

Mainstreaming Natural Capital Values into Planning and Implementation for Sustainable Blue Economic Growth in Indian Coastal Districts

Part I: Project Information

GEF ID

10385

Project Type

FSP

Type of Trust Fund

GET

CBIT/NGI

☐ CBIT

☐ NGI

Project Title

Mainstreaming Natural Capital Values into Planning and Implementation for Sustainable Blue Economic Growth in Indian Coastal Districts

Countries

India

Agency(ies)

UNEP

Other Executing Partner(s)

Ministry of Environment, Forests and Climate Change; with Ministry of Statistics and
Programme Implementation, Ministry of Shipping, Ministry of Finance

Executing Partner Type

Government

GEF Focal Area

Biodiversity

Taxonomy

Biodiversity, Focal Areas, Protected Areas and Landscapes, Terrestrial Protected Areas, Coastal and Marine Protected Areas, Mainstreaming, Infrastructure, Biomes, Tropical Rain Forests, Tropical Dry Forests, Wetlands, Mangroves, Financial and Accounting, Natural Capital Assessment and Accounting, Influencing models, Strengthen institutional capacity and decision-making, Demonstrate innovative approaches, Stakeholders, Beneficiaries, Capacity, Knowledge and Research, Innovation, Land Cover and Land cover change, Land Degradation Neutrality, Land Degradation, Capacity Development, Knowledge Generation, Knowledge Exchange

Rio Markers**Climate Change Mitigation**

Climate Change Mitigation 0

Climate Change Adaptation

Climate Change Adaptation 2

Duration

60 In Months

Agency Fee(\$)

289,403.00

Submission Date

10/11/2019

A. Indicative Focal/Non-Focal Area Elements

Programming Directions	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
BD-1-3	GET	3,046,347.00	15,385,000.00
	Total Project Cost (\$)	3,046,347.00	15,385,000.00

B. Indicative Project description summary

Project Objective

To enhance biodiversity conservation and environmental sustainability of critical coastal landscapes in India by integrating natural capital and ecosystem services values in District-level blue economy strategy and spatial planning processes, and coastal sector operations.

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
1. National system support for blue economic growth model incorporating natural capital (NC) values.	Technical Assistance	<p>1.1 Enhanced institutional capacity towards integrating NC values in government procedures and the System of National Accounts (SNA) – in favor of blue economic growth</p> <p>Targets:</p> <ul style="list-style-type: none"> -Clarified mandates and enhanced inter-agency coordination on NC accounting and valuation -Financing identified and increase in budget allocated for NC accounting framework and operations -Government SDG and GDP reports incorporate elements of NC /BD assessment and valuation results. 	<p>1.1.1 Governance framework and roadmap established towards SEEA-based NC accounting and its integration into the System of National Accounts (SNA) and the NES-GRIDSS system.</p> <p>1.1.2 Policy-analysis and agreement on a position paper on system design towards linking NC accounts and SEEA-based indicators with routine government reporting procedures, e.g. Green GDP.</p> <p>1.2.1 National NES-GRIDSS system adapted to SEEA- EEA for NC -analysis, planning and investments</p> <p>1.2.2 Tourism and infrastructure sector review report on NC-based interdependencies, business risks and opportunities for Blue Economy development endorsed by relevant national and state decision-makers through sector roundtables – in two project sites</p>	GET	655,094.00	1,512,000.00

-SEEA-Experimental Ecosystem Accounting (EEA) adopted and adapted for Indian government NC related programming and reporting

1.2 The national system NES-GRIDSS adapted and enables planning and budgeting for Blue Economic growth in coastal districts through NC-based assessments and valuation for coastal and marine resources and sectors.

Targets:

-- Number of decisions from key sectors – of relevance to the two Sagarmala and Rebuild Kerala Initiative sites, endorsing NC findings (tourism and infrastructure development).

-Replication of SEEA-based National Environment Survey piloted in 2 representative coastal Districts

1.2.3 New NC-supportive budget, fiscal measures and indicators agreed for the development and monitoring of Blue Economy growth in the two project sites, enabled through the results of BioFIN and the expanded District SEEA- GRIDSS system (e.g. for M&E NC benefits)

-At least 2 coastal districts are tracking and/or in process of increasing NC/BD positive budgets and investments

2. Integration of NC objectives in planning and development of District Blue Economy and sector operations (tourism, infrastructure and other NC-sensitive sectors' development)	Technical Assistance	<p>2.1 Enhanced incorporation of the value of NC including biodiversity, in state and district government planning and corporate decision making</p> <p>Targets:</p> <ul style="list-style-type: none"> - 3 Districts' Blue Economy Strategy formulated, targeting improved landscape and sector management for key biodiversity and PA sites – based on applying SEEA-based information systems and analysis - NC-objectives integrated in sites of the Sagarmala and Rebuild Kerala Initiative investment plans (biodiversity conservation, connectivity & critical habitats, water & other ES, etc) 	<p>2.1.1 Four Districts' NES-GRIDSS made SEEA-EEA compliant and capacity established towards development of Blue Economy Strategies incorporating NC and BD aspects.</p> <p>2.1.2 Preparation of Green GDP report for one State using NES-GRIDSS.</p> <p>2.1.3 Two spatial Plans developed - targeting 2 sea-/landscapes associated with the Sagarmala and Rebuild Kerala Initiative by integrating NC values and development objectives; threat reduction and sustainable development opportunities identified, in support of the Blue Economy</p> <p>2.1.4 Public-private partnership and NC Protocols adopted by 2 corporations leading to start of green investments in the two project sites – specifically related to sustainable infrastructure, fisheries and tourism</p>	GET	1,671,429.00	10,150,000.00
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- increase in NC-related investments against baseline in x Districts
 - Integration of NC values and corporate risks into 2 company sustainability reporting, business plans and/or transactions
 - (3) Improved Districts spatial plans facilitate improved management of a total of 566,733 ha in two sea-/landscapes
 - focussed on key threats to biodiversity and ecosystem services.
- development under the Blue Economy Strategies and Spatial Plans.

3. National replication of NC accounting for blue economic growth in India	Technical Assistance	<p>3.1 Strengthened national partnerships, knowledge and acceptance of NC accounting for District upscaling and replication.</p> <p>Targets:</p> <p>-Awareness and capacity of policy makers and practitioners in India in mainstreaming NC accounting enhanced at least by 30%.</p>	<p>3.1.1 Communication and engagement strategy for partnership and adoption of SEEA-based NC accounting developed and implemented.</p> <p>3.1.2 Knowledge management platform and impact performance M&E developed to support policy makers and practitioners in India in adopting, replicating and mainstreaming NC accounting.</p> <p>3.2.1 Staff training in 12 (4 + 8) coastal districts in SEEA-based NES-GRIDSS system on</p>	GET	574,760.00	2,990,536.00
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-Clarified mandates and enhanced inter-agency coordination on NC accounting and valuation

- M&E system generating meaningful data and information on the project and its key partner agencies

3.2 Enhanced capacity to apply SEEA-based NC accounts, valuation and other applications to spatial planning, budgeting and integrated natural resource management for blue economic development.

Targets:

-Capacity of practitioners in establishing and applying SEEA-based NC accounts enhanced by 30% and leading to applications in 12 districts

application to coastal and marine resources, sectors and Blue Economy development

3.2.2 National replication of NC-based NES-GRIDSS and Environmental Information System (ENVIS) development and implementation in 8 additional Districts through the Green Skill Development Programme (mainly co-financed).

Sub Total (\$)	2,901,283.00	14,652,536.00
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Project Management Cost (PMC)

GET	145,064.00	732,464.00
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Sub Total(\$)		145,064.00	732,464.00
Total Project Cost(\$)		3,046,347.00	15,385,000.00

C. Indicative sources of Co-financing for the Project by name and by type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount(\$)
Recipient Country Government	Ministry of Environment, Forest and Climate Change (MoEFCC) – including national budgets for ENVIS including NES-GRIDSS and Green Skill Development Program	Grant	Recurrent expenditures	5,000,000.00
Recipient Country Government	Ministry of Environment, Forest and Climate Change (MoEFCC) – including national budgets for ENVIS including NES-GRIDSS and Green Skill Development Program	In-kind	Recurrent expenditures	5,000,000.00
Recipient Country Government	Ministry of Statistics and Programme Implementation, Ministry of Finance	In-kind	Recurrent expenditures	500,000.00
Recipient Country Government	States and 12 (4+8) districts	In-kind	Recurrent expenditures	2,185,000.00
Recipient Country Government	Kerala State Government – under the Rebuild Kerala Initiative – related water management, tourism, infrastructure sectors	Grant	Investment mobilized	1,050,000.00
Recipient Country Government	Ministry of Shipping, Sagarmala Program	In-kind	Recurrent expenditures	1,000,000.00
Recipient Country Government	Ministry of Shipping, Sagarmala Program	Grant	Investment mobilized	250,000.00
Civil Society Organization	Wetlands International	In-kind	Recurrent expenditures	300,000.00

GEF Agency	UN Environment	In-kind	Recurrent expenditure s	100,000.00
Total Project Cost(\$)				15,385,000.00

Describe how any "Investment Mobilized" was identified

Three PIF consultations were held with the Sagarmala project team - Ministry of Shipping, with regards partnership, identification of project sites, as well as approximate investments and activities planned by the Ministry for one of the targeted Sagarmala project site (see section 1.1). Whilst the Ministry being conductive as (co-finance) project partner, including through suggested cash investments, they indicated preference to discuss further during the PPG, given the need to use the detailed design documents of the Sagarmala program (which are not available to the public). The stated (investment) co-financing by the Kerala State Government, is based on the investment plans in various related resilience, flood management and environmental protection work, as part of the State government Rebuild Kerala Initiative, specifically related to those identified and related to integrated management of the Ramsar Site in the Vembanad-Kol estuary-floodplain, as part of the ongoing collaboration with Wetlands International.

D. Indicative Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
UNEP	GET	India	Biodiversity	BD STAR Allocation	3,046,347	289,403	3,335,750.00
Total GEF Resources(\$)					3,046,347.00	289,403.00	3,335,750.00

E. Project Preparation Grant (PPG)
PPG Required



PPG Amount (\$)				PPG Agency Fee (\$)			
150,000				14,250			
Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
UNEP	GET	India	Biodiversity	BD STAR Allocation	150,000	14,250	164,250.00
Total Project Costs(\$)					150,000.00	14,250.00	164,250.00

Core Indicators

Indicator 3 Area of land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
0.00	0.00	0.00	0.00

Indicator 3.1 Area of degraded agricultural land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 3.2 Area of Forest and Forest Land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 3.3 Area of natural grass and shrublands restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 3.4 Area of wetlands (incl. estuaries, mangroves) restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4 Area of landscapes under improved practices (hectares; excluding protected areas)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
566733.00	0.00	0.00	0.00

Indicator 4.1 Area of landscapes under improved management to benefit biodiversity (hectares, qualitative assessment, non-certified)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
566,733.00			

Indicator 4.2 Area of landscapes that meets national or international third party certification that incorporates biodiversity considerations (hectares)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Type/Name of Third Party Certification

PPG to set target on ha certified & confirm volumes traded

Indicator 4.3 Area of landscapes under sustainable land management in production systems

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4.4 Area of High Conservation Value Forest (HCVF) loss avoided

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Documents (Please upload document(s) that justifies the HCVF)

Title	Submitted

Indicator 5 Area of marine habitat under improved practices to benefit biodiversity (excluding protected areas)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 5.1 Number of fisheries that meet national or international third party certification that incorporates biodiversity considerations

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)

Type/name of the third-party certification

Indicator 5.2 Number of Large Marine Ecosystems (LMEs) with reduced pollutions and hypoxia

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (achieved at MTR)	Number (achieved at TE)
0	0	0	0

LME at PIFLME at CEO EndorsementLME at MTRLME at TE

Indicator 5.3 Amount of Marine Litter Avoided

Metric Tons (expected at PIF)	Metric Tons (expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 6 Greenhouse Gas Emissions Mitigated

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO ₂ e (direct)	0	0	0	0
Expected metric tons of CO ₂ e (indirect)	0	0	0	0

Indicator 6.1 Carbon Sequestered or Emissions Avoided in the AFOLU (Agriculture, Forestry and Other Land Use) sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO ₂ e (direct)				
Expected metric tons of CO ₂ e (indirect)				
Anticipated start year of accounting				
Duration of accounting				

Indicator 6.2 Emissions Avoided Outside AFOLU (Agriculture, Forestry and Other Land Use) Sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO ₂ e (direct)				
Expected metric tons of CO ₂ e (indirect)				

Anticipated start year of accounting

Duration of accounting

Indicator 6.3 Energy Saved (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Total Target Benefit	Energy (MJ) (At PIF)	Energy (MJ) (At CEO Endorsement)	Energy (MJ) (Achieved at MTR)	Energy (MJ) (Achieved at TE)
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Target Energy Saved (MJ)

Indicator 6.4 Increase in Installed Renewable Energy Capacity per Technology (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Technology	Capacity (MW) (Expected at PIF)	Capacity (MW) (Expected at CEO Endorsement)	Capacity (MW) (Achieved at MTR)	Capacity (MW) (Achieved at TE)
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Indicator 8 Globally over-exploited fisheries moved to more sustainable levels

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)
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Fishery Details

Indicator 9 Reduction, disposal/destruction, phase out, elimination and avoidance of chemicals of global concern and their waste in the environment and in processes, materials and products (metric tons of toxic chemicals reduced)

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)
0.00	0.00	0.00	0.00

Indicator 9.1 Solid and liquid Persistent Organic Pollutants (POPs) removed or disposed (POPs type)

POPs type	Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)
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Indicator 9.2 Quantity of mercury reduced (metric tons)

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.3 Hydrochlorofluorocarbons (HCFC) Reduced/Phased out (metric tons)

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

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Indicator 9.4 Number of countries with legislation and policy implemented to control chemicals and waste (Use this sub-indicator in addition to one of the sub-indicators 9.1, 9.2 and 9.3 if applicable)

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)

Indicator 9.5 Number of low-chemical/non-chemical systems implemented, particularly in food production, manufacturing and cities (Use this sub-indicator in addition to one of the sub-indicators 9.1, 9.2 and 9.3 if applicable)

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)

Indicator 9.6 Quantity of POPs/Mercury containing materials and products directly avoided

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 10 Reduction, avoidance of emissions of POP to air from point and non-point sources (grams of toxic equivalent gTEQ)

Grams of toxic equivalent gTEQ (Expected at PIF)	Grams of toxic equivalent gTEQ (Expected at CEO Endorsement)	Grams of toxic equivalent gTEQ (Achieved at MTR)	Grams of toxic equivalent gTEQ (Achieved at TE)

Indicator 10.1 Number of countries with legislation and policy implemented to control emissions of POPs to air (Use this sub-indicator in addition to Core Indicator 10 if applicable)

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)

Indicator 10.2 Number of emission control technologies/practices implemented (Use this sub-indicator in addition to Core Indicator 10 if applicable)

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)

Indicator 11 Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	108			

Male	252			
Total	360	0	0	0

Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicator targets are not provided

AichiTarget 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. Target 4: By 2020, at the latest, governments, business 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 Target 8: By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity Target 11 - By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes. Target 19 - By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.

Part II. Project Justification

1a. Project Description

1a. *Project Description.*

1.1. Global environmental and/or adaptation problems, root causes and barriers that need to be addressed

1.1.1 Status, trends and importance of NC and Biodiversity in India and suggested project sea-/landscapes

India, a megadiverse country with only 2.4% of the world's land area, accounts for 7-8% of all recorded species, including over 45,000 species of plants and 91,000 species of animals. It is situated at the tri-junction of the Afrotropical, Indo-Malayan and Palearctic realms, all of which support rich biodiversity. Being one of the 17 identified megadiverse countries, India has 10 biogeographic zones and is home to 8.58% of the mammalian species documented so far, with the corresponding figures for avian species being 13.66%, for reptiles 7.91%, for amphibians 4.66%, for fishes 11.72% and for plants 11.80%. Four of the 34 globally identified biodiversity hotspots, namely the Himalaya, Indo-Burma, the Western Ghats-Sri Lanka and Sundaland, are represented in India. It has one of the richest and oldest medicinal plant cultures of the world and it is estimated that the country has 6560 species of medicinal plants. Additionally, India is an acknowledged center of crop diversity and harbours hundreds of varieties of crop plants such as rice, maize, millets etc. The diverse physical features and climatic conditions have resulted in a variety of ecosystems such as forests, grasslands, wetlands, desert, coastal and marine ecosystems which harbour and sustain high biodiversity and contribute to human well-being.

India has a coastline of 8,118 km, with an exclusive economic zone (EEZ) of 2.02 million km² and a continental shelf area of 468,000 km², spread across nine coastal States and four Union Territories, including the islands of Andaman and Nicobar and Lakshadweep. Indian coastal waters are extremely diverse attributing to the geomorphologic and climatic variations along the coast. The coastal and marine habitat includes near shore gulf waters, creeks, tidal flats, mud flats, coastal dunes, mangroves, marshes, wetlands, seaweed and seagrass beds, deltaic plains, estuaries, lagoons and coral reefs. There are four major coral reef areas in India: along the coasts of the Andaman and Nicobar group of islands, the Lakshadweep group of islands, the Gulf of Mannar and the Gulf of Kutch (sometimes referred to as Kachchh). Mangrove ecosystems are found along both the east and west coasts of India covering an estimated area of 4,975 km², as per the latest Indian State of Forest Report 2019. Important mangrove areas are in the Sundarbans, Bhitarkanika Krishna and Godavari delta of Andhra Pradesh, Andaman and Nicobar Islands, Gulf of Kutch, and the Pichavaram-Vedaranyam area of Tamil Nadu coast. Seagrass beds are found along the coasts of Tamil Nadu, Lakshadweep islands, Andaman and Nicobar Islands and the Sundarbans. 844 species of seaweeds are found in shallow waters all along the Indian coast particularly in Tamil Nadu, Gujarat, Goa, Maharashtra and Lakshadweep. The value of blue economy assets along Indian coastline has been assessed to be US\$ 24 trillion, with an annual value addition of US\$ 2.5 trillion. These assets exist embedded within the 3 global megacities, 15 major global and 46 feeder ports, and over 230 industrial centers. Sustaining the rich biodiversity while ensuring economic progress is a planning imperative for the Government of India.

For millions of Indians, biodiversity underpins the form and function of ecosystems which are of high value due to the life-supporting services they provide that meet human needs both material and non-material. Natural capital (NC) and biodiversity support ecosystem services that have economic value for humans in terms of direct or indirect use. They are provisioning services, such as supplying of fuel and fodder, and regulating services, such as carbon sequestration and prevention of soil erosion. In the Indian context, NC and biodiversity support peoples' livelihoods and ways of life, especially as a range of socio-cultural values are derived from biodiversity, including cultural and religious values. Biodiversity and ecosystem diversity are reflected in the cultural and religious diversity of India through the varied values attached to NC and biodiversity components and landscapes.

However, the state of NC in India is in continued decline in recent years. A report on environment accounts released by the Ministry of Statistics and Programme Implementation in 2018 highlighted that India's economic growth has brought about negative impacts on its natural assets like forests, food and clean air. The report indicated that while the average growth rate of the gross state domestic product (GSDP) during 2005-15 for almost all the states was around 7-8 per cent, 11 states registered a decline in their NC, including Assam, Bihar, Jharkhand, Karnataka, Kerala, Mizoram, Punjab, Tamil Nadu, Tripura and Uttarakhand. Even whilst a net positive increment was observed in the asset account in some cases such as change of fallow land to farmland, increases in forest cover, a growing carbon stock and new findings of resources of minerals, these changes are not outweighing the overall loss of ecosystem functionality and biodiversity observed in India as well as in the region according to the 2018 regional assessment of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES assessment 2018)[1]. In addition, the report on environment accounts did not include non-monetary intrinsic values, which are elicited for nature's contributions to people. Considering the complexity of natural systems, the irreversibility of environmental changes and the threats of environmental degradation and overexploitation, there is an increasing risk of a substantial decline in the economic and non-monetary value of nature's contributions in coming decades (IPBES assessment 2018). This suggests that the economic development seems to be achieved at the cost of environment in some locations and concerning certain natural capital assets and services, and that some of the States may not be able to sustain the rate of development in long-term, highlighting the importance of monitoring the NC and making the assessment a basis for devising sustainable development strategies and investments^[2].

The Transboundary Diagnostic Analysis (TDA) conducted in the Bay of Bengal Large Marine Ecosystem (GEF -funded BOBLME project, 2009-2014) covering eight countries bordering the Bay of Bengal, including the coastal zone of India, identified three groups of environmental challenges: overexploitation of living marine resources such as fish stocks, degradation of critical habitats such as mangroves and reefs, as well as pollution and water quality. The main identified cause of degradation of critical habitats include lack of coastal development plans (incorporating NC values), upstream development that affects water flows and quality, and coastal development, industrialization and tourism development. The main identified causes of pollution and water quality include insufficient funds for waste management, an increasing human population generating increasing volumes of (untreated) waste, and high nutrient and pollutants discharge from inland agriculture and industries via rivers. Given it is becoming increasingly clear that the Bay of Bengal, including specifically in a populous country such as India, will not be able to support the needs and aspirations of the many sectors that use its coastal and marine resources, a paradigm shift is needed in the economic development model, investment portfolio and policy framework to enable a sustainable blue economic growth model in India, under which the protection and sustainable use of marine and coastal NC resources is a core element.

It is under these pretexts that MoEFCC is envisaging instituting a National Coastal Mission, that will not only conserve the coastal environment but also promote development, generate revenue and provide employment. The MoEFCC has also over the years made considerable investments in improving understanding on the values of nature and the costs of inaction for degradation. During 2011-14, the MoEFCC on the lines of the International TEEB study, implemented the TEEB India Initiative, wherein assessments at 14 pilot sites (drawn from forest, inland and coastal wetlands and marine ecosystems) to demonstrate the economic value of ecosystem services, and opportunities for mainstreaming in developmental planning.

