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Report No: PAD00142

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED LOAN
IN THE AMOUNT OF US\$141.65 MILLION

AND A

PROPOSED LOAN
IN THE AMOUNT OF JPY 10,235.7 MILLION (US\$70.99 MILLION EQUIVALENT)

TO

INDIA

FOR A

STRENGTHENING COASTAL RESILIENCE AND THE ECONOMY PROJECT

AS PHASE 1 OF THE STRENGTHENING COASTAL RESILIENCE AND THE ECONOMY PROGRAM
USING A MULTI-PHASE PROGRAMMATIC APPROACH
WITH AN OVERALL FINANCING ENVELOPE OF US\$850 MILLION

JULY 30, 2025

Environment Global Practice
South Asia Region

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CURRENCY EQUIVALENTS

(Exchange Rate Effective {June 30, 2025})

Currency Unit = INDIAN RUPEE (INR)

US\$1 = JPY 144.19

US\$1 = INR 85.67

JPY 1 = INR 0.60

FISCAL YEAR

April 1 - March 31

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ABBREVIATIONS AND ACRONYMS

CERC	Contingent Emergency Response Component	PP	Procurement plans
COE	Centre of Excellence	PPSD	Project Procurement Strategy for Development
CPF	Country Partnership Framework	PrDO	Program Development Objective
CRI	Corporate Results Indicator	SHG	Self Help Group
CRZ	Coastal Regulation Zone	SHORE	Strengthening Coastal Resilience and the Economy
CZM	Coastal Zone Management	SLEC	State-Level Empowered Committee (in Karnataka)
DPMU	District Project Management Unit	SMP	Shoreline Management Plan
E&S	Environmental and Social	SPMU	State Project Management Unit
EPR	Extended Producer Responsibility	STEP	Systematic Tracking of Exchanges in Procurement
ESCP	Environmental and Social Commitment Plan	TNGCC	Tamil Nadu Green Climate Company
ESMF	Environmental and Social Management Framework	WBG	World Bank Group
ESMP	Environmental and Social Management Plan		
FM	Financial management		
FY	Fiscal year		
GDP	Gross domestic product		
GHG	Greenhouse gas		
GRS	Grievance Redress Service		
HPSC	High-Powered Steering Committee (in Tamil Nadu)		
IBRD	International Bank for Reconstruction and Development		
ICZM	Integrated Coastal Zone Management		
ICZMP	Integrated Coastal Zone Management Plan		
IFC	International Finance Corporation		
IPF	Investment Project Financing		
KERS	Karnataka Eco-Restoration Society		
MPA	Multiphase Programmatic Approach		
MRF	Material Recovery Facility		
CO ₂	Carbon dioxide		
NBS	Nature-based solutions		
NCCR	National Centre for Coastal Research		
NCM	National Coastal Mission		
NCSCM	National Centre for Sustainable Coastal Management		
NDC	Nationally Determined Contribution		
PDO	Project Development Objective		
PEA	Project Executing Agency		
PIE	Project Implementing Entity		
PIP	Project Implementation Plan		



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**DATASHEET****BASIC INFORMATION**

Project Beneficiary(ies)	Operation Name		
India	Strengthening Coastal Resilience and the Economy Project		
Operation ID	Financing Instrument	Environmental and Social Risk Classification	
P180932	Investment Project Financing (IPF)	Substantial	

Financing & Implementation Modalities

☒ Multiphase Programmatic Approach (MPA)	☒ Contingent Emergency Response Component (CERC)
☐ Series of Projects (SOP)	☐ Fragile State(s)
☐ Performance-Based Conditions (PBCs)	☐ Small State(s)
☐ Financial Intermediaries (FI)	☐ Fragile within a non-fragile Country
☐ Project-Based Guarantee	☐ Conflict
☐ Deferred Drawdown	☐ Responding to Natural or Man-made Disaster
☐ Alternative Procurement Arrangements (APA)	☐ Hands-on Expanded Implementation Support (HEIS)

Expected Approval Date	Expected Closing Date	Expected Program Closing Date
09-Sep-2025	30-Jun-2031	28-Jun-2033
Bank/IFC Collaboration		
No		

MPA Program Development Objective

Increase the resilience of targeted coastal communities and ecosystems.

