitoring Network and Reef and Rainforest Research Centre, Townsville, Australia, 296 pp

¹⁷ Muthukrishnan, R. and P. Fong. 2014. *Multiple anthropogenic stressors exert complex, interactive effects on a coral reef community*. Coral Reefs, 33:911-921

¹⁸ There is an extensive literature on the influence of these stressors on coral reefs; however compelling evidence in support of the hypothesis that underpins this proposal is found in the paper: R. Muthukrishnan and P. Fogg 2014. *Multiple anthropogenic stressors exert complex, interactive effects on a coral reef community*. Coral Reefs, 33:911-921

¹⁹ See Garrett Hardin: *The Tragedy of the Commons*, 1968

²⁰ The concept of conservation and development as two sides of a single coin was the basis for the 1980, 1st World Conservation Strategy and the 1992, 2nd WCS: *Caring for the World: A Strategy for Sustainability*

²¹ Recovery from the latest bleaching event of 2015-2016

²² **Eco-design** is a process which diminishes the impact of a product on its environment throughout its life cycle: extraction of raw materials-manufacture-use-disposal. It usually applies to hardware but may also be applied to services. The aim is to optimize the socio-economic system of the product to meet the criteria of sustainable development. It aims to advance prosperity while reducing "environment spending".

²³ WWF define the concept of **Ecological Footprint** as the impact of human activities measured in terms of the area of biologically productive land and water required to produce the goods consumed and to assimilate the wastes generated.

²⁴ Final selection of the targeted inhabited islands will be made during PPG when consultations with island councils will be held and interest determined.

²⁵ The project would partner on this with the (GEF) Integrated Water Resource Management project (www.aio-iwrm.org/newsletter) as well as the GCF Support for Vulnerable Communities in the Maldives to Manage Climate Change-Induced Water Shortages .

²⁶ **Social capital** can be defined as the links, shared values and understandings in society that enable individuals and groups to trust each other and so work together.

²⁷ 2014 UN Human Development Index report for the Maldives

²⁸ ADB (2014) Maldives: Gender equality diagnostic of selected sectors, <http://www.finance.gov.mv/v2/uploadedcontent/posts/intpub/Post1385-2014.pdf>