India is witnessing infrastructure development at an unprecedented rate, attracting significant interest from international investors in infrastructure development projects. For example, in 2018, infrastructure sector in India witness private equity and venture capital investments worth USD 1.97 billion, and in June 2018, the Asian Infrastructure Investment Bank has announced USD 200 million investment into the National Investment & Infrastructure Fund (NIIF)[3]. The Government of India is also expected to invest intensively in the infrastructure sector, and has been undertaking various initiatives to boost the infrastructure sector, including the Sagarmala Project, a major infrastructure development initiative that has been developed with the aim to reduce logistics cost for export-import and domestic trade with minimal infrastructure investment. While this phenomenon is projected to significantly benefit human development goals, it will put enormous pressures on existing NC, which if unmitigated may compromise their ability to provide ecosystem services on which a large proportion of the country's population is still dependent upon. Further, it has been demonstrated that infrastructure projects in India in some cases have been planned and conducted with limited considerations to cumulative environmental impacts at the landscape level and proactive siting that avoids, mitigates and offsets impacts to NC and incorporation of ecosystem service values in planning and project assessment to evaluate social costs and benefits (Erlewein 2013)[4]. In other reported cases, wildlife corridors have become fragmented or otherwise affected by large transport infrastructure such as roads and railways due to suboptimal siting, lack of specific legal protection, as well as related land-use development/habitat conversions (Vivek Menon et al, 2017) [5]

The proposed project is designed to focus specifically on the two selected coastal sea-/landscapes (one involving the Sagarmala Project and other forming a part of the Rebuild Kerala Initiative), which offer significant opportunities for applying NC accounting approaches to inform infrastructure and tourism planning and development, wetland and watershed management and other development activities in order to ensure they are conducted in a sustainable manner and will not bring about negative impacts on the status of NC. The two sites suggested for the project include Aghanashini Estuary in Karnataka and Vembanad-Kol, an estuary-floodplain complex in Kerala, as depicted in Map 1 and Map 2 presented in **Annex A**.

The Aghanashini Estuary, spanning nearly 4,800 ha, formed at the interface of River Aghanashini with the Arabian Sea is the largest estuary of the Uttar Kannada district of (coastal) Karnataka State. The Aghanashini river originates in Gadihalli at an altitude of 667 m above mean sea level and flows a total distance of 117 km and finally meets Arabian Sea near Kumta (Bhat 2003). Although not yet formally gazette as protected area, the Government of Karnataka once again confirmed Aghanashini Estuary as a priority wetland for conservation and designation as Ramsar Site. The Aghanashini river traverses through forested, agricultural landscape and covers a total river basin of about 135,000 hectares (with large parts situated in the forested Western Ghats – of globally significance related to its unique ecosystems and biodiversity, including those legally protected in the Sharavathi Lion Tailed Macaque Wildlife Sanctuary (former expanded Aghanashini LTM Conservation Reserve) - being a key area of 93,016 ha protecting the freshwater habitat of *Myristica* swamps that hosts many species like the "Endangered: Lion Tailed Macaque (*Macaca Silenus*; see section 1.6 for more details on BD). The estuary itself supports key coastal and wetland ecological services including as feeding, roosting and breeding area for large numbers of resident and migratory waterbirds, including threatened species such as the Near-threatened: *Sterna aurantia*, *Haematopus ostralegus*, *Caladris ferruginea*, *Numenius arquata*, *Limosa lapponcia*, *L. limosa* and *Threskiornis melanocephalus*; and the Vulnerable *Leptoptilos javanicus*). The highly productive estuary sustains rich biodiversity which includes at least 13 species of mangroves, 77 fish, 33 crabs, 6 bivalves and 108 birds, several of which are migratory within the Central Asia Flyway. Historically, vast stretches of shallow, intertidal portions, alongside Aghanashini estuary have been embanked and converted to rice fields or gaznis where the salt tolerant, indigenous, Kagga rice has been grown from ancient times. Additionally, the area supports nearly 65,000 people living in surrounding villages, including a rich bivalve-based economy with an estimated turnover of US\$ 0.75 million per year.

The District/site is one of the key investment locations under the national Sagarmala project, including the proposed upgrading of the Tadadi Port and Hubballi-Ankola Railway Line (part of East Coast Economic Corridor). Recently, there has been increasing emphasis on boosting infrastructure developmental projects by Government of Karnataka, including the Karwar-Ankola Coastal Economic Zone (north of this site), an improved transport network and connectivity, as well as planned Sagarmala investments under Public Private Partnership in smaller feeder ports such as Tadadi Port – aimed at boosting cargo-handling of a.o iron ore, coal and steel products. A study conducted from 2016 to 2018 along 187 km of infrastructure work conducted in expansion of

the National Highway 66 (NH 66) from Karwar (north-west) of the GEF site) to Kundapura (south-east of the estuary) found that many more lives and livelihoods impacted of coastal families of Uttara Kannada than estimated in EIAs, in addition to damaging the coastal ecology of the region. There is increased concern the ongoing economic development – including indirectly from the Karwar-Ankola Coastal Economic Zone, in this coastal landscape/watershed will affect key ecological services, not only in support of globally significant biodiversity, yet also in maintaining resilience to increased occurrence of floods and drought, in which healthy wetlands and watersheds play a major role. The National Institute of Oceanography, involved in the pre-feasibility studies of Tadadi Port, classified the proposed Tadadi port land as CRZ I-A ('ecologically sensitive area'). However, public hearings and reviews on the port plans, coordinated by reputable institutions such as the Pollution Control Board (PCB) highlighted the serious flaws in the EIA as well as the approval procedure by the Expert Appraisal Committee (EAC - which has to assess the inclusiveness and quality of an EIA). However, these have not yet been taken forward by government in revised decisions, redesign or cancellation of the investment plans. It was also observed that specifically economic valuations of the estuary functions and services were not conducted nor incorporated in plans to safeguard or protect key ecological wetland functions including its support to globally significant biodiversity.

Sustained provision of the wide-ranging ecosystem services is under threat due to various reasons including over-fishing, unsustainable harvest of bivalve resource, conversion into aquaculture farms, uncontrolled sand extraction in the upstream river reaches, as well as possibly the harbor and transport infrastructure development through the Sagarmala Program mentioned above. Studies by the National Institute of Oceanography have shown that increased changes in coastal morphology including beach, river and estuary erosion or sedimentation patterns are a.o caused by the large scale sand extraction in the upper reaches of the coastal river catchments in Karnataka State, mainly used for the building and transport infrastructure development. Notwithstanding the existing and planned developments, the area remains of vital importance to conservation of wetland ecosystems, functions and the protection of globally significant biodiversity, including in the watershed of the Aghanashini river. The site is under consideration for designation as a Wetland of International Importance under Ramsar Convention; which a.o others builds upon the previous recommendation by The Centre for Ecological Sciences of IISc to the Karnataka State Biodiversity Board to declare the globally significant mudflats near Aghanashini village and the mangroves near Kaggal and Masur villages as 'Biodiversity Heritage Sites', under the Biological Diversity Act of 2002. The NC accounting and green economic development planning proposed by the GEF project will build the basis of a balanced developmental path for the region, particularly ensuring that the values of estuary are not compromised by upstream development in the river basin which effect the natural hydrological regimes.

Vembanad-Kol in Kerala State, is one of the largest coastal wetland complexes of India. Spanning an area of 156,600 hectares, the complex comprises Vembanad estuary flanked by river floodplains of Kuttanad and Kol, interspersed by estuaries and mangrove marshes interconnected by an intricate network of natural and manmade channels. These wetlands form a part of the extensive chain of backwaters of Kerala. Vembanad Kol wetlands provide a range of valuable ecosystem services and support rich biodiversity. Over 0.2 million households derive livelihood sustenance based on backwater tourism, inland navigation, clams, shellfish and finfish provided by the wetland complex. Very important for local economy is that the Vembanad lagoon buffers cities as Cochin and Ernakulam from floods. The wetland complex is also home to indigenous farming system, Pokkali, which has been accorded Geographical Indication status, including land races of crops maintained and used. The rich diversity supported by the wetland complex is indicated by recorded presence of 258 plankton, 338 plant, 150 fish, and 225 bird species. One Vulnerable and nine Near-threatened bird species have been reported from the area – see section 1.6 for more details. Each year during winters, Vembanad-Kol is known to harbour one of the highest populations of migrating waterbirds in the Central Asian Flyway within India. Vembanad – Kol was designated as a Wetland of International Importance (Ramsar Site) under the Ramsar Convention by the Ministry of Environment and Forests, Government of India in 2002.

Vembanad Kol is under severe stress from lopsided development which ignores wetland values and functioning. The wetland complex is located in an intensively developed landscape, which includes the Cochin port (the maritime gateway to peninsular India), Kumarakom (center for backwater tourism) and Kuttanad (the Rice Bowl of Kerala). The wetland is fringed by several large urban settlements as Cochin and Ernamkulam, as well as the state's industrial belt, Udyogmandal. Reclamation of shallower wetland regions and marshes in the Kuttanad and Kol region led to emergence of polders, locally called padashekharam, to enable agriculture. A number of spillways, regulators and locks were constructed on the inflowing rivers for regulating inflows and preventing salinity intrusion from the sea. In 1976, Thannermukkom Barrier was constructed across Vembanad to prevent saline water intrusion into Kuttanad and control tidal action within its polders. The period since 1990s has witnessed rapid increase in number of houseboats to cater to increased demand of the tourists. The natural banks of the wetland, once covered with thick mangrove forests, were cleared off to construct tourism facilities. Lack of consideration of wetland functioning within developmental programming has resulted in shrinkage and transformation of wetland area, reduced waterholding capacity, clogging of channels, pollution, growth of invasives, and decline in brackishwater fisheries and clam resources. Despite all hydrological interventions, agricultural productivity as well as production in Kuttanad has declined over the years, converting it from the coveted 'rice bowl of Kerala' to 'den of distress'.

The recent spate of extreme events, particularly the Kerala floods of 2018 has exposed the vulnerability of the Kerala coast, particularly to the degradation of natural wetlands which act as natural flood buffers of the landscape. A management planning framework for the Ramsar Site, put in place by State Wetlands Authority Kerala with support of Wetlands International South Asia has highlighted the role of intersectoral coordination as the primary means of conserving the natural ecosystem benefits.

The Rebuilding Kerala Initiative aims to "bring about a perceptible change in the lives and livelihoods of its citizens by adopting higher standards of infrastructure for recovery and reconstruction, and to build ecological and technical safeguards so that the restructured assets could better withstands floods in the future", and proposes investments across 13 sectors, yet underplays the role of natural solutions to reduction of flood risks, and need to consider integrated land and water management approaches to building a water resilient economy. Several investment proposals shall concentrate investment in ecological fragile areas, such as Kol wetlands. Application of NC accounting approaches can bring focus on the role of the wetland ecosystems in sustaining development as well as a potentially more green/blue development path of the region. The GEF initiative can also provide a pathway of sustaining wetlands ecological character (as commitment to Ramsar Convention, including habitat for 3 vulnerable bird species – Asian Woolly neck, Greater Spotted Eagle, and Indian Spotted Eagle, and 9 Near Threatened Species (Spot-billed Pelican, Oriental Darter, Painted Stork, Black-headed Ibis, Ferruginous Duck, River Tern, Grey Headed Fish Eagle, Black Tailed Godwit and European Roller, and 11 bird species having counts in excess of 1% of known biogeographical population threshold), wetland dependent livelihoods (such as ecotourism, Pokkali farming system and clam processing) as an incentive for natural resources stewardship.

1.1.2 Policy and legal context with regard to Blue Economy and spatial planning for coastal development, and protecting Natural Capital and Biodiversity in India

Sustainable development through blue economy. Recognizing the importance of biodiversity and NC, India's 12th Five Year Plan (2012-2017) had for the first-time mainstreamed sustainability as a primary goal. It called for greater attention to issues of forests, water and land resources and incorporation of environmental aspects into the national accounting system. These priorities have also been reflected in the Three-Year Action Agenda (2018-2020), in which promoting sustainability remains to be one of the key elements. India also has an extensive body of constitutional provisions, laws and policies to promote conservation and sustainable use of biodiversity and natural (including marine) resources. The Indian Constitution clearly assigns responsibilities between the Union and State Governments on various subjects. India is a signatory to various international conventions and treaties related to environmental protection and has also taken numerous initiatives towards their implementation.

Some of the relevant national policies are the National Environmental Policy 2006, National Biodiversity Action Plan 2008 (and 2014 addendum), National Wildlife Action Plan 2017-2031, National Water Policy 2012; and relevant laws include the Environment Protection Act, 1986 (and the Coastal Regulation Zone Notification 2011 and amendments thereof, the Wetlands (Conservation and Management) Rules, 2017 issued under the provisions of the Act), the Indian Forest Act, 1927, the Indian Wildlife (Protection) Act, 1972, the Indian Fisheries Act, 1897, the Water (Prevention and Control of Pollution) Act, 1974, the Biological Diversity Act, 2002, and the Coastal Aquaculture Authority Act, 2005.

India is a key member in the Indian Ocean Rim Association (IORA), an intergovernmental organization comprising of 21 member states and 9 dialogue nations aimed in strengthening regional cooperation and sustainable development within the Indian Ocean region. The IORA blue economy dialogue held in Goa in Aug 2015 passed the Goa declaration stressing the need to identify the thrust areas of the blue economy.

The blue economy, which consists of economic activities dependent on marine and coastal resources and processes, comprises 4.1% of India's economy, said Secretary of Ministry of Earth Sciences, Government of India. It has placed the Blue Economy high on its agenda for economic growth. The essential objective is to develop Blue Economy through a robust regulatory framework which contributes to sustainable use of existing natural resources. The Indian government encourages proactive and facilitative governance which supports job creation, encourages innovation, and provides opportunities for knowledge-based businesses in key maritime sectors, within the framework of the nation's pursuit of Sustainable Development Goals (SDGs). In essence, a clear national vision and a road map for growth that ushers the "Blue Revolution" are now becoming visible. Sustainable development of the Blue Economy will be an integral part of the "Blue Revolution." India's strategy should be further refined and adopted through solid synergy among a variety of stakeholders – business, industry, academia, experts and civil society, with the government providing the over-all guidance, support and sustenance.

With its geostrategic position in and critical dependence on the Indian Ocean, India has been leading the Blue Economy discourse at the highest level, with a greater focus on the Indian Ocean region and its linkages to the sustainable development of India, including 'inland' industries and markets. The Modi government has made various approaches to tap the nation's waterways, both inland, and marine, in a consolidated matter. The Sagarmala Program, which was launched in 2015, is an approach to develop inland waterways and create a port-centered development and coastal community developments. The Deep Ocean Mission, on the other hand, aims to explore the 75,000 sq. km sea bed that comes under India's purview. Among the other suggestions that the FICCI[6] report makes are to create a blue economy atlas of the country as a business tool, create blue and green bonds, develop marine tourism infrastructure, adopt measures to reduce marine litter and create a blue economy policy unit under the MEA for dialogues and cooperation with other like-minded nations.

In 2018, the National Institution of Transforming India (NITI), the Indian Government's apex policy think-tank conducted discussions with all the stakeholders to identify the potential areas of the blue economy which are to be placed on the national strategic focus and to formulate policies for blue growth. Several initiatives have been initiated the Ministry of Environment & Forests and Climate Change (MoEF & CC), Ministry of Earth Sciences (MoES), Ministry of Shipping and other organizations. They include the Deep Ocean Mission, Integrated Coastal Zone Management, Sagarmala, Sagar and Mausam programs, which focus on the deep ocean resource exploration, marine spatial planning, port development, maritime security and improving livelihood opportunities for coastal communities. In order to synergize the multi-ministry efforts which are engaged in silos, seven working groups are formed by the Government of India to formulate robust recommendations to capture the huge potential and opportunities in this sector. Thus sustainable, integrated, inclusive and people centric policy for Blue Economy is being evolved by India and the policy statement states that "The blue economy refers to exploring and optimizing the potential of the oceans and seas which are under India's legal jurisdiction for socioeconomic development while preserving the health of the oceans".

Appropriate spatial planning and environmental management of coastal areas are essential to maintain a balance of environmental quality and blue economy development, whereas unscientific planning practices lead to the degradation of coastal ecosystems. The applicable Coastal Regulation Zone (CRZ 1991 to 2018) guidelines are currently being used in India for management of the coast and nearshore areas, and a.o stipulate the development of Coastal Zone Management Plans (CZMP). However, these guidelines are difficult to implement or less effective as they do not take into account the variation of physical

and biological characteristics of the coast. The alternative to this approach is a quantitative land classification in coastal areas based on geospatial and multiple-criteria decision making techniques involving natural capital, biodiversity and ecosystem services key to the sustainability of the coast. As such the GEF project incremental support towards SEEA-NES-GIDSS system is an essential first steps towards application of NC-based metrics for improved spatial allocation, management planning and the protection of NC and biodiversity resources. Additionally, the coastal State Government or Union territory are required to prepare the Coastal Zone Management Plans under the CRZ regulation in 1:25,000 scale map, identifying and classifying the coastal management zone based on detailed criteria stipulated in the CRZ notification (2011 and 2018), which are very much biophysical and hazard risk based (tides, waves, highwater line, saltwater line etc), rather than NC and ecosystem services based. A positive aspect of the CZMP is their requirement to regulate all developmental activities listed in the CRZ regulation by the applicable State Government, Union Territory Administration, the local authority or the concerned coastal zone management authority within the framework of such approved CZMP. The coastal State Government or Union territory are allowed to consult or contract an appropriate specialized agency in the research and development of the CZMP such as the recently established National Centre for Sustainable Coastal Management (NCSCM, in Chennai) and possibly the ENVIS (NES-GRIDSS) under the MoEFCC. The CZMPs is usually valid for 5 years, and State Government or the Union territory may consider undertaking revision of the maps following that period and based on the procedures stated in the CRZ. It is suggested that the GEF project would build upon existing CRMP (to be confirmed at PPG) and prepare more detailed and focused Spatial Plans incorporating NC stock, flows and values, based on both the use of SEEA-compliant NES-GRIDSS data nodes as well as the District-level Blue Economy Strategies.

Environmental Impact Assessment regulations: Recognizing the need for sustainable development of ports and harbors – such as under the large Sagarmala Program, the MoEFCC, has made mandatory for the ports and harbors development to obtain environmental clearance under the provisions of EIA Notification, 2006 as amended from time to time and CRZ Notification, 2019. These projects are also required to obtain environmental permits under the provisions of the Water (P & CP) Act, 1974 / Air (P&CP) Act, 1981 and Hazardous Waste Authorization under the provision of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016, and Wetlands (Conservation and Management) Rules, 2017 as amended from time to time. The ports and harbors development or expansion projects require prior environmental clearance from MoEFCC and categorize the projects or activities for obtaining the Environmental Clearance (EC) in to two- category A and category B. For the ports and harbours, capacity handling more than 500 million tons per annum excluding fishing harbors comes in category A and those less than 500 million tons per annum falls under category B. For the category A projects the central government in the MoEFCC will provide the environmental clearance and for the category B the State Level Environment Impact Assessment Authority (SEIAA) is involved in the process (MoEFCC, 2006).

The EIA process consists of three basic elements: (a) preparation of the EIA report as well as Environmental Management Plan (EMP), from scoping to documentation, (b) review and decision-making and (c) post-project monitoring (Paliwal, 2006). Moreover, the Environmental Clearance process (EC) consists of four stages, Screening, Scoping, Public Consultation, and Appraisal carried by the Expert Appraisal Committees (EACs) at the Central Government and the State Expert Appraisal Committees (SEACs) at the State or the Union territory level (MOEF, 2006). Appraisal involves the comprehensive study of all the documents like final EIA report, public hearing proceedings, Environmental Management Plan, risk assessment and emergency preparedness plan by the Expert Appraisal Committee or State Level Expert for the approval or rejection of environmental clearance. Post project monitoring follows after the completion of the project in a periodical fashion, yearly and six-monthly.

The EIA procedures are a necessary regulatory compliance measure introduced by the MoEFCC to ensure that adverse environmental impacts by development projects are prevented or mitigated. A more proactive approach however is to allow developmental projects to consider full range of ecosystem service values in proactive scenario planning, in order to take a comprehensive view of the investment, and opportunities for blending natural infrastructure with physical infrastructure to achieve cohesive development outcomes, as well as to better protect biodiversity and other natural capital. The present project seeks to augment the current EIA processes, which by themselves form the regulatory end of environmental compliance to proactive end of developmental planning, wherein development scenarios incorporate ecosystems as natural infrastructure within planning processes. The project will therefore open new vistas of proactive environmental behavior from project developers.

It has been observed and criticized nationally that the EIA procedures and steps are not always fully adhered to e.g. in the case of the Sagarmala project, specifically related to community usufruct and land-titles - and as indicated in the next section, the proper incorporation of full NC values and mitigation measures in the EIA or its Environmental Management Plans (EMP). This is both an environmental concern as well as an opportunity for GEF incremental support to achieve enhanced consideration, targets and incorporation of natural capital values. The project could develop detailed ToR's as guidance to sector investments programs such as the Sagarmala as well as the Rebuild Kerala Initiative teams regarding any need for adjustment in technical design, routing of transport infrastructure to reduce potential impact to critical NC sites, as well as making available enhanced SEEA-based data through the NES-GRIDSS nodes on the values of NC found in their territories – to enable Central Government and the State Expert Appraisal Committees (SEACs) at the State or the Union territory level to conduct the proper appraisal of the EIA and Environmental Management Programs. Additionally the development of, firstly the District Blue Economy Strategies, as well as secondly the Spatial Plans - targeting the two project sea-/ landscapes, by integrating NC values and development objectives, offers strong opportunity for the EIA to benefit by assessing investment plans and technical design against these NC-based planning documents.

One of the most significant recent legislative steps taken by the Government of India towards law enforcement to reduce environmental crime, has been the setting up of the National Green Tribunal (NGT). The NGT is a dedicated statutory environmental court with the mandate to deal with civil cases which have substantial relation to environment including NC and biodiversity. The NGT Act was passed by Parliament in 2010 and the Tribunal became functional on October, 18, 2010. In addition, the Supreme Court of India has also played a significant role in the conservation of biodiversity. Under Article 32 and Article 226, the Supreme Court and the High Court have played a proactive role in the conservation of biodiversity. In 2013, the Supreme Court of India set up a 'Green Bench' to deal with environmental issues replacing the existing Forest Bench. The jurisprudence on NC and biodiversity has been continuously evolving and becoming one of the significant issues in India.

1.1.3 Threats and Root Causes

The direct and indirect threats and root causes to the loss of biodiversity and blue NC, particularly in India economies, includes a high rate of human population growth and a high population density, increasing consumption, technological change-induced effects, economic activity and associated market failures and inadequate awareness of biodiversity values at the public and decision-making levels, in addition to a range of policy and institutional weaknesses, arising from an inadequate knowledge and capacity on NC values and decision-support to inform integrated policy-making, spatial planning, investment decisions and implementation of environmentally sustainable blue economy strategies. Specifically, key economic sectors in the coastal areas in India, such as infrastructure development, tourism, near-shore fisheries and water services sectors depend on multiple ecosystem services and benefits provided by the NC contained in natural and production landscapes/seascapes. However, critical NC and ecosystem services that these sectors depend on, including forest, marine and coastal ecosystems in India have been in continuing decline.

Relating to the Sagarmala Project, concerns have been raised related to the potential environment impacts of infrastructure development undertaken through the project on marine and coastal ecosystems, for example, due to coastal erosion, dredging and its impacts on seabed, as well as disturbance in the ocean current caused by the construction of breakwaters, with potential negative impacts to the livelihoods of traditional small fisher communities. At the heart of the concern is the fact that the coastline is important ecologically, socially and economically. An estimated 4 million people from traditional fishing communities live along the coastline and are dependent on near-shore fisheries for their livelihood and survival. The coastline is also an extremely dynamic entity that is made of multiple ecosystems, many of which are rare and threatened. It is a densely populated zone and vulnerable to storms, tidal surges, floods and the occasional tsunami. Any major intervention should be made only after serious consideration of the multi-faceted implications and a cost-benefit analysis that includes NC accounting[7].

Similarly, the Rebuild Kerala Initiative (see section 1.2 baseline analysis) considers a fragmented view of the Vembanad-Kol complex, and does not address the root cause of wetland degradation, which includes natural hydrological regime transformation, encroachment, pollution, invasive species, and resource use conflicts. While river basin level management, disaster risk reduction and environment protection have been identified as core components of the mission, the interconnections between wetlands loss and increasing water-mediated disaster risks has not been appropriately factored in. In several instances, the initiative actually concentrates new infrastructure such as roads and railways in environmentally fragile landscapes, such as Vembanad-Kol wetlands.

Furthermore, fishery-based industries, tourism and water services sectors depend on healthy NC including the ecosystem services provided by reefs, mangroves and seagrass meadows, but these ecosystems are under threat from a broad range of disturbances contributing to declines in fish and shellfish production and reduced revenues for local communities. Furthermore, in many cases, the benefits of these ecosystem services may be felt outside the perimeter of the specific landscape/seascape, and may even accrue to other actors. In view of these complex linkages and inter-relationships, it is essential to understand the overall impacts and distributional effects of land use decisions on the status of biodiversity and ecosystem services, in order to (a) achieve sustainable management of NC at the landscape/seascape level, and (b) to catalyze appropriate policy changes.

1.1.4 Fundamental Barriers preventing sustainable use and protection of biodiversity and NC

Limited integration of NC and adoption of SEEA standard framework into India's national and state policy, budgets and institutional mechanisms

Despite the existence of a national government structure and agencies with a mandate and an appropriate legislative base, the level of integration of NC considerations into India's national and state policy and budgeting processes remains low, and existing institutional mechanisms do not fully support such efforts (IPBES assessment 2018). One of the major challenges is the absence of systematic approaches to monitor NC and its contribution to key economic sectors, particularly through a System of National Accounts (SNA) that would integrate NC values, which has prevented national policy-making and budgeting processes to reflect dependencies and impacts of economic sectors on NC. As mentioned earlier, India has made some efforts in the field of NC accounting through various initiatives. However, the key involved and mandated ministries, including the Ministry of Statistics and Program Implementation (MoSPI), Ministry of Finance and Ministry of Environment, Forests and Climate Change, have not published any joint comprehensive policy strategy for advancing and mainstreaming the NC Accounting related efforts in India yet. This indicates that there is strong need for closer coordination and collaboration among key agencies involved in this field of work. New institutional arrangements are urgently needed to facilitate sharing of information provided by NC accounting across ministries, allowing a coherent budgeting/planning process. In particular, challenges were faced by previous related initiatives in sustaining efforts beyond the duration of the projects due to lack of clarity of roles of the agencies and other partners involved, lack of linkages to specific ongoing national policies or initiatives, as well as inadequate coordination between involved stakeholders. The proposed project is designed to address these key remaining challenges, by building on earlier NC accounting initiatives in India as described above.

Another challenge relates to the limited integration of NC information into the SNA and existing data and decision-support systems such as the National Environmental Survey (NES) – Grid-based Resource Information and Decision Support System (GRIDSS), as well as a lack of a systematic approach towards incorporating NC accounts into routine government indicators and reporting procedures, such as Green GDP and SDGs. GRIDSS is a major initiative of MoEF&CC, which provides an information management and decision-support system, to facilitate environmentally sustainable economic development by supporting decision making with robust, disaggregated environmental data. Currently, NES-GRIDSS has not been adapted to SEEA-EEA framework and as a result, the information provided by NES-GRIDSS has not reflected the status of NC nor has effectively contributed to undertaking analysis for improving spatial and economic planning and influencing investment decisions based on the information on the potential long-term implications of development and economic decisions on NC. Furthermore, currently, the status of NC is poorly understood, scarcely monitored, and there is urgent need to quantify and map the values of ecosystem services and incorporate them into the decision making process – specifically towards following a blue economic development path. ***In order to address this challenge, integrating NC information to NES-GRIDSS through adapting the SEEA-EEA framework is essential.***

Inadequate knowledge and capacity in integrating NC values into development planning and operations of key economic sectors and programs (such as investments under Karnataka Tourism Policy 2015 - 2020, Sagarmala and the Rebuild Kerala Initiative)

A second major challenge faced relates to limited knowledge, capacity and practical approaches that can be applied to support the integration of NC considerations into development planning and operations of key economic sectors including the infrastructure development agencies, private sector companies and financial institutions in India involved in the Sagarmala Investment Program. Infrastructure planning under e.g. the Sagarmala program as well as the Rebuild Kerala Initiative currently lacks long-term, landscape level focus and is generally reactive to one of a handful of projects at hand, thus failing to introduce procedures and measures to avoid, mitigate or offset their impacts to biodiversity and NC values, both on site of the actual investment as well as off-site. The Rebuild Kerala Initiative - whilst planning to invest in enhanced resilience to floods and environmental protection, adopts so far a fragmented view of the Vembanad-Kol wetland functions and ecological needs, and does not address the root cause of wetland-based NC degradation. It lacks to value and appropriately factor in the interconnections between wetlands NC and services loss and increasing water-mediated disaster risks. Additionally, the private and financial sectors in India have developed their own approaches to incorporate biodiversity and ecosystem protection measures into their operations and risk analysis processes; however, these are driven mainly by their reporting and CSR obligations, with only a secondary focus on incorporating the concept of NC and ecosystem services-based approaches in core operations. As a result, the extent of mainstreaming of NC considerations into infrastructure development, as well as corporate or financial institutions in India remains limited. Transforming the operations of these stakeholders to minimize potential negative impacts of their operations on NC will require a broader and more comprehensive approach to fully integrate NC values and considerations into risk analysis frameworks, core business models and investment decisions. Insufficient awareness of the linkages and dependencies of production and service sectors on NC, NC-associated investment risks, as well as limited (narrow) understanding within industry sectors of the concept of biodiversity and ecosystem services and their valuation (especially non-market values) is another key challenge that needs to be addressed. Furthermore, limited focus placed on national-level management of ecosystem services and biodiversity, as well as general lack of appropriate structures or incentives that support and promote the NC-based approaches into market-based finance mechanisms, and integrating the values of biodiversity is another key barrier to be addressed in India. ***In this regard, there is a clear need to promote multiple-scale adoption of sustainable development and/or best practices that efficiently and effectively incorporate NC considerations – specifically in the targeted coastal wetlands/watersheds/landscapes.***

A further challenge is presented in the limited availability of policy-focused ecosystem assessments and valuation studies, supported by scenario analysis, aiming at informing development and policy planning processes through scenario analyses for different mechanism-based options. Although the earlier initiative such as the TEEB India Initiative, mentioned earlier, undertook policy-oriented economic valuation studies, it was relatively modest in scale and not at the level where the tangible impacts in terms of changes in development planning and decision making processes can be realized. Furthermore, there is limited awareness in India in applying such tools in generating policy-relevant information and recommendations and to also influence development and sectoral planning processes. ***In this regard, targeted capacity building and technical support are required to enable practitioners in India to undertake and utilize NC Accounting, and apply a wide range of decision support tools such as integrated ecosystem services-based assessments and modeling programmes to map the quantity and values of ecosystem services and conduct scenario analysis to assist policy, spatial and economic planning processes.*** The GEF project as well as the UNEP TEEB team through e.g. the NCAVES project (see p.15) could greatly enhance and mitigate this by drawing on the technical knowledge, guidance documents and country-level partnership established, as well as the analysis specifically applied to Karnataka.

Lack of partnerships, awareness and acceptance of NC among key stakeholders to enable a blue economy growth model

In India, scientific knowledge and information on NC exists only within the scientific circle; there is no effective mechanism to share and disseminate such knowledge and information among policy-makers and practitioners in both public and private sectors. ***There is a clear need to establish a knowledge learning network that can foster partnerships and facilitate networking among policy-makers and practitioners, and through which globally-recognized best practice can be integrated into sectoral planning processes for sustainable blue economic growth outcomes.*** Furthermore, there is no national monitoring system in place – based on SEEA-indicators, to tracking implementation of NC-based planning and financing within public and private sector entities, as well as their impacts. It is also imperative to establish a system to monitor - with objectively verifiable data, the successful incorporation and benefits generated to NC including biodiversity through sector transformation and sustainable development of blue NC. The barriers above have allowed continuing and rapid loss of NC in India. Examples include loss of indigenous flora and fauna within agricultural production landscapes; ongoing diminution in water regulating services provided by forested watersheds, leading to rapidly seasonal changes; and a continuing drop in marine animal populations due to degradation of reefs and other nearshore habitats. Habitat degradation has also led to loss in eco-tourism opportunities and values.

The absence of a national incentive mechanism and national platforms to build trust as well as to improve security for both providers and beneficiaries of NC stock, flows and values, results in limited engagement with key stakeholders, especially the private sector. There is a clear need for an operational mechanism where all these stakeholders can participate, have access and benefit from dissemination and KM services to enable up-scaling of the enhanced integration of NC&BD objectives in sector operations and landscape planning and operations. Furthermore, there is limited practical experience with partnerships and collaborative efforts between universities, NGOs, local communities and the private sector to stimulate investments for informal and formal research, and sustainable utilization of resources. Besides, at the local level, limited involvement and knowledge on policies and procedures among stakeholders has prevented their mutually beneficial engagement in research, the protection and utilization of NC biological resources. Particularly limited is practical experience at the local level in formulating partnerships between communities who are local stewards of biodiversity resources and institutions that are involved in investigating and identifying efforts that are guided by local operational procedures on a sustainable blue economy.

1.2. Baseline scenario and any associated baseline projects

The following baseline projects will provide a strong basis for implementing the proposed project:

National Environmental Survey (NES) – Grid-based Resource Information and Decision Support System (GRIDSS)

This major baseline program being implemented by MoEF&CC contributes to the Ministry's goal of facilitating environmentally sustainable economic development by providing a crucial input to decision making, namely, robust, disaggregated environmental data. These are technical, spatial, and temporal data on the environmental media, such as air, water (surface and ground), soil, biota (plants and animals) etc., covering parameters like waste, pollution, hazardous substances, fauna and flora, terrain, species conservation. A necessary (but not sufficient) condition for environmentally sustainable economic development is that environmental data should be easily accessible, easy to use and efficiently managed. Currently, there is no such database and environmental data exists in different forms and is maintained in different Ministries/Departments/Offices at the Centre as well as by the States/Union Territories. However, in most cases there is no convergence.

There is also dearth of disaggregated environmental data in crucial areas. In view of these challenges, NES-GRIDSS aims to facilitate access to environmental data to empower decision making in environment sector at all levels of government. NES-GRIDSS also supports the availability and access to data at a disaggregated district level. The Ministry is deploying its existing ENVIS (Environmental Information System) network to implement NES-GRIDSS^[8]. In order to ascertain the status of environment at district level, the ENVIS Hubs/RPs will conduct the survey to fill in data gaps in respect of various environmental parameters such as emission inventory and pollution including soil quality; waste - solid, hazardous bio-medical, e-waste & construction and demolition; forest and wildlife; flora and fauna; wetlands, lakes, rivers & other water bodies; public health, etc., through a grid-based approach. The grids would measure 9×9 km or any other suitable measurement depending on the requirement for effective survey. Based on the physiological conditions, a sample of grids (around 6-12 grids per district, depending on the size of the district) would be taken and baseline data would be collected from secondary sources, and if needed through a primary survey.

Due to its virtue of creating consistent and expert-vetted datasets available in a spatially explicit national framework, NES-GRIDSS provides a great opportunity to not only inform what data is being collected but also apply the database to create NC accounts at district level. These programs and initiatives being undertaken through the NES-GRIDSS and ENVIS provide a strong basis for expanding the data system towards the NC-based system. The NES survey is being launched in 2018-19, and all the districts in the country are expected to be surveyed in a period of 3-4 years. The total 2018-2019 budget on the ENVIS is 3.38 million USD (Rs. 24 crore) out of which the Green Skills Development Programme is also funded. A total 55 Districts have been selected by 62 ENVIS Hubs in the first phase of NES-GRIDSS. Initially, it is proposed to showcase specific parameters in selected districts located in the bio-geographic regions of the country in the Stakeholders Workshop after which primary survey work is expected to commence. Details of the districts selected by the respective ENVIS Hub/RP are at Annex D.

Sagarmala Project

This second key baseline program is a strategic ₹8.5 trillion (US\$120 billion) investment initiative of the Government of India to promote the marine sector of the economy through the development of ports and logistics. It entails setting up of new mega ports, modernization of India's existing ports, development of 14 Coastal Employment Zones (CEZs) and Coastal Employment Units (CEUs), enhancement of port connectivity via road, rail, multi-modal logistics parks, pipelines and waterways and promote coastal community development, resulting in boosting merchandise exports by US\$110 billion, and generation of around 10,000,000 direct and indirect jobs. It is the flagship programme of the Ministry of Shipping to promote port-led development in the country through harnessing India's long coastline and its 14,500 km of potentially navigable waterways and strategic location on key international maritime trade routes. One additional component of the project is development of coastal communities through marine sector related activities like fisheries, maritime tourism and corresponding skill development. As mentioned earlier, however, concerns have been raised related to the potential environment impacts of the project on marine and coastal ecosystems, for example, due to coastal erosion, dredging and its impacts on seabed, as well as disturbance in the ocean current caused by the construction of breakwaters, with potential negative impacts to the livelihoods of traditional small fisher communities. Additionally, the plans for feeder roads, railways and other transport infrastructure would potentially strongly affect ecosystems, their services, protected areas and wildlife connectivity and other BD concerns in the sea- and coastal landscapes much beyond the actual harbor investments. It has been identified that enhanced spatial planning, scenario analysis of alternative development and consultations for alternative routing of the above-mentioned transport infrastructure would greatly reduce the externalities as well as biodiversity impacts of these investments planned, including through introduction of water and waste management. In view of these challenges, as mentioned earlier, one specific site potentially affected by the Sagamara Project has been identified in Karnataka (...) where the project will facilitate efforts towards ensuring sustainability and mitigating potential negative impacts on coastal and marine ecosystems, through applying NC-based decision support systems. Albeit the Sagamala program having experienced multiple delays, as well being challenged and adjusting its plans due to public and formal protests with regards reported lack of adherence to environment safeguards (Gujarat) or having much greater impact to the livelihood of local

communities than officially reported (Goa), the project is largely meeting and continuing its implementation. The India Union Budget of June 2019 has given prominence to infrastructure programs in Karnataka for connectivity, so as to enhance economic activity in the State, including through the Sagarmala and waterways projects, which can greatly benefit Uttara Kannada district. Under the Sagarmala project, outstanding work is remaining on Karwar port development and its connectivity network of roads and railways, as well as the coming years, Belekeri and Tadadi ports (the latter in the Aghanashini Estuary). However further consultation and analysis of project documentation needs to be conducted during the PPG with regards the detailed plans and timing of the Tadadi port and related transport network.

The Rebuild Kerala Initiative

Total planned budget US\$ 5 billion. Set up in the backdrop of 2018 Kerala floods, the mandate of Rebuild Kerala Initiative is to develop, coordinate, facilitate and monitor the Rebuild Kerala Development Programme (RKDP) through a participatory and inclusive process. The RKDP aims to “bring about a perceptible change in the lives and livelihoods of its citizens by adopting higher standards of infrastructure for recovery and reconstruction, and to build ecological and technical safeguards so that the restructured assets could better withstands floods in the future”. In the original planning and feasibility design towards implementation of the RKDP it is anticipated to take at least 5-7 years (up to 2026 for Water Resource Management works) through multiple funding schemes and fiscal mechanisms, with for Core Roads a time frame of 10 years^[9]. With the anticipated and already ongoing delays in its investment projects, there should be ample opportunity for collaboration the GEF project. The RKDP encompasses crosscutting and sector-based policy, regulatory and institutional actions as well as priority investment programs across 13 sectors (Disaster Risk Management, Environment, Water Resources Management, Water Supply, Sanitation, Urban, Roads and Bridges, Transportation, Agriculture, Animal Husbandry, Fisheries, Livelihoods and Land) that are critical for resilient and sustainable recovery and rebuilding of the State. It aims to catalyze rebuilding of Kerala in a way that addresses key drivers of floods and other natural disasters and climate change risks and strengthens preparedness against future disasters. Through the RKDP, the Government of Kerala aims to ensure a resilient recovery and development pathway for a ‘*Nava Keralam*’ (a Malayalam term for New Kerala). Though ambitious in nature, the initiative does not capitalize on nature based solutions and blended infrastructure approaches, for achieving water resilience, rather takes a more conventional infrastructure upgradation approach, and thereby at times, includes investment in ecologically fragile areas such as wetlands including Vembanad-Kol wetlands, which run counter to the ambition of the initiative. The initiative also does not factor in the potential impacts of the planned /under development North-South Semi-High Speed Corridor or ‘Thiruvananthapuram – Kasaragod Silver Line corridor’ which would cut across several high ecological value wetlands; and is a 530.6 km approved semi high-speed rail line connecting Thiruvananthapuram (Trivandrum) and Kasargod in Kerala, through 11 stations with an estimated cost of Rs. 63,941 crores. Although its alignment is largely east of the Vembanad-Kol wetlands, it would cut through much of the watershed and rivers, streams and marshes ecologically connected Vembanad-Kol wetlands. As such it is of concern to maintaining a healthy coastal hydrological system, protect its flood prevention and biodiversity values and services as well as to potentially affect the livelihood of local communities depending on these wetland services. On June 10 2020, the Kerala state government’s cabinet approved the line’s Detailed Project Report (DPR), basically fixing the trajectory. The project will be executed by Kerala Rail Development Corporation Limited (KRDCL or K-Rail), a Joint Venture between Government of Kerala and Ministry of Railways of the Government of India set up to augment railway infrastructure within Kerala.

Integrated Coastal Zone Management (ICZM) Project

Total budget US\$286 million. The objective of this World Bank funded project – which will be completed in 2020, is to assist in building capacity for implementation of a comprehensive coastal management approach and piloting the ICZM approach in states of Gujarat, Odisha and West Bengal. The project’s multi-sectoral and integrated approach represents a paradigm shift from the traditional sector-wise management of coastal resources where numerous institutional, legal, economic and planning frameworks worked in isolation, at times with conflicting aims and outputs. The project puts equal

emphasis on conservation of coastal and marine resources, pollution management, and improving livelihood opportunities for coastal communities. Integrated management of the coastal and marine areas in general and the project in particular has long lasting benefits. Development of economic infrastructure in the coastal zone, along with protection of ecological and cultural landscapes and traditional rights is crucial to India's sustainable growth and development – such as to be supported by the GEF project, will benefit much from the WB ICZM project national project structures established, its national plans generated, and its investments piloted.

Specifically, the first project component being national ICZM capacity building. The national component includes mapping, delineation and demarcation, as required, of the ecologically sensitive areas (ESAs), also all along the mainland coast of India; capacity building of the MoEFCC as the secretariat for the National Coastal Zone Management Authority (NCZMA), and setting up and operationalization of the new National Center for Sustainable Coastal Management. The project will build upon this and collaborate with the National Center for Coastal Zone Management, to identify specific data sets, lessons and ICZM Plans for the two GEF targeted states which consists key baseline to be assessed during PPG for the identification of optimum ways towards the development of the Blue Economy Strategies as well as spatial planning related Districts in the two GEF targeted coastal sea-/landscapes, the type of sustainable income and investments to be considered as well as possible collaborating centers and experts.

The second WB component is the piloting ICZM approaches in the three states. This component supports capacity building of the state level agencies and institutions, including preparation of an ICZM plans, and conducting pilot investments. This is very relevant as a methodological basis for the GEF project towards developing Blue Economy Strategies and conducting Spatial Planning. As an example: the preparation and adoption of an ICZM Plan for the Gulf of Kutch in Gujarat which has been conducted as a process of regular revolving stakeholder dialogue, supported by scientific and technical inputs related to the natural capital and coastal and marine processes, as well as potential coastal hazards and risks to coastal communities – provides the GEF project with useful example of the approach to spatial planning in India. Additionally, pilot investments in Kutch included (a) the conservation and protection of coastal resources including mangrove and coastal shelterbelt plantation, coral reef regeneration, and establishment of a marine resource information and conservation center; and (b) livelihood security of coastal communities including ecotourism and related livelihood improvement activities in the coastal villages within and outside forest areas. In summary, the GEF incremental support nationally as well as in Karnataka and Kerala States, will build upon these WB ICZM project methods and institutional structures already established, by particularly incorporating the SEEA approach in the local NES-GRDSS data centers, based on the already available data from the ICZM project, to translate and expand the ICZM planning approach into wider Blue Economy Strategies for the targeted GEF Districts and sea-/landscapes, as well as its spatial dimension through the Spatial Plans. It will also work with the secretariat for the National Coastal Zone Management Authority (NCZMA) and other national institutions, to review and improve on the design and operations of both the Sagarmala project as well as the Rebuild Kerala Initiative (e.g. EIA, routing of infrastructure, introducing nature based solutions, protection of key NC and BD resources), and basing the other GEF project outputs such as e.g. 1.2.2 Tourism and infrastructure sector review report and round tables, and 2.1.4 Public-private partnership and NC Protocols adopted by 2 corporations, on the partnership, data centers, pilot investment and financing mechanisms, as well as capacity established through the ICM Project – applied to specifically the two project sea-/landscapes, corporations and affected communities.

Green Skill Development Programme (GSDP)

To undertake the nationwide Environment Survey under the NES-GRIDSS initiative, enormous manpower would be required. Therefore, utilizing the vast network and expertise of ENVIS Hubs/RPs, the Ministry has also taken up an initiative for skill development in the biodiversity and environment and forest sector to enable India's youth to get gainful employment and/or self-employment, called the Green Skill Development Programme (approximate national budget of USD 16.5 million over 5 years). The program endeavors to develop a green skilled workforce, having technical knowledge and commitment to sustainable development, which will help in the attainment of National Biodiversity Targets (NBTs), Nationally Determined Contributions (INDCs) and

Sustainable Development Goals (SDGs). GSDP will work in conjunction with NES-GRIDSS to implement the latter. Candidates successfully completing the GSDP would be engaged in survey of grids for collection of information on various environmental parameters. Wherever feasible, college and university students will also be encouraged to carry out survey of the grids. This activity can be taken up by students during their specified internship period or long holidays and can fulfill the mandatory credit/internship requirements.

This is another baseline program that the proposed project will leverage apart from NES-GRIDSS, Sagarmala and Rebuild Kerala Initiative. There could be several pathways through which synergies can be identified and enhanced with GSDP for mainstreaming biodiversity through NC accounting. Some of the potential opportunities include developing a skilled workforce with niche skills of collecting data and analyzing them to develop NC accounts for districts, developing skills to conduct valuation of ecosystem services on a case-by-case basis as required, developing skills that can support infrastructure project developers in finding ways to thinking about more proactive and NC responsible siting approaches, among several others

Initiatives on NC Accounting

Related to NC valuation and accounting, efforts have been made in India in undertaking environmental-economic accounting. For example, the Ministry of Statistics and Program Implementation (MoSPI) has carried out pilot studies on the System of Environmental and Economic Accounting (SEEA) type of accounts, though these pilot initiatives have not led to regular production of NC accounts. The Economics of Ecosystems and Biodiversity (TEEB) India Initiative has also produced twelve specific case studies with economic valuation, responding to specific policy questions. Building on these earlier initiatives, since 2017, the United Nations Statistics Division (UNSD) and UN Environment have initiated an EU-funded project on NC Accounting and Valuation of Ecosystem Services (NCAVES) project) that covers India as one of the pilot countries. The Central Statistics Office (CSO- MoSPI) has been playing a leading role in implementing this project. An interdepartmental technical working group, consisting of a wide range of stakeholders in the environmental domain (including MoSPI, MoEFCC, DoLR, NRSC; FSI; Department of water resources; UNDP/RC; GIZ; etc.) have been developed to oversee the implementation of the project. To date CSO has compiled various types of ecosystem accounts at the national and (sub) national level that was featured in their Environment Statistics Publication (October 2019)[\[10\]](#).

CSO has also established a subgroup on water quality from the newly established Ministry of Jal Shakti (which combines the former Ministry of Water Resources and of Drinking Water), which will be of good use to the GEF project where water resource protection and NC accounting comes in. The subgroup has decided to use the SEEA Water as its Framework, and prepare a publication with results for selected regions on water quality accounts (both monthly and annual). Additionally, the Centre for Ecological Sciences, Indian Institute of Science (IISc) in Bangalore has been contracted by UN Environment to value ecosystem services in at least eight districts in Karnataka State Province in connection with the policy scenario analysis work. The following ecosystem services will be included: food provisioning, raw material provisioning, fresh-water provisioning, medicinal resources provisioning, carbon sequestration, local air quality, soil erosion prevention, pollination, tourism, and aesthetic value; and involve the districts Mysore, Shimoga, Belgaum, Chamrajnagara, Bangalore urban, Tumkur, Uttara Kannada, and Davanegere. Also, as part of the NCAVES project, UNEP is leading development of technical guidance documents on i) valuation of ecosystem services in the context of SEEA-EEA, and ii) the use of SEEA-EEA accounts in policy scenario analysis. Although the scale of funding that has been made available to the project from the EU is relatively modest (7 million Euro covering five countries including India), this project will build a strong basis for further efforts under the proposed GEF project, i.e. the tools and guidance that can be applied in the analysis of impacts on natural capital at the selected sites in Karnataka and Kerala, and more widely.

1.3. Proposed alternative scenario with a brief description of expected outcomes and components of the project

The objective of the project is “To enhance biodiversity conservation and environmental sustainability of critical coastal landscapes in India by integrating natural capital and ecosystem services values in District-level blue economy strategy and spatial planning processes, and coastal sector operations”. The project targets mitigation of the main barriers to achieve the project objective (i) Lack of capacity, technology and KM with the national ENVIS system/NES-GRIDSS nodes to become the national core data system at District level, to enable better mainstreaming of NC and biodiversity conservation principles in District and sector plans/operations through SEEA-based NCA; (ii) Limited integration of NCA and SEEA Framework into India’s national and District blue economy planning, implementation, and reporting; (iii) Insufficient awareness of the linkages and dependencies of infrastructure and tourism sectors on NC dependencies, impacts and business risks; (iv) Inadequate capacity and application towards integrating NC values into design, finance/development and operations of key economic sectors and District programs to enable a blue economic growth path.

Under the alternative scenario, the project targets blue economic growth and enhanced mainstreaming the protection of biodiversity and natural capital resources in coastal sea-/landscapes and sectors at District level, through recognition by both public and private actors of the ‘externalities’ to NC of economic development, as well as quantifying and integrating the NC dependencies, impact and benefits of protection in the planning, green investments and operations of one Sagarmala investment and one Rebuild Kerala Development Programme sites, and related infrastructure, tourism and fisheries development. This will be leveraged at the district level through expanding the data systems, analytical capacity and applications of SEEA-based NCA through the national system of NES-GRIDSS and Green Skills development initiatives under implementation by MoEF&CC of the Government of India, and specifically applying these to improved strategizing for blue economic growth, spatial planning, green investments public and private entities in the infrastructure, tourism and fisheries sectors, and specifically improved environmental operations under the Sagarmala Investment program and Rebuild Kerala Development Programme over an area of 1,7 million ha of improved landscape management, and benefitting 3 existing and proposed Protected Areas (total of 249,066 ha) by safeguarding NC, biodiversity and ecosystem services key to ecological integrity of these landscapes/river basins, as well as (external) threat reduction related to land-use allocation, potential impacts from investments and operations of sectors.

A draft Theory of Change has been provided in **Annex E**, including the stated Linkages and Strategic Assumptions.

The project’s three project component interventions are:

Component 1: National system support for blue economic growth model incorporating NC values

Under *Outcome 1.1* of the component, GEF incremental support will establish an inter-agency NC accounting National Working Group (NWG; Output 1.1.1) to consultatively develop a coherent and consistent national framework for NC accounting. This will guide the agreement and optimal methodology towards upgrading and expanding the functionality of the national network of the NES-GRIDSS^[11] system in compliance with the SEEA framework – specifically catering for coastal and marine NC and related sectors; as well as the integration of NC information into the System of National Accounts (SNA). It will prepare a short-term roadmap for the first phase implementation of the national framework for NC accounting, agree on mandates and roles of participating agencies, as well as assess options to finance the implementation of the national framework for NC accounting. To provide an authoritative basis for policy recommendations, project Output 1.1.2 will conduct a comprehensive policy-oriented analysis and the development and agreement on a position paper towards the system linkage of NC accounts and use of SEEA-based indicators with routine government reporting procedures – specifically towards Green GDP (contributing to output 2.1.2). Under *Outcome 1.2*, the project will provide technical advisory services and institutional support to modify and expand the GRIDSS system (output 1.2.1) to meet the SEEA-Experimental Ecosystem Accounting framework – to enable its data systems, mapping and analytical modules to do (spatial & economic) scenario analysis. At the request of the Ministry to build upon their existing baseline programs and budget, as well as to conduct pilot testing through their enhanced capacity and expanded data system, specific applications will be tested under 1.2.2 and 1.2.3 led by the Ministry and applied to the two targeted coastal Districts of most concern to the two project sea-/landscape sites in Karnataka and Kerala States for directing improved environmental planning and investments in the two targeted sectors (transport infrastructure, and tourism). This will help introduce measures to avoid or mitigate unnecessary loss and impact to NC, its services as

well as to meet selected blue economic development strategies. It will also support the launch and expansion of the SEEA-EEA compliant GRIDSS in 4 representative coastal Districts covered under output 2.1.1. Specifically for the purpose of the project, during the Project Preparation Grant, the 12 targeted districts (4 under 2.1.1 and 8 under 3.2.2) would be selected from the list of districts given in Annex D, based on stakeholder consultations and taking into account government priorities, the potential for maximizing global environmental benefits as well as project sustainability outcomes.

Next it will conduct sector roundtables (output 1.2.2) with representatives of the two targeted sectors – tourism and infrastructure (spec. transport and water works) at state or district level to discuss and agree on the outcomes of NC assessment and valuation studies regarding inter-dependencies and NC-based business risk with the transport infrastructure development and tourism sectors, including specifically, highlighting the adverse environmental implications and potential consequences of policy failures in; but also importantly identifying opportunities to move towards a more Blue Economy growth and investment path in the targeted sea-/landscapes under the selected Investment sites. The sector analysis will specifically look into the risks as well as opportunities related to COVID19, especially how the integration of NC in sector planning, investments and operations can contribute to green recovery approach in the project landscapes. The project would closely work together with the Sagarmala and Rebuild Kerala Initiative planners and financing institutions to see how NC objectives can be much better built in their decision making, investments and operations, including related to COVID green recovery. This will include assessing the feasibility of a suite of NC-friendly market-based instruments, credit- seed funding & loan facilities, and explore partnership and financing with these finance facilities for these sectors and associated investments towards blue economic activities. Subsequently, output 1.2.3 will explore suitable options for State and District-level government budgeting and fiscal measure in support of a Blue/Green Growth path through maintaining, restoring and protecting biodiversity and other natural capital; first of all by building on the work conducted by the BioFIN project, including possibly preparation towards Ecological Fiscal Transfers, which is one of the finance solutions suggested in the Biodiversity Finance Plan for India, developed through BioFIN initiative. While India's experience in applying Ecological Fiscal Transfers have focused on the forest sector, the Biodiversity Finance Plan recognizes the need for making Ecological Fiscal Transfers more comprehensive, by covering other areas including coastal ecosystems, Protected Areas and Ecologically Sensitive Areas. Under the Finance Plan, Ecological Fiscal Transfers is categorized as an innovative solution with relatively limited experience, but that the instrument is suitable for all thematic areas of NBAP, in particular, conservation and restoration of ecosystems, afforestation, etc. The Biodiversity Finance Plan also recognizes the Ecological Fiscal Transfers, together with other financial instruments suggested in the Biodiversity Finance Plan, such as Environment Damages Fund, which suggested options will be further analyzed and discussed with the mandated agencies such as the Ministry of Finance, through output 1.2.3. Furthermore, the expanded SEEA-based functionality of the GRIDSS system, including NC-specific indicators will be used for performance monitoring of Green Growth in the districts/Sagarmala sites. It will also involve the capacity building towards enhanced government support for green budget allocations through e.g. high-level fora and meetings with the Ministry of Finance and related agencies. It will also support the replication of pilot National Environment Survey cum Grid-based Resource Information and Decision Support System (NES-GRIDSS) in 2 representative coastal districts.

Component 2: Integration of NC objectives in planning and development of District Blue Economy and sector operations (tourism and infrastructure development)

Under **Outcome 2.1**, GEF incremental support will support the integration of NC values, objectives and targets at the blue economy development planning and operations in selected sectors, including tourism, transport infrastructure, near-shore fisheries and water resource services, in a total of 4 coastal Districts, including the 2 covered under Component 1.

Core towards enabling the application of SEEA assessment and accounting to local government and sector planning and operations, is the support under output 2.1.1. towards upgrading the NES-GRIDSS system in four Districts (which are also party of the ENVIS information system) as well as applying these to the investment plans under the Sagarmala, the Rebuild Kerala Mission baseline programs, and others to be identified during PPG, based on analysis of other NC-sensitive development sectors in the two States. This will be achieved by upscaling the model of SEEA-EEA compliant GRIDSS system agreed under

Component 1 through institutional development; and use the data and analysis capacity (e.g. by running economic development scenario analysis towards the incorporation of NC values and targets) and preparation of three (3) District Blue Economy (Development) Strategies (2.1.1). The District Blue Economy Strategies would be developed through Technical Assistance, series of consultations and reviews with government, CSO and lead industry players as well as a formal process to get government endorsement. The Strategies will particularly focus on hydrological services in both wetlands and their river basins, and set the principles, targets, partnership and suggested operational and financial mechanisms for its implementation. These Strategies will also deal with water resources protection through waste and chemical pollution management (principles, targets and suggested operational programs) from industrial, tourism and other similar investments planned. Additionally, the Strategies will zoom in on the need for and opportunities related to nature-based solutions, green recovery related to COVID impacts, as well as enhancing the ecological (and related socio-economic) resilience in the Districts.

Whilst the Strategies are meant as normative and District policy documents these would be followed by and enable a process of improved spatial planning in the Districts (output 2.1.3) – specifically zooming in on the targeted river basins and their ecological integrity and biodiversity values and conservation, as well as related sector investments of the Sagarmala and Rebuild Kerala Initiative Program. It is expected that whilst the project may conduct a reconnaissance level (small-scale) mapping for the entire 1.7 million hectares in the two targeted river basins, the actual spatial plans will zoom in on a maximum of one-third of this area and use a larger mapping scale of between 25,000 to 50,000 where resources allow. The spatial planning process would benefit both from the enhanced data and analytical capacity of the NES-GRIDSS data nodes, guidance captured in the Blue Economy Strategies, as well as would build upon State Coastal Resources Management Plans (CRMP -where existing; to be confirmed at PPG; see section 1.1.2 on policy baseline) and used to prepare detailed Spatial Plans -incorporating NC stock, flows and values; which could also lead to the revised and optimum routing and location of transport infrastructure (e.g. harbours, cargo transfer facilities, feeder roads and railways), enhanced spatial safeguards to protect critical ecosystems, protected areas and ecosystem services – specifically hydrological services, as well as applying sector strategies and targets for reduced environmental impacts and the costs of their externalities to key biodiversity and other natural capital in the two sea-/landscapes as assessed under the baseline programs and scenario.

Under output 2.1.2 it also envisages strengthening of the Environmental Information System (ENVIS) of MoEF&CC with regards use of SEEA-based indicators; which in turn would be applied to develop one Green GDP report for one selected State, based on the already 30 operational District GRIDSS nodes.

Furthermore, guidance, targets and suggested operational modalities captured in the agreed Strategies would be used as basis for (i) the already discussed spatial planning (2.1.3), and (ii) the development and adoption of Natural Capital Protocols by two companies involved in the Sagarmala, the Rebuild Kerala landscapes (and other major sector development programs to be selected during PPG)) under output 2.1.4. The Natural Capital Protocol – guided by the NC Coalition, is a decision-making framework that enables organizations to identify, measure and value their direct and indirect impacts and dependencies on natural capital. The Protocol responds offers an internationally standardized framework for the identification, measurement, and valuation of impacts and dependencies on natural capital in order to inform organizational decisions. The project incremental support will build capacity of the partnering companies and State government departments to apply the 'Natural Capital Protocol Toolkit', developed by the World Business Council for Sustainable Development (WBCSD), which complements and facilitate business uptake of the Natural Capital Protocol and sector guides by consolidating the wealth of tools, methodologies and approaches available for natural capital measurement and valuation.

National Sagarmala Program as well as the Rebuild Kerala collaboration will be strengthened and GEF incremental support will be provided with the main goal to improve design, optimise routing of infrastructure and reduce potential impact of its infrastructure investments to NC, key biodiversity and ecosystem services through NC-based reviews, consultations, and technical input on adjustments and safeguards – as applicable to the Sagarmala and Rebuild Kerala programs (consisting as stated in the baseline of multiple investment packages). It is suggested that the PPG will determine the optimum process and partnership for this as well as optimum phase in these two baseline programs, and other NC-sensitive development sectors for best results. Two likely mechanisms for consideration are (i) to review and revise feasibility design studies against both the Coastal Zone Management Plans (State level), as well as the project-sponsored District Blue Economy Strategies, as well as its NC-based Spatial Plans, and (ii) collaboration with the Sagarmala Program and Rebuild

Kerala Initiative teams in the development or appraisal of detailed ToR for the applicable EIA procedures. Both mechanisms would use the enhanced SEE-based data sets, mapping- and analytical capacity of the District NES-GRIDSS data nodes for input, preferably in collaboration with the newly established MoEFCC - National Centre for Sustainable Coastal Management (NCSCM), on aspects of appraisal studies and research to provide guidance to the Sagarmala design teams regarding any need for adjustments. Additionally, the development of firstly the District Blue Economy Strategies as well as secondly the Spatial Plans - targeting the related Districts as well as targeted river basins, by integrating NC values and development objectives, offers strong opportunity for the EIA to benefit by assessing investment plans and technical design against these NC-based planning documents.

Next, based on the suggested blue economy strategies, needed mitigations measures, as well as blue economic development opportunities identified, Public Private Partnership will be pursued. Specifically it will identify government and corporate opportunities for more sustainable/green private sector operations as well as green skills staff development (co-financed through the Green Skills development Program of the Ministry of Environment, Forest and Climate Change) in the field of tourism and small-scale fisheries, to enable the Blue Economy transformation and mitigation of the identified key drivers – water pollution, habitat loss and degradation, and unsustainable operations.

Given two existing and one proposed Protected Areas are part of the targeted river basins, both the Blue Economy Strategies (2.1.1) as well as the Spatial Plans (2.1.3) will apply NC-based criteria to avoid, reduce or mitigate potential impacts from Sagarmala, Rebuild Kerala Initiative and other (to be) selected NC-sensitive development programs to these key PAs; yet only those in the buffer zones outside of the PAs or those drivers in the wider sea-/landscapes of ecological influence to the integrity of the PAs (e.g. water services in the upstream watershed to the proposed RAMSAR site in the coastal Aghanashini Estuary). As such the project will not invest in any work inside the protected areas yet collaborate with the PA management teams where warranted to avoid or reduce external drivers of NC and BD losses. The project will provide incremental support to local government, park management authorities and others to improved planning, facilitate green investments and conduct (conflict) management in the protected area sea-/landscapes (see section on GEBs for more details on their globally significance for biodiversity conservation).

There will be strong engagements with the infrastructure agencies, private sector entities and financial institutions that are actively involved in the Sagarmala Investment Program as well as the Rebuild Kerala Initiative. This will be achieved through establishing collaborative mechanisms to facilitate public-private partnerships (2.1.4) and facilitating the integration of the emerging NC information into the corporate risk analyses through environmental footprint analysis, business planning and sustainability reporting – all captured in the proposed NC protocols and its process, to be adopted by at least two corporate partners. Implementation and investments towards the Blue Economy transformation in two project sea-/landscapes will be guided by the sector reviews (Comp 1), partnerships and business planning (via NC Protocol) to minimize negative impacts of their operations and investment decisions to NC. Through these public-private partnerships, spatial planning (2.1.3), as well as strategizing on blue economic investments needed (part of 2.1.1 Strategies) – such as particularly nature based solutions, mechanisms will be identified and agreed with key players of both the Sagarmala project/Rebuild Kerala Initiative, government as well as corporate players towards environmental sustainability of the land/seascape, protecting and improved management of critical coastal and near-shore habitats, as well measures to avoid or reduce water pollution, as well as enhance environment sustainability of near- and in-shore fisheries (an ecosystems/habitat approach) in the two targeted wetlands. Financing mechanisms, identified under Component 1 and to be tested under 2.1.4), to enable a blue economy model to the Sagarmala and Rebuild Kerala Initiative sites may include ecological fiscal transfers (District or State level), environmental offsets or voluntary compliance or certification programmes introduced with the infrastructure, tourism and fisheries sectors related to NC and their essential ecosystem services, eco-tax in the tourism sector, or similar that could generate earmarked funding for the protection of targeted key habitats or threat reduction to e.g. such as water resources and/or reduced pollution loads in watershed, the bufferzones or landscape corridors of Protected Areas, as well as other critical nearshore marine and coastal ecosystems. As a result of these activities, it is expected that there will be significant increase in or redirected financing for NC and biodiversity management in two selected sea-/landscapes.

The above approach, partnership as well as management and investment decisions would benefit improved management over a maximum of one-third (566,733 ha) of the total of 1,700,200 ha delineated in critical coastal wetland and river basin ecosystems, including watersheds feeding into the coastal river basins of the two sites. The project is also expected to strengthen the ecological landscape integrity and spatial integration of 3 existing and proposed protected areas (249,066 ha).

Component 3: National replication of NC accounting for blue economic growth in India

Under this component, GEF incremental support will support *Outcome 3.1*, which will enable scale-up and integration of the concept of NC in development planning through capacity building, knowledge sharing and networking for national and local partnership building. Specifically, this component includes development and implementation of a communication outreach and engagement strategy for partnership building towards adoption of NC accounting, based on e.g. the ‘policy-analysis’ on the benefit of developing SEEA-based indicators applied to routine government mechanisms such as Green GDP, as well as the ‘sector analysis and round tables’, both under Component 1, and blue economy strategy development and spatial planning under Component 2. These could also refer to parallel applications of NC valuation as conducted in India through the UNEP TEEB program. The project will facilitate an online knowledge sharing platform to facilitate networking among policy makers in India to exchange their knowledge and experiences in mainstreaming NC values into sectoral and spatial planning processes. The online knowledge will be developed and maintained to support and promote networking and exchange of experiences and success stories (output 3.1.2). This output will also involve the running of the project impact performance M&E system will provide quantitative benchmarks on the level of adoption of NCA. Specifically, it will quantify, and monitor NC results delivered as against the targets and indicators agreed for the 4 Districts under Component 2. It will also track changes in sectoral plans, budgets and operations that support NC. These KM and M&E activities will help – through the outreach program, to enhance understanding and support among policymakers, practitioners and the broader stakeholder community for the principles underpinning NC/ecosystem services and their practical implementation, and thus facilitate mainstreaming of NC values into sectoral and spatial planning processes.

On *Outcome 3.2*, adequate uptake of NC accounting and applications will require development of key skills and competencies among responsible personnel in the 12 targeted Districts (4 plus 8) applying SEEA-based NC assessment and accounting, methods of scenario analysis, other applications, including spatial planning, green budgeting and integrated natural resource management for sustainable development (3.2.1). The project would provide incremental support to the ongoing baseline programs by developing specific training materials on NC accounting and its applications for use by the Ministry. Additionally, upscaling the program implementation to an additional eight (8) coastal districts through implementation of NC-based NES-GRIDSS and ENVIS in coastal/marine districts through co-funding by the Green Skill Development Programme (3.2.2) or core financing by the Ministry NES-GRIDSS program.

1.4. Alignment with GEF focal area and/or Impact Program strategies ^[12]

BD Objective 1. Mainstream biodiversity across sectors as well as landscapes and seascapes ^[13]

The project is closely aligned with GEF 7- BD Objective 1-3 on “Mainstream biodiversity across sectors as well as landscapes and seascapes through NC Assessment and Accounting”, with its strong focus on enabling a sustainable blue economic development in coastal districts, by integrating NC values in spatial planning, coastal and marine sectors operations and decision support system. The information provided by the SEEA-based NC accounting system and a strengthened NES-GRIDSS network, established through the project will be utilized in improving spatial and economic planning, and investment decisions in two selected coastal and marine sectors (tourism and infrastructure development), contributing to the achievement of the selected blue economy strategies. In particular, the project will contribute towards mainstreaming biodiversity into land/seascape with its focused interventions in one of the Sagarmala development zones, under the major investment programme of the Government of India, and Rebuild Kerala Initiative of the Government of Kerala.

Specifically, the project will support the joint development of Spatial Plans among the states, districts and corporations involved in two investment sea-/landscapes, to ensure that key NC values and considerations are integrated into the operations and investment decisions of the targeted sectors involved in the programme. Through active engagement with the infrastructure agencies, private sector entities and financial institutions that are involved in the Sagarmala and Rebuild Kerala programs, the project will facilitate the integration of NC information into the corporate risk analyses, business plans and sustainability reporting of corporate partners. Furthermore, through the project, specific market-based mechanisms will be identified and applied to two NC-dependent sectors, which will result in enhanced environmental sustainability of the land/seascape, protection of critical coastal and near-shore habitats, measures to avoid or reduce water pollution, as well as enhanced environmental sustainability of near-shore fisheries (an ecosystems/habitat approach) in and around the targeted Sagarmala Investment zone. Through these activities, the project is expected to significantly increase financing for NC and biodiversity management activities in targeted Districts and sea-/landscapes.

1.5. Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF and co-financing.

In order for biodiversity mainstreaming to generate impacts at the scale necessary to achieve the related Aichi Biodiversity Targets, a series of investments by GEF that are *strategically nested within a larger-scale national planning and management framework* is often required. GEF support for this project will leverage the opportunities identified in the baseline scenario and associated co-finance brought in, particularly, the NES-GRIDSS, Sagarmala, Rebuild Kerala and GSDP programs by government, as well as the modest NCA work at national level coordinated by MoSPI. The following summary table on incremental reasoning summarizes the baseline scenario and alternative scenario per Component.

As embedded in the project design, GEF incremental support will mobilize additional funding to ensure policies, plans, programmes and investments in key economic sectors are based on credible information produced via NC valuation and accounting as well as other planning tools, such as NC-based economic development scenario analysis. Additionally, incremental GEF support will enable the Sagarmala and Rebuild Kerala programs, through collaboration and investments in one of the Sagarmala Investment zones and one of the Rebuild Kerala Initiative, to avoid or reduce its impact to NC and biodiversity resources, through significantly improved and NC-based planning, spatial allocation and routing of transport and related infrastructure, as well as adoption of support investments towards blue economic operations in the field of water resources, tourism, near-shore fisheries and others.

The financial resources provided by the GEFTF will serve to enhance the resilience of land/seascapes and their contributions to key economic sectors targeted by the project, and mainstream the incorporation of the principles and planning tools based on NC valuation and accounting into development planning. The project design is grounded in the full recognition of the dependencies of key economic sectors in India on the NC provided by healthy land/seascapes. The project recognizes the impacts of activities of one sector on ecosystem services affects other sectors that also depend on those services (e.g. impacts of agricultural production on watersheds servicing downstream and urban areas). Addressing these dependencies and interrelationships among economic sectors requires a landscape-wide approach. It also requires increased investments in management of biodiversity and ecosystem services provided by landscapes through tools to internalize the market and non-market values of ecosystem services into sectoral planning processes.

Component and additional cost	Baseline	Alternative scenario
Component 1: National system support f	Government blue economy ‘mission’ – whilst targeting sustainability, is la	Building on the NCAVES Interagency Working Group the project will establish and formally agree

<p>or blue economic growth with model incorporating natural capital (NC) values</p> <p>-</p> <p>GEF TF: USD 655,094</p>	<p>cking adequate NC-based planning, operations and monitoring. Related baseline programs e.g. Sagarmala or government legislation like EIA or CRZ-CRMP inadequately NC-based to prevent or mitigate impact to biodiversity or NC.</p> <p>Tourism and infrastructure sectors are expanding fast – potentially increasing impacts to BD&NC, rarely incorporate NC values and business risks, due to lack of standardised and accepted common NCA framework.</p> <p>India had several project-based (only) efforts on NCA (e.g. NCAVES with UNSD and UNEP), however the mandated MoSPI, MoFinance, MoEFCC have not published any joint strategy, agreed formats and roles & responsibilities for advancing and sustaining the NC Accounting related efforts and link these with the the System of National Accounts in India. Also, India has proven to be too large, diverse and complex ‘an ecosystem’ to pilot a fully-fledged SEEA-EEA NCA data system at national level, without first piloting this at State or District level based on existing data system such as ENVIS; as a result the enormous available data and staff capacity has hardly been made available to NCA in India, and reduced the SD agenda of the government with regards planning and monitoring aspects related to NC & BD.</p> <p>In the baseline, GRIDSS has not been adapted to SEEA-EEA framework and</p>	<p>on a coherent and consistent national framework for NC accounting (methods, data, analysis and reporting responsibilities); as well as reach agreement with mandated government agencies on adoption of SEEA-based indicators and applications in routine government mechanisms such as State Green GDP reporting, CRMPlanning..). The project incremental TA support will guide the agreement and optimal contents methodology towards upgrading and expanding the functionality of the national network of the NES-GRIDSS system in compliance with the SEEA framework– supporting decentralised pilots in SEEA NC-based planning and blue economy development in priority coastal sea-/landscapes and related sectors at District level, serviced through local GRIDSS data nodes.</p> <p>Next, project incremental support will raise the recognition and incorporation of externalities, risks and impact to BD& NC of the transport and tourism infrastructure sectors with corporate and public entities involved in the two coastal states , through analysis, round tables and incorporation in business plans (e.g. via the NC Protocols), budgeting and reporting (Green GDP), enabled through a national SEEA compliant NES-GRIDSS</p> <p>In the alternative scenario the Sagarmala Program and the Rebuild Kerala Initiative and its related sectors, will increasingly incorporate NC&BD values and objectives in program design, appraisal and operations through the project incremental support on (i) making the case on the environmental and economic sustainability gains of considering NC&BD (enabled through the round tables & project communications & KM work); (ii) using the expanded SEEA-based functionality of the GRIDSS system. including on applying NC-specific indicators</p>
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	<p>As a result, the information and decision support provided by NES-GRIDSS has not reflected the status of NC nor has effectively contributed to undertaking analysis for improving BD & NC-based spatial, economic planning and financial planning.</p>	<p>... system, increasing on applying the specific indicators for performance monitoring of blue economic growth in the districts/Sagarmala and Rebuild Kerala Initiative landscapes; as well as</p> <p>(iii) assessing the feasibility of a suite of NC-friendly fiscal and financing mechanisms. Additionally, the project will provide incremental support to identify and agree on improved design, appraisal and monitoring procedures by Sagarmala and Rebuild Kerala missions prior to investments – to be piloted under Comp 2 in the two targeted sites (e.g. improved EIA & indicators, guidance through Blue Economy Strategies, as well as compliance with enhanced NC-based spatial plans in the Districts).</p>
<p><u>Component 2:</u> Integration of NC objectives in planning and development of District Blue Economy and sector operations (tourism and infrastructure development)</p> <p>GEFTF: USD 1,671,429</p>	<p>Locally unsustainable development practices, including through the targeted transport infrastructure, tourism, fisheries and other sectors contribute to degradation and loss of coastal and marine biodiversity, loss of habitat connectivity, loss of key natural capital and ecosystem services – e.g. coastal protection by reefs and mangroves, as well as flooding prevention, buffer against droughts, and pollution of the environment such as chemical pollutants, eutrophication, and marine litter (as well as compromising India's commitment to MEAs such as Ramsar and CMS). As a result, there is a decline in the delivery of ecosystem services that support rural livelihoods, support the ecological resilience of PA systems, as well as increase the investment risks and costs related to NC to investors as well</p>	<p>Critical coastal ecosystems, habitats and species (and their services) mapped, valued, incorporated and protected, through enhanced landscape and sector management over 566,733 ha, specifically of concern to the Sagarmala Program and Rebuild Kerala Initiative areas and related sector operations by incorporation of protection measures, risk reduction and other mitigation measures such as redesign of investments, to protect critical NC& BD.</p> <p>GEF Incremental support will enable 6 (2+4) District NES-GRIDSS data nodes been made SEEA compliant and able to support relevant data, spatial analysis and guidance towards 3 new District Blue Economy Strategies in collaboration with local government. District development, Sagarmala program and Rebuild Kerala Initiative investments increasingly mainstream blue economy and NC/BD objectives principles based on the incremental support by the project on improving e.g. EIA procedures and appraisal process, by running economic development scenario analysis towards the i</p>

as the government programs.

Specifically, inadequate considerations for mainstreaming NC&BD in the planning, design and operations of the baseline programs Sagarmala as well as Rebuild Kerala Initiative, and its investments has already led to various cases of public protest, legal action and subsequent delays due to its perceived existing or potential environmental impacts; which are both costly as well as bad PR to the GOI blue economy mission and SD agenda. Though a management plan framework for conservation of Vembanad-Kol Wetlands has been adopted for implementation by the State Wetlands Authority, Kerala, the plan is at a framework level and does not include specific interventions for mainstreaming into the regional development processes, such as Rebuild Kerala Initiative.

Several initiatives target application of blue economic growth through e.g. ICZM, Sagarmala, Rebuild Kerala Initiative, Green Skills Development Program, however, these initiatives have largely failed to incorporate the stock, flows and value of NC&BD, in planning, investment design and decision making. This is due to the already mentioned reasons stated under Comp 1 – specifically the lack of a nationally agreed SEE-based NCA framework and metrics. Additionally, witho

mic development scenario analysis towards the incorporation of NC/BD values and targets, as well as through Technical Assistance, series of consultations and reviews with government, CSO and lead industry players as well as a formal process to get government endorsement of the blue economy strategies. The blue economy principles and directions will be applied to improve on the 'baseline CZMP plans' (stipulated CRZ 1991-2018) and subsequent development of 2 District Spatial Plans – zooming in on potential risk, impact reduction, protection and mitigation in the Sagarmala and Rebuild Kerala Initiative sea-/landscapes of critical NC&BD (stock, flows and values), through e.g. bufferzones, site protection, re-routing of transport infrastructure, restoration, conservation of HCVF, and others.

In the alternative, sector operations and at least 2 Sagarmala investment plans will be incorporate NC&BD protection objectives, also through incremental support on the development of public-private partnership and NC Protocols by 2 corporations, leading to start of green investments – specifically related to sustainable infrastructure, fisheries and tourism development. In addition to the improved management of 566,733 ha landscape management, these above data and planning mechanisms, consultations and partnership will additionally benefit 3 PAs through (external) threat reduction, e.g. related to water pollution, loss of habitats in watersheds, wildlife corridors and buffer functions, and essential ecosystem services flow (e.g. water supply or flood prevention).

	<p>ut adequate knowledge and capacity towards integrating NC values into development planning and operations of key economic sectors and programs – specifically under the baseline Sagarmala, the local development and application of blue economic growth – including at State level the obligatory development of CZMP will be less effective to protect biodiversity, NC and key ecosystem services.</p>	
<p><u>Component 3:</u> Strengthened national partnerships, knowledge and acceptance of NC accounting for District upscaling and replication</p> <p>GEF TF: USD 574,760</p>	<p>Insufficient national partnership towards national NCA framework and KM learning to foster replication of integrating NC values and criteria in ‘policy and practice’.</p> <p>Continued low awareness and acceptance of the benefit of mainstreaming biodiversity & NC -specifically with the Sagarmala Program and infrastructure, tourism and fisheries sectors to enable a blue economy growth model, including intersectoral linkages, dependencies and investment risks related to NC& BD.</p> <p>The national NES-GRIDSS program will not be able to adopt SEEA framework and upgrade staff capacity towards enhanced data nodes and applications for blue economy at District level.</p> <p>In the baseline there is no agreed national unified and standardised NC&BD monitoring system, reducing the effect of e.g. government EIA, CRMP etc.</p>	<p>In the alternative scenario selected sector industry leaders and government are enabled to integrate (in 4 Districts) and scale-up the integration of NC&BD protection objectives in development planning, enabled through implementing blue economy strategies, spatial planning, and green finance/fiscal measures, enabled through project support on capacity building, TA services, knowledge management and partnership building (linked to a consolidated national NCA framework, data nodes and analysis services). National partnership expanded and strengthened, national NCA Framework, methods and responsibilities agreed – linked to the NES-GRIDSS system, and understanding of the economic and environmental benefit of integrating NC&BD in planning, operations and investments enhanced, through outreach, KM and NC-analysis e.g. the ‘policy-analysis’ on the benefit of developing SEEA-based indicators applied to routine government mechanisms such as Green GDP, as well as the ‘sector analysis and round tables’.</p> <p>The model 4 Districts SEEA compliant NES-GRIDSS nodes prove beneficial to advance the agenda mainstreaming NC objectives in district economic development plans, sector operations and towards green finance options such as ecological finance</p>

		cal transfer (pre-feasibility design under Comp 1); and enable replication of this model to an additional 8 Districts through the national NES-GRIDSS system; with capacity building funded through the Green Skills development program. The GRIDSS system enables the impact performance M&E system through quantitative benchmarks, S EEA indicators; as well as track changes in sectoral plans, budgets and operations that support NC & BD.
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1.6. Global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF)

Given the highly favorable baseline situation and potential for scale-up through the many additional districts and investment zones of the NES-GRIDSS, Sagarmala program and Rebuild Kerala Initiative, respectively, the incremental GEF investment is expected to generate significant global environmental benefits in India well beyond the direct scope of the project itself. The project is expected to generate the following global environmental benefits which will be reassessed during the project preparation phase based on better field delineation, baseline data and identification of the specific sectors and NC existing in the targeted sea- and landscapes.

Blue economy through NC accounting' and biodiversity conservation: Coastal areas are some of the most productive and important habitats of the biosphere including coastal wetlands backwaters and estuaries. Over 11,000 faunal (625 vertebrates and 10,400 invertebrates) and over 800 floral (624 algae, 50 mangroves, 32 angiosperms, 71 fungi, 14 lichens, 12 seagrasses) species have been identified from the Indian coastal areas.

The two pilot river basins form a part of the Western Ghat bio-geographic region which is identified as one of the 25 biodiversity hotspots^[14] of the world.

The *Vembanad-Kol* forms a part of 37 wetlands designated as Ramsar Sites in recognition of their contribution to global biodiversity. Recorded biological diversity at the Ramsar Site include 123 phytoplankton, 17 mangrove and 23 mangrove associates, 135 zooplankton, 150 pisces, 18 crab, 6 clam, 2 bivalve, 2 mussel, 1 oyster and 225 bird species. One vulnerable (*Aquila clanga*) and 9 near-threatened bird species (*Aythya nyroca*, *Mycteria leucocephala*, *Threskiornis melanocephalus*, *Pelecanus philippensis*, *Anhinga melanogaster*, *Ichthyophaga ichthyaetus*, *Limosa*, *Numenius arquata* and *Coracias garrulous*) have been reported from the Vembanad estuary. The site continues to meet Ramsar criteria 5 (as the wetland regularly supports over 25,000 waterbirds).

The *Aghanashini Estuary* has been identified as a potential Ramsar Site under criteria 5 of the Ramsar Convention (as the wetland regularly supports over 45,000 waterbirds) and criteria 6 (as population of as many as 39 waterbird species found at this site exceeds known 1% biogeographic population threshold). The estuary is of global significance in supporting the Near-threatened bird species: *Sterna aurantia*, *Haematopus ostralegus*, *Caladris ferruginea*, *Numenius arquata*, *Limosa lapponcia*, *L. limosa* and *Threskiornis melanocephalus*; and the Vulnerable *Leptoptilos javanicus*). With the presence of 77 fish species (including 13 marine, 43 marine-estuarine, 1 estuarine, 1 estuarine-freshwater, and 18 species inhabiting all habitats), the site also qualified under criteria 7 of the Ramsar Site designation. Additionally, the NC accounting and green economic development planning proposed by the GEF project will build the basis of a balanced developmental path for the region, particularly ensuring that the values of estuary are not compromised by upstream development in the river basin which effect the natural hydrological regimes in the targeted Aghanashini estuary. The Aghanashini river, includes the recently expanded and renamed

Sharavathi Lion Tailed Macaque Wildlife Sanctuary with an area of 93,016 ha protecting the freshwater habitat of *Myristica* -swamps that hosts many species like the Endangered Lion Tailed Macaque (*Macaca silenus*), as well as the 'Vulnerable' Sambar (*Rusa unicolor*), and Gaur (*Bos gaurus*); as well as the 'Endangered' Tiger (*Panthera tigris*), and Dhole (*Cuon alpinus*).

The project can help reduce threats posed by conventional coastal and marine development – specifically the two Sagarmala and Rebuild Kerala Initiative programs, to this globally significant biodiversity. Improved planning for investment, direct management and (future) restoration of natural areas in the sea-/landscapes will help in maintaining ecological connectivity and resilience including in support of the three existing and proposed protected areas. The project would work with and target increased incorporation of NC values and targets in the sector plans and operation of the infrastructure and tourism sectors – and if resources allow also of the inshore and near-shore fisheries sector. It is anticipated that these would be integrated in the partnership, investment plans and operations of the two Sagarmala and Rebuild Kerala Initiative programs.

Furthermore, developing the SEEA national framework and partnership for NC accounting will significantly raise the profile of the value to the economy and environmental stability of NC in India, in general and biodiversity specifically, through e.g. the Green GDP reporting. The project will lead to enhanced protection and sustainable management of coastal ecosystems, including watersheds over an estimated maximum of one-third (566,733 ha) of the total of 1,700,200 ha delineated in critical coastal wetland and river basin ecosystems, including watersheds feeding into the coastal river basins in 3 related Districts and Sagarmala and Rebuild Kerala Initiative project sites. More detail on the Core Indicators and targets are given in Annex B.

General GEBs: Through the development of an enhanced knowledge base relating to the status of NC and improved information on linkages with, and contributions to key economic sectors, the project will facilitate improved decision-making to minimize adverse impacts of key sectors on ecosystem service provision at two levels. Firstly, at the district level, the project will allow provincial and local stakeholders to systematically define environmental and economic trade-offs associated with development measures by using the national system of NES-GRIDSS and NC-based assessments and valuation, and incorporate ecosystem service-related opportunities and risks into their planning and development strategies, targeted specifically for coastal and marine resources and sectors. Secondly, for the corporate sector, the project will support initiatives by leading enterprises to integrate the value of ecosystem services and biodiversity into their own operations and activities. Such initiatives will contribute not only to long-term business sustainability but also to the standard of the company's sustainability reporting. Ultimately, participating companies will be able to clearly define their operations as contributing to long-term operational and corporate sustainability, offering competitive advantage through growth, innovation and new market opportunities, while strengthening stakeholder relations and the company's long-term license to operate. Together these public and private initiatives will help boost the contribution of sustainable management of coastal and marine ecosystem services to the economy, at both national and local levels.

1.7. Innovation, sustainability and potential for scaling up

Innovativeness: The project is innovative as it aims to operationalize the concept of NC and ecosystem-based approaches at the landscape level and promote integration of values of services/benefits obtained from multiple ecosystem services into decision making and operations of key economic sectors (including infrastructure, and tourism). By applying ecosystem-based approaches and emphasizing sea- and landscape connectedness, the project will foster partnerships among multiple departments within central and state government as well as the private sector.

Moreover, it is anticipated that over the project's duration, awareness-raising activities will contribute to increased awareness and investments by key economic sectors on the sustainable management of NC at the landscape level, leading to heightened consumer consciousness and willingness to pay for sustainably produced food, as well as for sustainable tourism services and products.

Sustainability. The sustainability of the project will be ensured through institutionalization of mechanisms to integrating NC information into the ongoing and relatively well funded System of National Accounts (SNA) and the NES-GRIDSS system – specifically related to coastal and marine resources and economic development. Additionally, its applications would be linked to budgeting processes, institutionalization of EIA procedures that incorporate ecosystem values, as well as the Sagarmala Investment program. The NES-GRIDSS is also being expanded nationally, which offers further prospect for replication and sustainability for the SEEA increment on NC assessment and accounting. These mechanisms will help ensure ongoing efforts and post-project impacts.

Scaling up: The project aims to strengthen India's public and private administration systems in order to incorporate biodiversity and NC valuation into their respective decision-making structures and reporting systems. The support from GEF would allow India to directly access global-level expertise and experience to implement the UN SEEA framework and adapt to the India context, as well as apply and replicate through means of the increment to the NES-GRIDSS system and program which covers a total of 588 rural/coastal Districts and constitute the potential upscaling of blue economy in India. GEF financing will function as a catalyst to drive political commitment to driving change among existing public sector agencies, both in term of enforcement of existing legal and regulatory provisions and in developing innovative financial instruments to incentivize biodiversity conservation. From a global perspective, the project will enhance India's capability to implement the NBSAP, which directly serves its obligations under the CBD. GEF funding will expedite India's capability to accomplish the Aichi Target 3^[15] and Target 20^[16]. Embedding and linking the project's field-level activities with the process of policy development will contribute to an enabling policy, regulatory and institutional framework that further contributes to the sustainability of project outcomes.

[1] The IPBES Regional Assessment Report on Biodiversity and Ecosystem Services for Asia and the Pacific 2018

[2] EnviStats India 2018: Supplement on Environmental Accounts (Government of India, 2018) – available at:
http://www.indiaenvironmentportal.org.in/files/file/EnviStats_India_27sep18.pdf

[3] See: <https://www.ibef.org/industry/infrastructure-sector-india.aspx>.

[4] Erlewein, A. (2013). Disappearing rivers—the limits of environmental assessment for hydropower in India. *Environmental Impact Assessment Review*, 43, 135-143

[5] Vivek Menon, Sandeep Kr Tiwari, K Ramkumar, Sunil Kyarong, Upasana Ganguli and Raman Sukumar, 2017: Right of Passage – Elephant Corridors in India, Conservation Reference Series #3, Wildlife Trust of India

[6] https://www.gatewayhouse.in/wp-content/uploads/2017/06/FICCI_Blue-Economy-Vision-2025.pdf

[7] See: https://updatecollective.files.wordpress.com/2018/01/occupationofthecoast_trc2017.pdf.

[8] Environmental Information System (ENVIS) was started in 1982-83 as a Plan Scheme and designed to be a repository of comprehensive environmental information with collection, collation, storage, retrieval and dissemination of the same through a nation-wide network of ENVIS centers to different users, including policy planners, decision-makers, researchers, academicians, research scientists and general public. The ENVIS network at present consists of 67 Centers. A map of ENVIS Centers is given in Annex D.

[9] From the report: REBUILD KERALA DEVELOPMENT PROGRAMME - A Resilient Recovery Policy Framework and Action Plan for Shaping Kerala's Resilient, Risk-Informed Development and Recovery

from 2018 Floods, 2019, Rebuild Kerala Initiative

[10]http://mospi.gov.in/sites/default/files/reports_and_publication/statistical_publication/EnviStats/EnviStats2019_Vol2.pdf

[11] National Environmental Survey (NES) – Grid-based Resource Information and Decision Support System (GRIDSS)

[12] From GEF 7 Programming Document GEF/C.54/19/Rev.03 (June 26, 2018).

[13] At the CBD/COP 13, Parties agreed to a Four-year Framework of Program Priorities for the Seventh Replenishment Period (2018-2022) of the GEF Trust Fund (Decision CBD/COP/DEC/XIII/21). The Framework includes specific program priorities to be addressed by the GEF-7 Biodiversity Focal Area investments and other associated GEF programming. The over arching goal of the GEF-7 Biodiversity Focal Area strategy is to maintain globally significant biodiversity in landscapes and seascapes. To achieve this goal, GEF investments are expected to contribute to three objectives identified in the CBD COP 13 Guidance to the GEF: (1) mainstream biodiversity across sectors and spatial areas, (2) reduce direct drivers to biodiversity loss, and (3) strengthen biodiversity policy and institutional frameworks. Annex 2 of the GEF-7 Programming Document cited above details the programming options for meeting these objectives.

[14] Over 4000 species of flowering plants (38% endemic), 289 fish (41% endemic), 135 amphibians (75% endemic), 156 reptiles (62% endemic), 508 birds (4 % endemic) and 120 mammals (12% endemic) have been recorded from Western Ghats (Daniels, 2003; Babu and Nayar, 2004; Dhanukar et al, 2004; Gururaja and Sahyadri, 2004)

[15] By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, while positive incentives for conservation and sustainable use of biodiversity are developed and applied, consistent with the CBD and other relevant international obligations, taking into account national socio-economic situation.

[16] By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from current levels.

Annex D:

List of 55 Districts Selected for Pilot National Environment Survey - Grid Based Decision Support System (GRIDSS) by ENVIS Hubs/Resource Partners					
Sl. No.	ENVIS Hub/RP (arranged state-wise in alphabetical order)	Selected District	State	Centre located at	Type
1	East Godavari River Estuarine Ecosystem (EGREE) Foundation, Kakinada	East Godavari	Andhra Pradesh	Andhra Pradesh	Hub
2	Indian Institute of Chemical Technology (IICT), Hyderabad	Vishakapatnam	Andhra Pradesh	Telangana	RP
3	Department of Environment & Forest – Arunachal Pradesh		Arunachal Pradesh	Itanagar	Hub
4	Assam Science, Technology and Environmental Council, Guwahati	Morigaon	Assam	Assam	Hub

5	Asian Development Research Institute (ADRI), Patna	Nalanda	Bihar	Bihar	RP
6	Department of Environment – Chandigarh	Chandigarh	Chandigarh	Chandigarh	Hub
7	Chhattisgarh Environment Conservation Board	Raipur	Chhattisgarh	Chhattisgarh	Hub
8	Central Pollution Control Board (CPCB), Delhi	Shahdara	Delhi	Delhi	RP
9	School of Environmental Sciences, Jawaharlal Nehru University (JNU), Delhi	South Delhi	Delhi	Delhi	RP
10	Consumer Education and Research Centre (CERC), Ahmedabad	Dangs	Gujarat	Gujarat	RP
11	Gujarat Cleaner Production Centre (GCPC), Gandhinagar	Bharuch	Gujarat	Gujarat	RP
12	Gujarat Ecology Commission (GEC), Gandhinagar	Jamnagar	Gujarat	Gujarat	Hub
13	National Institute of Occupational Health (NIOH), Ahmedabad	Mehsana	Gujarat	Gujarat	RP
14	International Institute of Health and Hygiene (IIHH), Delhi	Mewat, Nuh	Haryana	Delhi	RP
15	The Energy Resources Institute (TERI), Delhi	Gurugram	Haryana	Delhi	RP
16	State Council for Science, Technology and Environment (SCSTE), Shimla	Kullu	Himachal Pradesh	Himachal Pradesh	Hub
17	Department of Ecology, Environment and Remote Sensing, State Government of J&K	Ganderbal	Jammu & Kashmir	Jammu & Kashmir	Hub
18	Centre for Mining Environment (CME) IIT-Indian School of Mines (ISM), Dhanbad	Dhanbad	Jharkhand	Jharkhand	RP
19	Centre for Ecological Sciences - Indian Institute of Science (IISc), Bengaluru	Shimoga	Karnataka	Karnataka	RP
20	Environment Management & Policy Research Institute (EMPRI), Bengaluru	Ramanagara	Karnataka	Karnataka	Hub
21	Kerala State Council for Science, Technology and Environment (KSCSTE), Thiruvananthapuram	Thiruvananthapuram	Kerala	Kerala	Hub
22	Disaster Management Institute (DMI), Bhopal	Bhopal	MP	MP	Hub

Sl. No.	Organization/Institution	Location	State	Category	Remarks
23	Bombay Natural History Society (BNHS), Mumbai	Thane	Maharashtra	Maharashtra	RP
24	Indian Institute of Tropical Meteorology (IITM), Pune	Pune	Maharashtra	Maharashtra	RP
25	Directorate of Environment, Dept. of Forests and Environment, Govt. of Manipur, Imphal	Bishnupur	Manipur	Manipur	Hub
26	North Eastern Hill University (NEHU), Shillong	Khasi Hills	Meghalaya	Maghalaya	RP
27	Mizoram Pollution Control Board, Aizawl	Mamit	Mizoram	Mizoram	Hub
28	Nagaland Pollution Control Board, Dimapur	Kohima	Nagaland	Nagaland	Hub
29	Centre for Environmental Studies (CES), Forest & Environment Dept, Govt. of Odisha, Bhubaneswar	Cuttack	Odisha	Odisha	Hub
30	Puducherry Pollution Control Committee	Puducherry	Puducherry	Puducherry	Hub
31	Punjab State Council for Science and Technology (PSCST), Chandigarh	Mohali (S.A.S. Nagar)	Punjab	Punjab	Hub
32	Central Arid Zone Research Institute (CAZRI), Jodhpur	Barmer	Rajasthan	Rajasthan	RP
33	School of Planning and Architecture (SPA), Delhi	Alwar	Rajasthan	Delhi	RP
34	Forests, Environment & Wildlife Management Department, Sikkim, Gangtok	East Sikkim	Sikkim	Sikkim	Hub
35	State Council of Science and Technology for Sikkim (SCSTS), Gangtok	West Sikkim	Sikkim	Sikkim	RP
36	Centre for Advanced Study in Marine Biology (CASMB), Parangipettai	Cuddalore	Tamil Nadu	Tamil Nadu	RP
37	CPR Environmental Education Centre (CPREEC), Chennai	Villupuram	Tamil Nadu	Tamil Nadu	RP
38	Department of Environment, Govt. of Tamil Nadu, Chennai	Thiruvallur	Tamil Nadu	Tamil Nadu	Hub
39	Department of Zoology - University of Madras, Chennai	Kanchipuram	Tamil Nadu	Tamil Nadu	RP
40	Institute for Ocean Management (IOM), Anna University, Chennai	Tuticorin (Thoothukudi)	Tamil Nadu	Tamil Nadu	RP

41	Institute of Forest Genetics and Tree Breeding (IFGTB), Coimbatore	The Nilgiris	Tamil Nadu	Tamil Nadu	RP
42	Thiagarajar College of Engineering (TCE), Madurai	Madurai	Tamil Nadu	Tamil Nadu	RP
43	Salim Ali Centre for Ornithology and Natural History (SACON), Coimbatore	Coimbatore	Tamil Nadu	Tamil Nadu	RP
44	Environment Protection Training and Research Institute (EPTRI), Hyderabad	Hyderabad	Telangana	Telangana	Hub
45	Environment Protection Training and Research Institute (EPTRI), Hyderabad	Kurnool	Telangana	Telangana	RP
46	Tripura State Pollution Control Board, Agartala	Sepahijala	Tripura	Tripura	Hub
47	Directorate of Environment - Uttar Pradesh, Lucknow	Allahabad	Uttar Pradesh	Uttar Pradesh	Hub
48	National Botanical Research Institute (NBRI), Lucknow	Lucknow	Uttar Pradesh	Uttar Pradesh	RP
49	World Wide Fund for Nature – India (WWF), Delhi	Gautam Buddha Nagar	Uttar Pradesh	Delhi	RP
50	Forest Research Institute (FRI), Dehradun	Dehradun	Uttarakhand	Uttarakhand	RP
51	G.B. Pant National Institute of Himalayan Environment and Sustainable Development (GBPNIHESD), Almora	Nainital	Uttarakhand	Uttarakhand	RP
52	Uttarakhand Environment Protection & Pollution Control Board (UEPPCB), Dehradun	Haridwar	Uttarakhand	Uttarakhand	Hub
53	Wildlife Institute of India (WII), Dehradun	Rishikesh	Uttarakhand	Uttarakhand	RP
54	Botanical Survey of India (BSI), & Zoological Survey of India (ZSI), Kolkata	Purulia	West Bengal	West Bengal	RP
55	Department of Environmental Sciences (DES), Kalyani University, Nadia	Nadia	West Bengal	West Bengal	RP

Annex E attached.

1b. Project Map and Coordinates

Please provide geo-referenced information and map where the project interventions will take place.

Two maps with the suggested coastal sites targeted by the project, involving Sagarmala Investment Zones are attached as **Annex A**.

2. Stakeholders

Select the stakeholders that have participated in consultations during the project identification phase:

Indigenous Peoples and Local Communities

Civil Society Organizations Yes

Private Sector Entities Yes

If none of the above, please explain why:

In addition, provide indicative information on how stakeholders, including civil society and indigenous peoples, will be engaged in the project preparation, and their respective roles and means of engagement.

In view of the multi-disciplinary nature of the project, the complex institutional interrelationships and socio-economic implications and the policy-landscape nexus, it will be critically important to engage and secure the commitment of a broad range of stakeholders during the project's design and preparation. During the PIF modest stakeholder engagement was made possible, including several key meetings and e-mail exchanges have been conducted with:

- The Sagarmala Program management team (Ministry of Shipping in New Delhi) and Indian Ports Association;
- the ENVIS & NES-GRIDSS program teams, as well as the GEF cell at the Ministry of Environment, Forests and Climate Change (New Delhi)
- with Ministry of Statistics and Programme Implementation on the national NCA work, including through the TEEB program (personal meeting, as well as via MS Teams)
- Kerala State Government consulted via Wetlands International on the Rebuild Kerala Initiative and the RAMSAR wetland site
- State Wetlands Authorities in Karnataka and Kerala related to the proposed GEF wetlands project sites
- with the State Biodiversity Board, Karnataka towards design and collaboration.
- Indian Railways via UNEP India office with regards coastal connectivity investment programs (as apart of our collaboration on greening railways in India) – as potential GEF baseline program
- Environmental action/citizen groups related to Sagarmala program in Gujarat and Goa – as part of the site selection process, pre-screening for potential conflicts, and baseline analysis for improved IEA procedures.
- TNC – India and Wetlands International – South Asia programs, on project design related to mainstreaming programs in India on NCA, and selection of coastal sea-landscapes & baseline programs, respectively.

The project will promote participation of a wide range of relevant stakeholders including government agencies, civil society (e.g., NGOs, self-help groups, and producer groups), the private sector, forest dwellers and fishermen potentially affected by the Sagarmala program, local villages including specifically women, and indigenous communities (if any identified during the PPG). During the PPG phase, a broad stakeholder mapping and engagement strategy will be undertaken. In India, stakeholders from CSOs, private sector, state and district government will be engaged through project design workshops in each region to update and complete relevant contextual information and to validate assumptions, risks and goals for project implementation. Additionally, the PPG will

undertake at least one event in each region to solicit input from community stakeholders in project design, including representatives of indigenous groups, if applicable. The local scale consultations during the PPG will ensure equitable participation of women. The consultation events will identify the relevant baseline activities in the States and targeted districts, and potential partners for project implementation.

A gender analysis will be undertaken during the PPG phase and will form the basis for appropriate plans, activities, monitoring, and safeguards to be defined in the project document. Key elements will be incorporated in the results framework.

Key partners consulted during the conceptualization, and baseline initiatives and their suggested roles in the project are described below.

Stakeholder	Role and Involvement in the Project
Ministry of Environment, Forests and Climate Change	<p>MOEF&CC is responsible for environmental protection and restoration, particularly the protection of natural resources, including forests, water, oceans and minerals. The Ministry runs the national ENVIS system, which includes District nodes under the NES-GRIDSS system, which at local levels is represented by the agencies listed in Annex D; and thus serve as the lead National Executing Agency and will be responsible for overall project management.</p> <p>The Ministry also set up the National Centre for Sustainable Coastal Management (NCSCM) in 2019 tasked to undertake studies and research in the area of Coastal Zone Management including coastal resources and environment – which agency would be involved in the development of blue economy strategies and spatial planning under the GEF project.</p> <p>In addition, Indian Forest Service (responsible for managing national reserve forests, buffer zone areas and community forests), the Water Resources Department (responsible for overseeing management of water resources including rainwater, surface water, groundwater, and seawater in river basins), and the Marine and Atmospheric Sciences Department (responsible for formulating policies and plans for conservation and restoration of marine and coastal resources) of MOEF&CC will contribute to the assessments and policy mainstreaming work.</p>
Ministry of Statistics and Programme Implementation	<p>The Ministry attaches considerable importance to coverage and quality aspects of statistics released in the country on NC and biodiversity. The statistics released are based on administrative sources, surveys and censuses conducted by the center and State Governments and non-official sources and studies. The surveys conducted by the Ministry are based on scientific sampling methods. The Ministry compiles data sets of biodiversity based on current data, after applying standard statistical techniques and extensive scrutiny and supervision. The United Nations Statistics Division (UNSD) and UN Environment have initiated that covers India as one of the pilot countries. The Central Statistics Office (CSO- MoSPI) has been playing a leading role in implementing the EU-funded project on NC Accounting and Valuation of Ecosystem Services (NCAVES). An interdepartmental technical working group, c</p>

on	<p>uation of Ecosystem Services (NOAVES). An interdepartmental technical working group, consisting of a wide range of stakeholders in the environmental domain (including MoSPI, MoEFCC, DoLR, NRSC; FSI; Department of Water Resources; UNDP/RC; GIZ; etc.) have been developed to oversee the implementation of the project. The GEF project would build upon and continue this interdepartmental technical working group under Comp 1. To date CSO has compiled various types of ecosystem accounts at the national and (sub) national level that will feature in their upcoming Environment Statistics Publication. As such CSO-MoSPI is a major EA under the proposed project.</p>
Ministry of Science and Technology	<p>Department of Science and Technology is responsible the biodiversity scientific approaches through R&D and its research institutions or laboratories for development of indigenous technologies concerning, processing, standardization and applications, in co-ordination with the concerned Ministry or Department, as well as undertaking or financially sponsoring scientific and technological surveys, research design and sustainable development, where necessary.</p>
Ministry of Shipping	<p>Maritime transport is a critical infrastructure for social and economic development of India. The Ministry of Shipping encompasses shipbuilding and ship repair, major ports, national waterways and inland water transport, and has the responsibility to formulate policies and programmes on these subjects and their implementation. The Sagarmala Programme that has been initiated to promote port-led development in the country is the flagship programme of the Ministry of Shipping. The Sagarmala Program office in the Ministry will be a key co-finance partner, as well as collaborate on improved EIA procedures, sector round tables and analysis, incorporation of NC-based considerations towards the improvements in the design, operations and monitoring of the Sagarmala port and harbor related investments – in collaboration with State and district governments, the ENVIS system, as well as corporate partners. in the two targeted project sites. Sagarmala will also be in the lead – in collaboration with key corporate partners and government to devise and implement green finance green jobs, and sustainable business development in e.g. fisheries and tourism sector.</p>
Ministry of Tourism; India Tourism Development Cooperation & Tour operators	<p>The Ministry of Tourism functions as the nodal agency for the development of tourism in the country. It plays a crucial role in coordinating and supplementing the efforts of the State/Union Territory Governments, catalyzing private investment, strengthening promotional and marketing efforts and in providing trained manpower resources – such as e.g. suggested via the GEF project with the Green Skills development Program applied to the Sagarmala Program sites and targeted stakeholders. It has 5 regional and 15 sub-regional offices to support joint analysis, planning and implementation with the GEF project. Additionally, it is anticipated that the project would collaborate with the India Tourism Development Cooperation in cases commercial investments, promotion and operations would become the target of the project, including where applicable with interested Tour Operators. Given no engagement has yet been conducted during PIF identification, this would get major emphasize during</p>

	ing the baseline and stakeholder analysis of the PPG phase.
National Fisheries Development Board – Department of Fisheries	<p>National Fisheries Development Board Set is responsible to realize the full potentials of Indian fisheries through coordination of different agencies and public-private partnerships, as well .</p> <p>Its related Blue Revolution (Neel Kranti Mission) has the vision to achieve economic prosperity of the country and the fishers and fish farmers as well as contribute towards food and nutritional security through full potential utilization of water resources for fisheries development in a sustainable manner, while keeping in view the bio-security and environmental concerns. The Blue Revolution program of the Board – specifically focusing on capacity and sustainable business development of small-scale fishermen and fish farmers aligns well with the objectives of the GEF project – specifically under Comp 2 towards public-private partnership and green investments in the two Sagarmala sites – specifically related to sustainable infrastructure, fisheries and tourism development as specified in the Blue Economy Strategies. Also here we have not yet been able to conduct consultations with the Fisheries department as well as its Board given this is very local situation specific; it would get major emphasize during the baseline and stakeholder analysis during the PPG phase.</p>
Department of Water Resources	India is endowed with a rich and vast diversity of natural resources, water being one of the m. Its development and management division plays a significant role in multiple-scale of development, including biodiversity conservation. Integrated water management is vital for poverty reduction, environmental sustenance and sustainable economic development. National Water Policy envisages that the water resources of the country should be developed and managed in an integrated manner.
State Wetlands Authority (Kerala and Karnataka)	State Wetlands Authorities have been constituted under the provisions of Wetlands (Conservation and Management) Rules, 2017 as the nodal policy-making, regulating and management organizations at state levels. These authorities also have a mandate to ensure mainstreaming of full range of wetlands ecosystem services and biodiversity values within developmental planning processes.
State and District government	Selected States and Districts have been identified based on the consultations and baseline assessment with the national Ministry of Environment, Forests and Climate Change – which coordinates the national ENVIS system, as well as the Ministry of Shipping with regards to their priorities under the Sagarmala program. The PPG will revisit the sites and districts and conduct full baseline and stakeholder analysis, site section and design of intervention within the proposed Project Framework. A key role is envisioned for the District Development Authorities, a.o towards Blue Economy Strategies, spatial planning, and collaboration with the Sagarmala Program, Green Skills Development Program, as well as the Infrastructure, Tourism and Fisheries sector agencies.

	<p>Additionally, the State Wetland Authorities would be involved – with regards the wetland and near-coastal protected areas included in the project – specifically on the analysis and strategizing threat reduction under the District blue economy strategies and spatial planning process sponsored through the GEF project.</p>
UNEP TEEB & UN Statistics Division (UNSD).	<p>TEEB (which provides capacity development and technical support on valuation of ecosystem services and NC accounting as well as economic instruments and incentives) is a major stakeholder in this project. The project will benefit from co-financed partnership and collaboration with selected international and national partners involved in NCA related initiatives, such as the NC Accounting and Valuation of Ecosystem Services (NCAVES) project in India with UNSD, MoSPI, TEEB AgriFood, as well as the UNEP Finance Initiative/Natural Capital Declaration (an initiative that promotes the integration of NC into mainstream financial system and financial institutions' operations, products and decisions). Agreement has been reached with the TEEB team to coordinate and integrate (co-financing) methods and results to the project by the international TEEB team – specifically through its New Delhi based staff; yet this would not involve use of any GEF funding. Through the TEEB program staff as well as directly via the government MoSPI, collaboration will be established with UNSD with regards their support on applications of the SEEA central framework as well as the expanded SEEA-EEA framework.</p>
Academic institutions	<p>Universities with strong expertise in the fields of resource economics, assessment and scenario analysis will contribute technically to the analytical and capacity building work to be conducted under the project. Given the importance of academic institutions is recognized as strategically important for national economic development, these universities will support the project by providing insights into local socio-economic-political environments for implementation, and as disseminators of the project's results at provincial level.</p>
Civil society organizations	<p>At all stages from PPG and throughout implementation, the project will engage with and involve key social and environmental CSOs with relevant expertise and mandate, including locally based grass-roots organizations (CBOs), social enterprises, business associations and advocacy groups with international affiliations. The following is a non-exhaustive list: The Nature Conservancy's (TNC's) India Program, Innovative Solutions for Sustainable Development, Centre for Science and Environment, Environmentalist Foundation of India, Vindhya n Ecology and Natural History Foundation and Agency for Non-conventional Energy and Rural Technology etc.</p>
Citizen Science Groups	<p>Vemabanad-Kol and Aghanashini estuary have an active birdwatcher networks which conduct annual mid-winter waterbird census under the framework of Asian Waterbird Census.</p>
User groups linked	<p>Kerala is one of the front runners among the Indian states in terms of ensuring a communit</p>

d with wetlands	y led planning and development through local self-governments. Presently more than 70% of the development budget is allocated to the Panchayati Raj Institutions for planning and implementation. Besides the Panchayati Raj Institutions, there are several user groups which function as collectivized production and processing guilds in the region. The region in and around Vembanad has several coir retting societies, fisheries societies, agriculture farmers societies and houseboat owners' societies.
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3. Gender Equality and Women's Empowerment

Briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g. gender analysis).

Research indicates that sustainable production practices in the targeted sectors may have significant long-term gender impacts. For example, the workplace gender gap in India is reinforced by low participation of women in the formal economy and low wages for those who work. The World Economic Forum's Global Gender Gap report stated that on average of 66 per cent of women's work in India is unpaid, compared to 12 per cent of men. The scale of India's gender gap in women's share among legislators, senior officials and managers as well as professional and technical workers highlights that continued efforts will be needed to achieve parity in participation in planning, access to economic opportunity and decision making. This aspect will get full attention in the project activities and stakeholder/gender approach related to integrating natural capital and ecosystem services values in District-level blue economy strategy and the spatial planning processes. The very nature of expanding the NES-GRIDSS data systems, SEEA-based NCA as well as consultations and planning for a blue economic growth path in Districts will require -and the project will facilitate the involvement of a broad stakeholder representation and equitable voice in reaching agreements towards sustainable and equitable development in the targeted coastal sea-/landscapes. Gender dimensions in the blue economy strategies, coastal sector operations, and spatial planning processes are essential given it is expected that the key coastal NC, targeted sectors, resource utilization and usufruct rights are gender specific (e.g. related to water resources, fisheries, land titles etc). The project will facilitate a process with District Governments and the local ENVIS teams to devise a locally appropriate stakeholder and gender-sensitive participation and planning process, which will also inform the stakeholder forum and reference basis for the development and agreement on NC-based spatial planning. The project is expected to work with the community led Panchayati Raj Institutions for planning and project implementation. Besides the Panchayati Raj Institutions, there are several local user groups (e.g. related to wetlands' coir retting societies, fisheries societies, agriculture farmers societies and houseboat owners) which function as collectivized production and processing guilds in the project sea-/landscapes region. Analyzing their gender dimensions as well as representing their interests in the strategy and spatial planning development will be key for a gender appropriate project approach, as part of the targeted integration of NC & BD objectives in the targeted sectors. Additionally, the project will promote good participation of women from a wide range of relevant stakeholders including State and District government agencies, key corporate partners, civil society (e.g., NGOs, universities), women, indigenous communities, and identified vulnerable groups – which is expected to be guided through a project gender manual as well as supporting budget.

The project preparation phase will conduct a gender gap survey and analysis in order to incorporate a gender perspective in project interventions and provide an impartial platform to address gender concerns. Such data will enhance the project's effectiveness in understanding, promoting and incorporating gender equality and its contribution to sustainable development.

Additionally, specific logframe indicators and targets will be set related to gender equality or inclusiveness, as well as explicit budget allocations to enable meaningful M&E through collection of gender-disaggregated data. The project preparation phase will also engage first-hand women's voices by conducting a gender assessment survey to identify and to target opportunities specifically related to women's dependencies and roles in maintaining NC, the targeted sectors, related to their role and dependencies in production, finance and decision making. Selection and design of technological and institutional interventions will be undertaken in close collaboration with local women's organizations. UNEP has recently adopted the Gender Marker and Guidelines which will ensure that project design meets the gender requirements of GEF as well UNEP.

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment? Yes

closing gender gaps in access to and control over natural resources; Yes

improving women's participation and decision-making; and/or Yes

generating socio-economic benefits or services for women.

Will the project's results framework or logical framework include gender-sensitive indicators?

Yes

4. Private sector engagement

Will there be private sector engagement in the project?

Yes

Please briefly explain the rationale behind your answer.

The private sector will be engaged at various levels. At the State and/or District level through participation in the Round Tables for the two targeted sectors – transport infrastructure and the tourism sectors. Additionally, through support to and PPP collaboration with corporate partners aiming at investing in the Sagarmala Development Zones/seascapes and the Rebuild Kerala Initiative, the private sector will be engaged at the ‘field-level’ to adopt more NC-friendly investment plans and operations, specifically with regards the planning, investments and operations of the tourism, fisheries and infrastructure sectors. The project will assess baseline and general market for this in the two targeted Sagarmala Program areas and related Districts as part of the pre-feasibility design at PPG, including with India Tourism Development Cooperation & Tour operators towards sustainable and NC-based tourism operations; as well as with regards the Fisheries sector, with small-holder fisheries operations and businesses – coordinated through the National Fisheries Development Board. It is not yet known at this stage whether this could involve any corporations in the field of near-shore and in-shore fisheries business development, aquaculture and freshwater fish cultivation.

5. Risks to Achieving Project Objectives

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)

TABLE 1: PROJECT RISKS AND MITIGATION STRATEGIES

Risk	Rating	Mitigation Strategy
Government budgetary constraints at national and local level	M	Initial assessments of the feasibility of budgetary and implementation provisions have been conducted jointly with the executing partners. During the project preparation phase, commitments on budgetary support and cofinancing will be formalized during the project preparation phase. Furthermore, the project will continue to seek cofinancing through private sector partnerships and other sources throughout the project's duration.
Limited capacity of local/national institutions to implement project activities.	M	The project will ensure full support throughout the implementation phase through support via the Executing Agency, including activities for targeted capacity-building, in order to specifically prepare local and national institutions for their respective roles and responsibilities. This targeted capacity-building support will also aim at addressing specific challenges due to weak understanding within national governmental institutions and other stakeholders of the concepts and approaches relating to ecosystem management and NC (particularly through Outputs 2.1.1). Implementation will additionally be supported by a range of local and international institutional centers of excellence such as universities and research institutions as well as UNEP's Regional Office for Asia and the Pacific, and around the world.
Weak coordination and partnerships among different ministries, provincial governments and private sector	M	The implementation of NC accounting, as well as integration of NC into economic sectors requires active involvement of a wide range of stakeholders including private sector actors, as well as close coordination among all relevant ministries and provincial governments. In view of this, the project will ensure that all key stakeholders are involved from the initial stages of project planning and implementation, by building upon and strengthening existing coordination mechanisms (e.g. coordination mechanisms relating NBSAP and BIOFIN). Furthermore, project output 1.2.1 specifically aims at establishing institutional mechanisms to ensure strong cross-sectoral coordination and collaboration.
Low level of participation and		The risk is considered low due to pre-existing engagement and excellent working relationships among all partners. The project will mitigate this risk by employing a participatory and consultative approach to build consensus and enhance local ownership. The

Participation and support from stakeholders	L	atory and consultative approach to build consensus and enhance local ownership. The latter is especially important at provincial level and is a key to project success. A clear emphasis on economic benefits to e.g. the local community will also serve to mitigate any risk of inadequate stakeholder support.
Impact of climate change on the coastal and marine environment, targeted sectors, including production effects on local resource holders	M (see SRF)	<p>Climate change is likely to have an overriding effect on coastal and near-shore ecosystems, and would potentially affect production of e.g. fisheries, freshwater availability, increase frequency and peak floods, etc. The Climate Risks have been analyzed and stated as Medium-level Risk in the new UNEP SRF. E.g. the Vembanad Kol coastal wetlands in Kerala State (one of the project sites) has repeatedly been exposed to extreme weather-induced events. Especially the floods of 2018 have exposed the vulnerability of the Kerala coast, to effects of CC, exacerbated by the degradation of natural wetlands such as Vembanad Kol, which act as natural flood buffers of the landscape. The regular and sometimes severe flooding experienced in this site is affecting local communities; and which is exacerbated by economic development in the area which has resulted in shrinkage and transformation of wetland area, reduced waterholding capacity, clogging of channels, pollution, growth of invasives, and decline in brackishwater fisheries and clam resources.</p> <p>With regards occurrence of natural disasters in the second project site - the Aghanashini Estuary in Karnataka State, it is known that the entire coastline in the state is affected by sometimes severe coastal erosion during the annual monsoon season; yet the project would need to assess additional information data (during the PPG) to confirm whether CC plays a significant role in this.</p> <p>It is assessed that the project incremental support will enhance medium- to long-term climate resilience through the protection, restoration and sustainable utilization of the ecosystem services of NC in the coastal river basins, including support to the Rebuild Kerala Initiative – which aims to catalyze rebuilding of Kerala in a way that addresses key drivers of floods and other natural disasters and climate change risks and strengthens preparedness against future disasters. Additionally, the targeted enhanced protection and management of coastal wetland services, as well as in the associated Aghanashini River watershed in Karnataka, the project will stabilize or increase LULUCF-based carbon sequestration and reduce new emissions due to avoidable conversion.</p> <p>.</p>
Knowledge/information provided		The SEEA-based data systems, analysis and incorporation in planning is fully led by a unit and channeled through both the national ENVIS system based at the MoEFCC with a large national system of District-based data nodes and baseline government funding, a

<p>Simulation provided through NC analysis is not acted upon or has marginal effect on development choices</p>	<p>L</p>	<p>s well as the agreed collaboration with the District Development Authorities, a.o towards Blue Economy Strategies, spatial planning, and collaboration with the Sagarmala Program; funded partially through the Green Skills Development Program, green corporate finance (output 2.1.4) as well as the evolving partnership with the Infrastructure, Tourism and Fisheries sector agencies, led by the Ministry of Shipping – through their Sagarmala Program. The project objective to attain a better environmental sustainability in design and operations of the Sagarmala Program was discussed with the related Ministry and agreed in principle- which indicates willingness to be serious in this respect.</p>
<p>COVID delays to PPG and FSP implementation</p>	<p>M</p>	<p>Although it is expected that much of the COVID impacts in India on daily life; national and international travel; and government operations will have returned to somewhat (new) normal by the end of 2021, delays and challenges are expected during especially the PPG with regards field mission, local situation analysis, stakeholder/gender analysis, and design consultations with local government. It is suggested – as far as PPG funds allow, that the PPG team includes two domestic consultants based in the two targeted States to enable a reasonable level of local engagement and data compilation/analysis.</p>
<p>COVID impacts and opportunities to the funding and operations of the baseline infrastructure programs (e.g. Sagarmala, Rebuild Kerala Initiative and others).</p>	<p>L</p>	<p>Notwithstanding the real impact of COVID on government programming and funding, it is not expected that this will affect the major national missions and investment programs such as Sagarmala and the Rebuild Kerala Initiative, given those funds are already committed and ongoing. Additionally, the Rebuild Kerala Initiative has adopted a broad financing strategy with multiple finance and fiscal measures to generate the needed funding, of which significant amounts through WB loans already secured^[1].</p> <p>We however expect the possibility of delays in implementation of these government investment programs, which is an added opportunity for the GEF project to seek collaboration, and especially to highlight the need and collaborate on a green recovery approach in the targeted investment sites and project river basins; further aided through e.g. the GEF outputs 1.2.2 (NC sector reviews – dependencies, impacts and opportunities for green recovery) and 2.11 (District Blue Economy Strategies – also focusing of opportunities towards green recovery related to impacts of COVID). As part of these outputs, potential policy options and nature-based solutions to be adopted in the post-COVID-19 green recovery process, in the context of the Blue Economy development will be identified and discussed among key stakeholders. Somewhat similar to the mitigation approach to potential CC impact, the project incremental support will enhance medium- to long-term landscape ecological resilience – and indirectly the resilience of e.g. local communities as well as</p>

		s physical infrastructure, through the protection, restoration and sustainable utilization of the ecosystem services of NC in the coastal river basins – which aims to address key drivers of floods and other natural disasters and climate change risks and strengthens preparedness against future disasters.
COVID and impact to project targeted tourism sector	L	One of the largest COVID impacts, globally as well as nationally including in India is the effect to the tourism sector due to significantly reduced travel and visitor numbers. The project targets application of NCA to the a.o the tourism sector, especially with regards building the case to realize both the opportunities as well as the impacts and costs to NC of unsustainable tourism practices; whilst e.g. outputs 1.2.2. and 2.1.1. offer entry points to strengthen green recovery through well planned (eco-)tourism as part of a blue economy development path. However, it is not expected that (i) tourism development will be put on a low burner in India beyond 2021, or that COVID will directly impact to the approach needed as well as implementation of GEF project work related to tourism, given the outputs do not concern the actual operations of tour operators, hotels and related services industry; yet rather focus on the higher level planning, resource allocations and integration in a landscapes approach through the NC valuation and accounting work.

[1] See e.g. 'REBUILD KERALA DEVELOPMENT PROGRAMME - A Resilient Recovery Policy Framework and Action Plan for Shaping Kerala's Resilient, Risk-Informed Development and Recovery

from 2018 Floods, 2019', Rebuild Kerala Initiative.

6. Coordination

Outline the institutional structure of the project including monitoring and evaluation coordination at the project level. Describe possible coordination with other relevant GEF-financed projects and other initiatives.

UNEP will act as a GEF Implementing Agency for this project. The project will be executed at the national level by the Ministry of Environment, Forest and Climate Change, in collaboration with the Ministry of Statistics and Programming, the Ministry of Finance, Ministry of Ports (Sagarmala program), as well as State governments of Karnataka and Kerala, as well as other national and state institutions.

A Project Steering Committee (PSC) will be constituted to serve as the project oversight, advisory and support body for the project and to ensure representation of key stakeholder groups and interests in the project implementation.

The project will follow UNEP standard monitoring, reporting and evaluation processes and procedures. Reporting requirements and templates are an integral part of the UNEP legal instruments, to be signed with the Executing Agencies and the GEF Implementing Agencies. The project M&E plan will be consistent with the GEF Monitoring and Evaluation policy.

Coordination with GEF and other initiatives will be ensured through the MoEFCC and UNEP, who are engaged in related initiatives in India and beyond (e.g. in the Maldives, Thailand, Vietnam). In addition to the programmes and initiatives mentioned in section 2 on baseline projects, this will include coordination and sharing of lessons learned with other national and sub-national initiatives and GEF-funded projects. Initial research has identified few projects, whose coordination potential or best practice are of benefit to incorporate with the proposed project, and which will be further specified and confirmed in the PPG phase.

BIOFIN

This is a US\$55 million programme managed by UNDP-GEF under the Ecosystems and Biodiversity Team. Phase I (2012-2018) has been implemented in partnership with the EU, Germany, Switzerland, Norway and Flanders. It has been implemented in 35 countries and provides innovative steps to measure current biodiversity expenditures, assess financial needs, identify the most suitable finance solutions and provides guidance on how to implement these solutions to achieve national biodiversity targets. BIOFIN is operationalized through three assessments that culminate in a Biodiversity Finance Plan (BFP): (i) The Biodiversity Finance Policy and Institutional Review (PIR) looks into the policy and institutional context for biodiversity finance in the country and identifies the key stakeholders to be involved. (ii) Biodiversity Expenditure Review (BER) analyses public and private expenditures in the country that benefit biodiversity. It establishes past, present and projected expenditures on biodiversity. (iii) Financial Needs Assessment (FNA) estimates the finance required to deliver national biodiversity targets and plans, usually described in the NBSAPs. The BFP identifies and prioritises a mix of suitable finance solutions to reduce the biodiversity finance gap. BIOFIN in India – which recently completed, was a country-driven process and builds on activities undertaken for assessing funding for biodiversity as part of preparing NBAP Addendum 2014. It aims at mainstreaming biodiversity in existing schemes and programmes of government of India through advocacy and capacity building to enhance the investments/ expenditure towards conservation in select sectors. BIOFIN is being implemented at the national level and in three pilot states – Madhya Pradesh, Maharashtra and Uttarakhand through their respective State Biodiversity Boards. India has completed a PIR and BER at the national level and for the states of Uttarakhand and Maharashtra. Investments in the area of biodiversity by private and public corporates have been reviewed. Costing of the NBAP, i.e., FNA is being done by the National Biodiversity Authority (NBA). UNDP is providing technical expertise to the three states in the preparation of the State Biodiversity Action Plans and in their costing component. NBA is taking the lead in the

preparation of the BFP. In May 2019, India's Biodiversity Finance Plan, prepared through BIOFIN was launched, which suggested twelve potential finance solutions to bridge the finance gap for implementing NBAP. The twelve finance solutions include Ecological Fiscal Transfers, as well as other instruments such as Environment Damages Fund that the project will explore as potential instruments to be applied for supporting Blue Economic Growth. In its new phase, BIOFIN initiative is focusing on plotting selected three finance options, including Mainstreaming Biodiversity in the Agricultural Sector, Corporate Social Responsibility and Access and Benefit Sharing. Although the project may not be directly linked with these pilot activities, it will draw on the analysis and recommendations made under the Biodiversity Finance Plan and finance solutions included therein.

Additionally, the project will consult and collaborate where warranted (e.g. joint training on NCA) with the UNEP/GEF NCA initiatives such as in the Philippines ID 10386 'Natural Capital Accounting and Assessment: Informing development planning, sustainable tourism development and other incentives for improved conservation and sustainable landscapes', as well as the soon to start Maldives ID 9668 'Enhancing National Development through Environmentally Resilient Islands (ENDhERI)', the latter much focused on developing marine NC accounts as well as its application to spatial planning, blue economic development and protection of near-shore resources.

Additionally, since 2017, the United Nations Statistics Division (UNSD) and UN Environment have initiated the EU-funded project on NC Accounting and Valuation of Ecosystem Services (NCAVES) led by UNSD and the Central Statistics Office (CSO- MoSPI) – which used the SEEA Framework. Amongst others as part of the project, UNEP is leading development of technical guidance documents on i) valuation of ecosystem services in the context of SEEA-EEA, and ii) the use of SEEA-EEA accounts in policy scenario analysis, both which are essential and very relevant to the GEF project. This project will build a strong technical as well as institutional basis for further efforts under the proposed GEF project, i.e. the tools and guidance that can be applied in the analysis of impacts on natural capital at the selected sites in Aghanashini Estuary (Karnataka) and Vembanad-Kol (Kerala), as well as through the national partnership collaboration with key agencies such as UNSD, TEEB as well as MoSPI will be guaranteed to run well. For more details please see section 1.2 on baseline programs.

7. Consistency with National Priorities

Is the Project consistent with the National Strategies and plans or reports and assessments under relevant conventions

Yes

If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc

India has demonstrated a strong commitment to upholding the Convention on Biological Diversity (CBD), with the country having submitted its Sixth National Report (NR6) to CBD showing tremendous progress towards meeting the global targets. The Indian National Biodiversity Strategy and Action Plan (NBSAP) identifies threats to biodiversity conservation and has identified actionable strategies to address them. The project is aligned with many of the NBSAP priorities, such as Section 3.1 which states that solutions must be found to address habitat fragmentation, degradation, and loss. The project is consistent with India's policies and priorities with regard to NC and its obligations under the CBD, in particular in its direct contribution towards attaining Aichi Biodiversity Targets 2 and 3, which include the integration of biodiversity values into national and local development planning processes, as well as into national accounting and reporting systems, and the development and application of positive incentives for the conservation and sustainable use of biodiversity. The project is also fully in line with national level efforts towards the implementation of SDGs, particularly SDG 14 (particularly Targets 14.1, 14.2 and 14.5) and SDG 15 (particularly Targets 15.1, 15.5, 15.9 and 15.a). The project is also aligned with India's commitment under Ramsar Convention, wherein it is committed to ensure wise use of all wetlands, especially those designated as Wetlands of International Importance (Ramsar Site). Vembanad- Kol is a designated Ramsar Site, and Aghanashini Estuary has been identified as a potential Ramsar Site. Implementation of this project shall also benefit management of other Ramsar Sites of India facing conservation-development tradeoffs. The two sites have also been identified as flyway network sites under India's National Action Plan for Conservation of Migratory Birds and their Habitats in Central Asian Flyway (prepared as part of India's commitment under Bonn Convention, of which India is holding the Conference of Parties' Presidency for 2020-2023). Conservation of wetlands is also aligned with India's NDC

8. 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 project’s communications, outreach and engagement strategy will capture best practice generated by the project and make this information available for dissemination to other corporate, public or smallholders in the targeted provinces and nationally through the evolving partnership. Furthermore, the project will draw on knowledge, expertise, and networks associated with various existing initiatives managed by UNEP, such as TEEB (particularly relating to its work with the UN Statistics Division and the CBD Secretariat in promoting SEEA-EEA, as well as the ‘TEEB for Agriculture & Food’ initiative), UNEP-FI’s Natural Capital Declaration and Natural Capital Coalition (formerly ‘TEEB for Business’), and the work relating to assessments of biodiversity and ecosystem services facilitated under the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) and the Sub-global Assessments (SGA) Network- a network of practitioners and policy-makers involved in undertaking ecosystem services assessments. Please see Output 3.1.1 ‘Communication, outreach and engagement strategy for adoption of SEEA-based NC accounting developed and implemented’ and Output 3.1.2 ‘Knowledge management platform and impact performance M&E developed to support policy makers and practitioners in India in adopting, replicating and mainstreaming NC accounting’ in section 3.3 for more details on KM and its approach adopted for this project.

Opportunities will be provided for policymakers and experts involved in the project to participate in networking and capacity building opportunities provided under these initiatives, and to share knowledge and experiences gained through the project in related fora. At the same time, the project will benefit significantly from international and regional expertise available through these major initiatives, through provision of technical support and involvement of selected experts from those networks.

9. Environmental and Social Safeguard (ESS) Risks

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

Overall Project/Program Risk Classification*

PIF	CEO Endorsement/Approval	MTR	TE
Low			

Measures to address identified risks and impacts

Provide preliminary information on the types and levels of risk classifications/ratings of any identified environmental and social risks and potential impacts associated with the project (considering the GEF ESS Minimum Standards) and describe measures to address these risks during the project design.

Supporting Documents

Upload available ESS supporting documents.

Title	Submitted
SRIF - India NCA and blue econmy project - ver3 cleared Yunae for PIF resubmission	

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): (Please attach the Operational Focal Point endorsement letter with this template).

Name	Position	Ministry	Date
Richa Sharma	Joint Secretary & GEF Operational Focal Point	MINISTRY OF ENVIRONMENT, FORESTS AND CLIMATE CHANGE	2/19/2020

ANNEX A: Project Map and Geographic Coordinates

Please provide geo-referenced information and map where the project intervention takes place

The two proposed project sites are Aghanashini Estuary and Watershed in Karnataka State, and the Vembanad-Kol Wetlands in Kerala State. The prepared maps for those sites provide an indication of location , connectivity with regards hydrology/river/watershed systems, and their proximity to areas with high biodiversity

Coordinate for Aghanashini landscape , Karnataka:

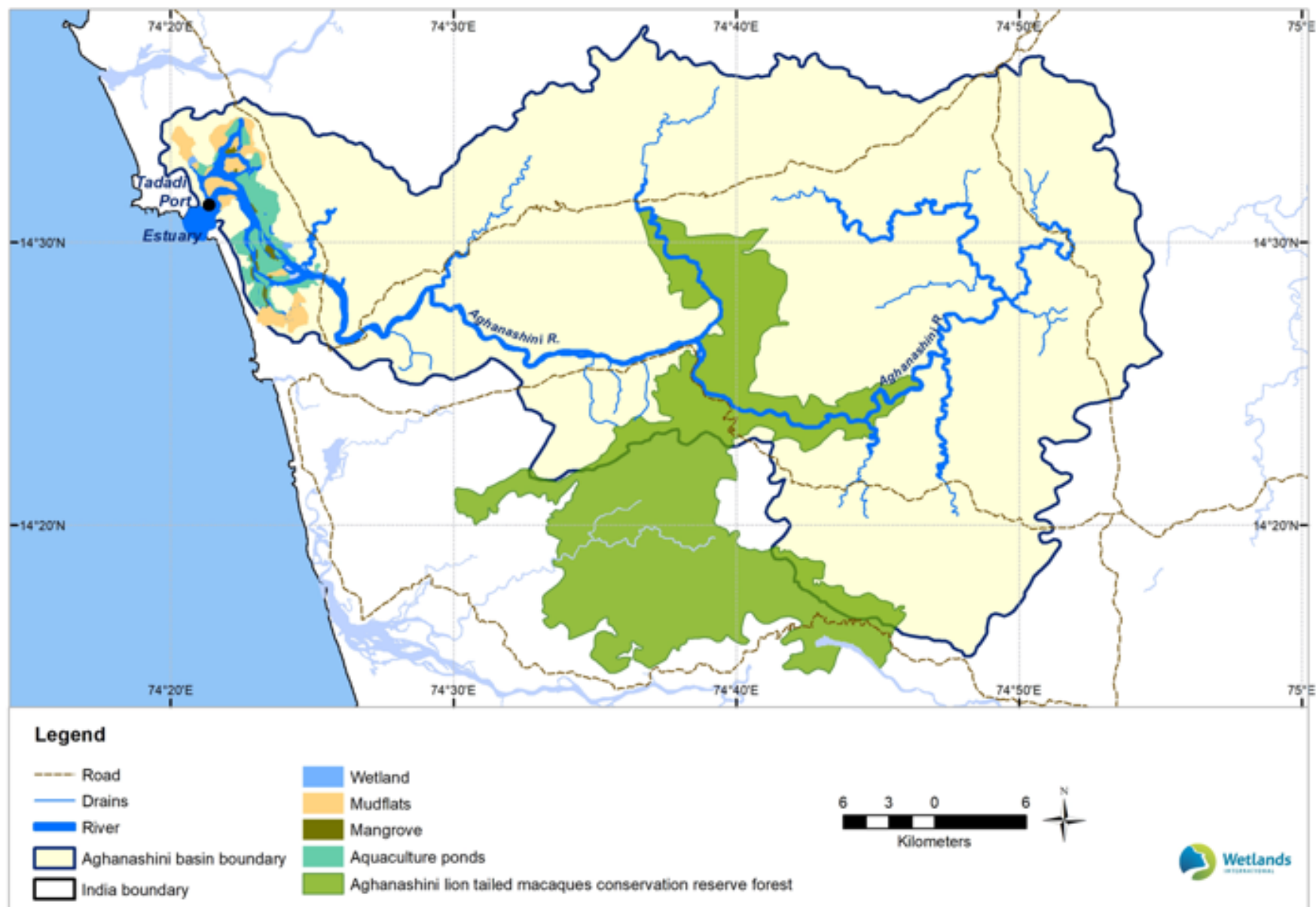
74040' E 14025' N

Coordinate for Vembanad -Kol wetland, Kerala

76020' E 9040' N

A: Aghanashini Estuary and Watershed , Karnataka

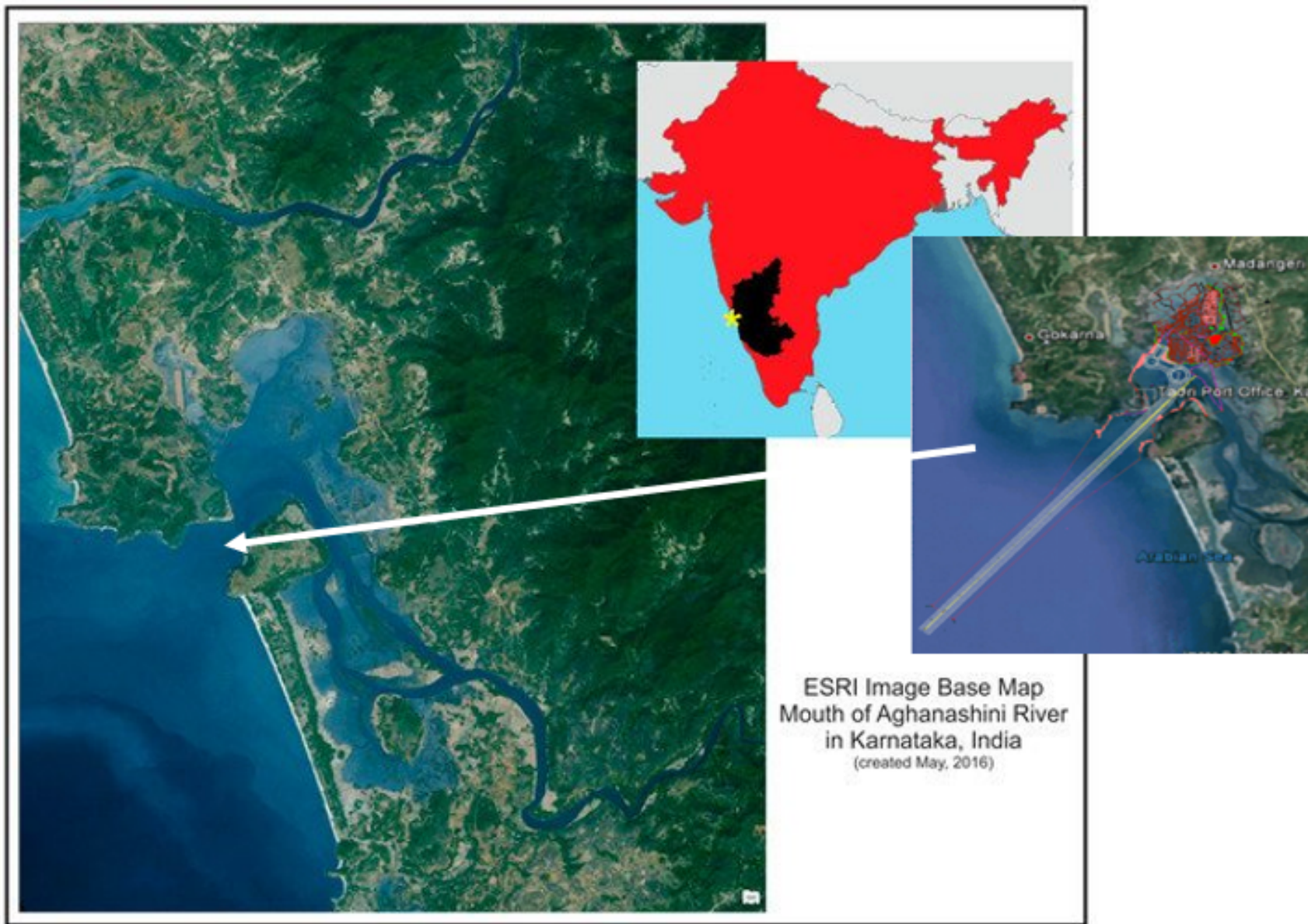
River Basin (*project working area*) of Aghanashini Estuary, river and watershed:





Proposed upgrading of Tadadi Port, including long breakwater:

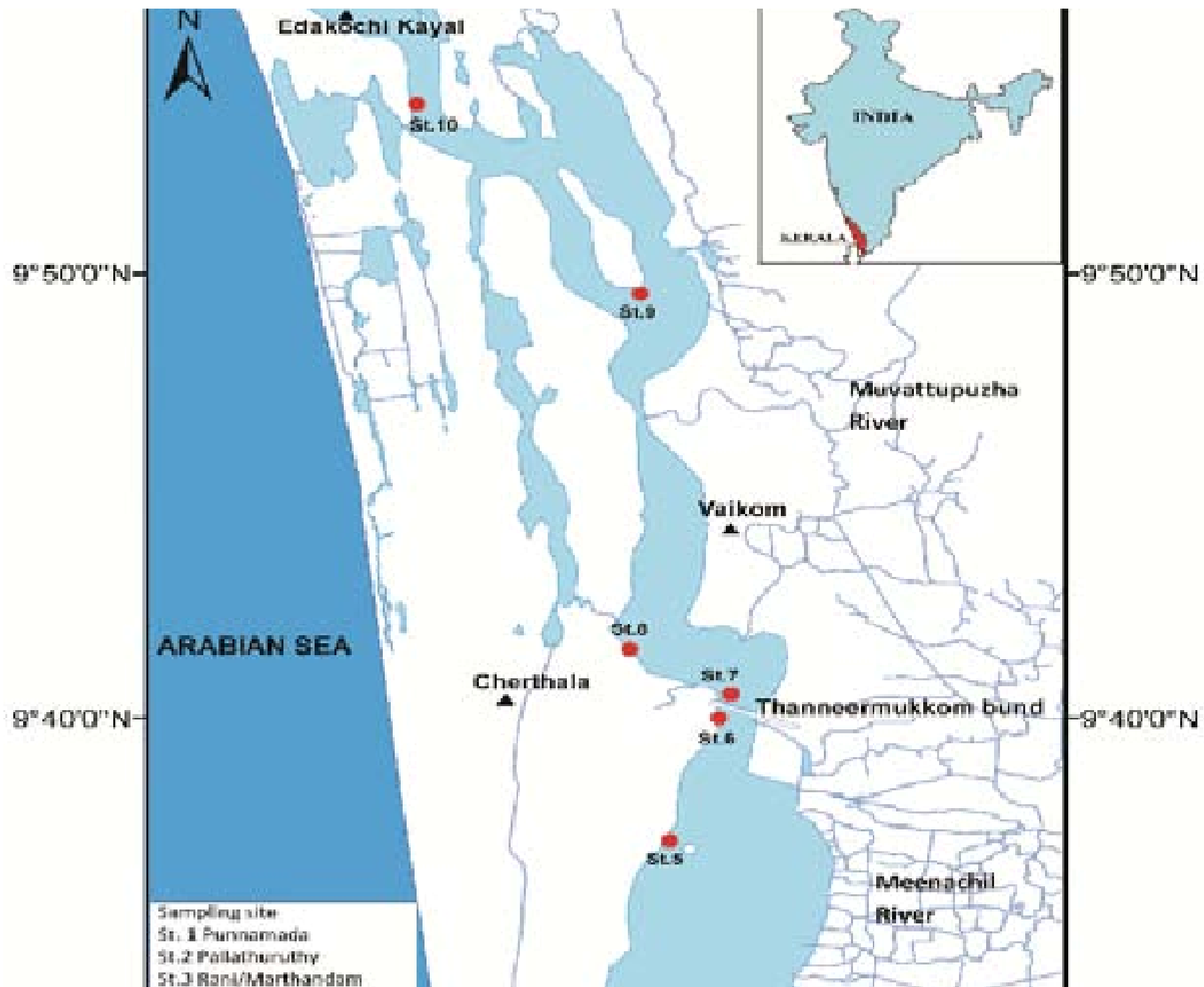


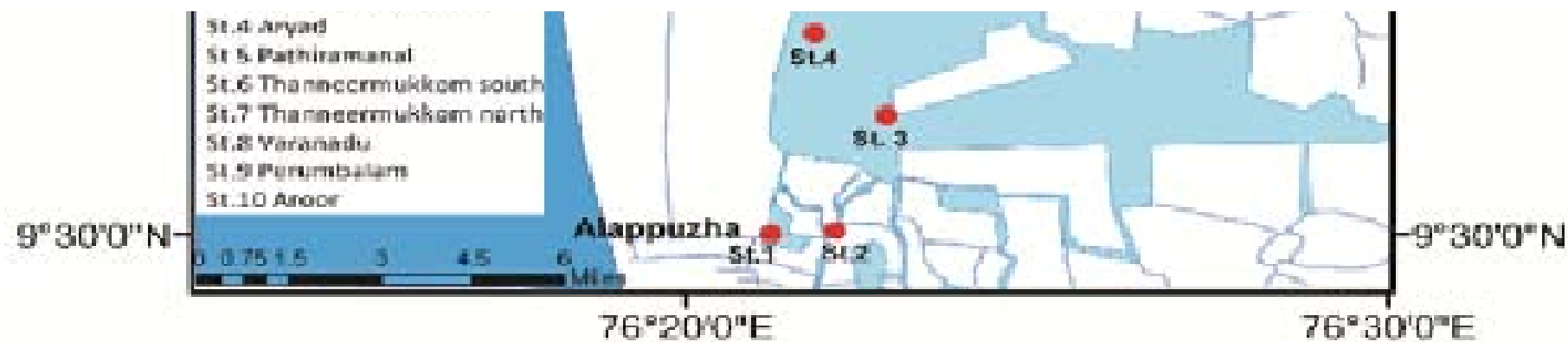


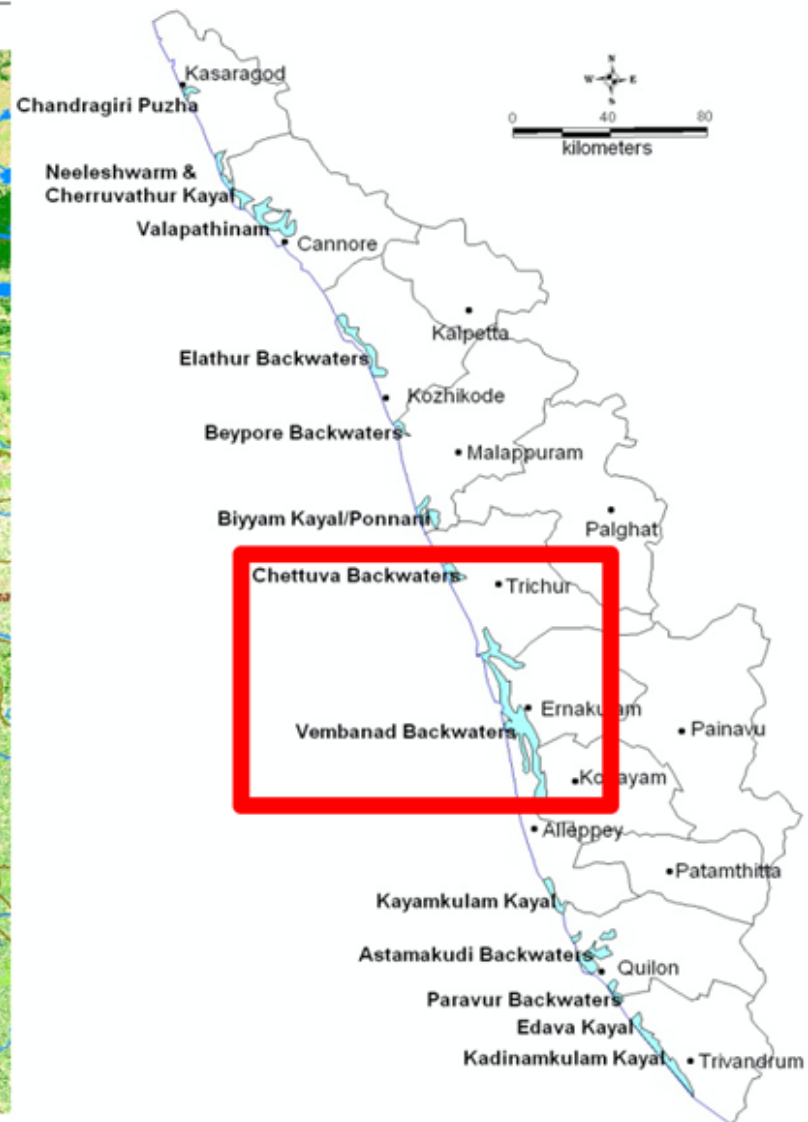
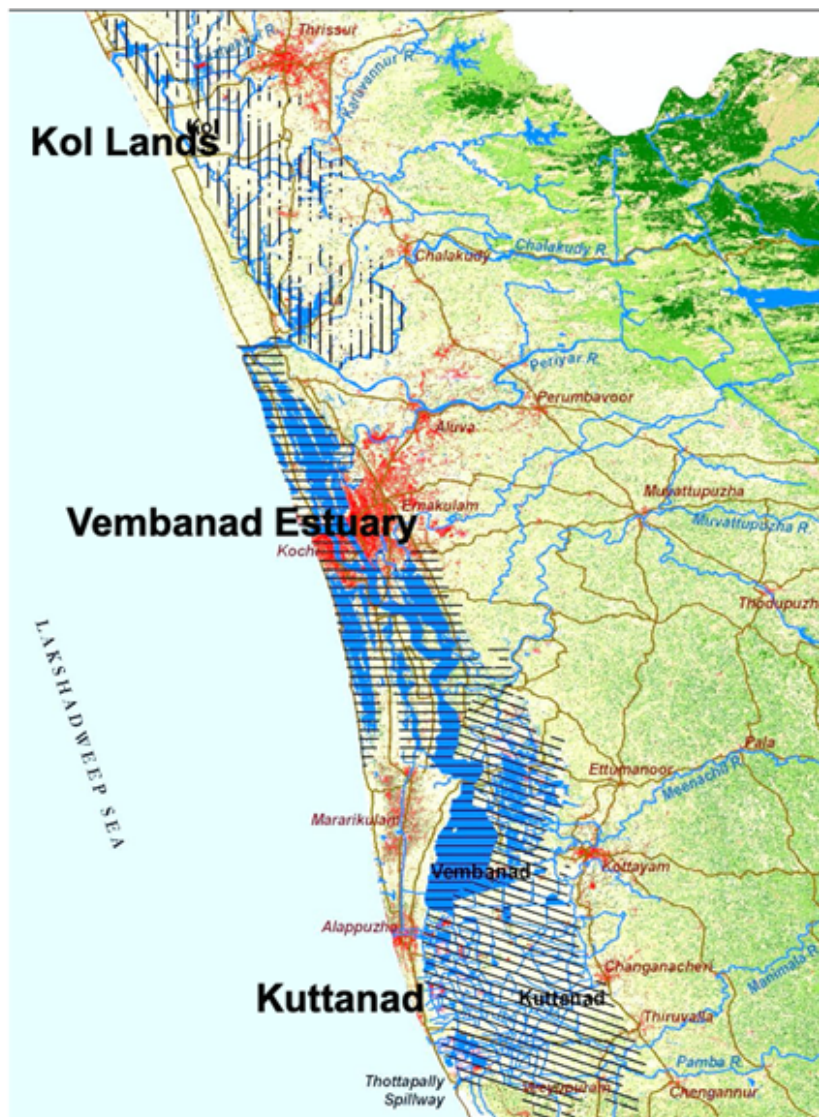
B: Vembanad-Kol Wetlands, Kerala

Location and main water bodies/wetlands:





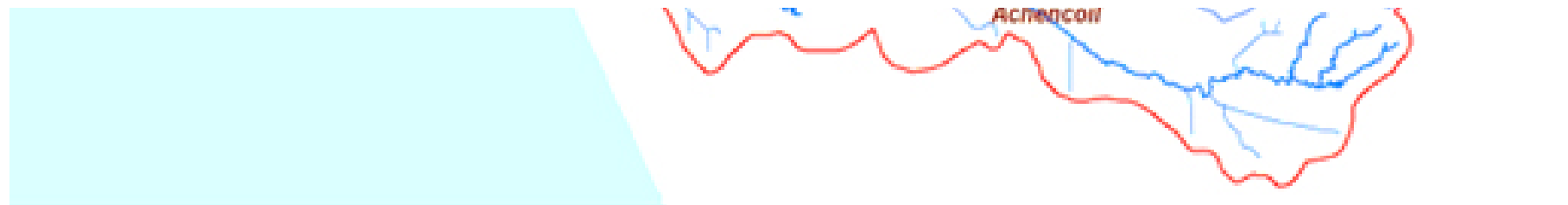




River basin boundaries (project working area) draining into Vembanad-Kol wetlands:







Legend

-  Dams / Regulators
-  Roads
-  Rivers / Canals
-  Waterbodies
-  Basin boundary