MPA FINANCING DATA (US\$, Millions)



MPA Program Financing Envelope	1,282.10
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Components

Component Name	Cost (US\$)
Strengthening institutions for Integrated Coastal Zone Management	31,926,608.00
Shoreline management, coastal protection, and conservation	162,128,048.00
Improving livelihoods for natural resource dependent communities	41,533,299.00
Enhancing marine pollution management and plastic circularity	52,995,449.00
Project Management	15,188,024.00
Contingent Emergency Response Component	0.00

Organizations

Borrower:	India
Implementing Agency:	Department of Environment, Climate Change, and Forests, State of Tamil Nadu, Department of Forest, Ecology, and Environment, State of Karnataka

MPA FINANCING DETAILS (US\$, Millions)

MPA Program Financing Envelope:	1,282.10
of which Bank Financing (IBRD):	850.00
of which Bank Financing (IDA):	0.00
of which Other Financing sources:	432.10

PROJECT FINANCING DATA (US\$, Millions)**Maximizing Finance for Development**

Is this an MFD-Enabling Project (MFD-EP)?	Yes
Is this project Private Capital Enabling (PCE)?	Yes

SUMMARY

Total Operation Cost	303.77
Total Financing	303.77



of which IBRD/IDA	212.64
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Bank for Reconstruction and Development (IBRD)	212.64
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Non-World Bank Group Financing

Counterpart Funding	91.13
Borrower/Recipient	91.13

Expected Disbursements (US\$, Millions)

WB Fiscal Year	2026	2027	2028	2029	2030	2031
Annual	18.00	47.00	58.00	42.00	31.00	16.64
Cumulative	18.00	65.00	123.00	165.00	196.00	212.64

PRACTICE AREA(S)

Practice Area (Lead)

Environment, Natural Resources & the Blue Economy

Contributing Practice Areas

Urban, Resilience and Land; Water

CLIMATE

Climate Change and Disaster Screening

Yes, it has been screened and the results are discussed in the Operation Document

SYSTEMATIC OPERATIONS RISK- RATING TOOL (SORT)

Risk Category	Rating
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1. Political and Governance	● Moderate
2. Macroeconomic	● Moderate
3. Sector Strategies and Policies	● Moderate
4. Technical Design of Project or Program	● Moderate
5. Institutional Capacity for Implementation and Sustainability	● Substantial
6. Fiduciary	● Substantial
7. Environment and Social	● Substantial
8. Stakeholders	● Substantial
9. Overall	● Substantial
Overall MPA Program Risk	● Substantial

POLICY COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

☐ Yes ☒ No

Does the project require any waivers of Bank policies?

☐ Yes ☒ No

ENVIRONMENTAL AND SOCIAL

Environmental and Social Standards Relevance Given its Context at the Time of Appraisal

E & S Standards	Relevance
ESS 1: Assessment and Management of Environmental and Social Risks and Impacts	Relevant
ESS 10: Stakeholder Engagement and Information Disclosure	Relevant
ESS 2: Labor and Working Conditions	Relevant
ESS 3: Resource Efficiency and Pollution Prevention and Management	Relevant
ESS 4: Community Health and Safety	Relevant
ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Relevant
ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant



ESS 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Relevant
ESS 8: Cultural Heritage	Relevant
ESS 9: Financial Intermediaries	Not Currently Relevant

NOTE: For further information regarding the World Bank's due diligence assessment of the Project's potential environmental and social risks and impacts, please refer to the Project's Appraisal Environmental and Social Review Summary (ESRS).

LEGAL

Legal Covenants

Sections and Description

The Project Implementing Entity (PIE) shall maintain throughout implementation of the Respective Part of the Project, the State-Level Empowered Committee ("SLEC") to be responsible for providing oversight and guidance and ensuring coordination and implementation of activities of the Respective Part of the Project (Section I.A.2 of the Schedule to the Karnataka Project Agreement).

The PIE shall: (a) maintain the Karnataka Project Management Unit ("KPMU") within the KERS throughout implementation of the Respective Part of the Project; (b) ensure that the KPMU is provided with financial resources, functions and competencies, as shall be required to carry out the day-to-day management and coordination of implementation, monitoring and evaluation of the Project, all as set forth in the KPIP; and (c) implement, by not later than three (3) months after the Effective Date, the Tally at the KPMU, as set forth in detail in the KPIP (Section I.A.3 of the Schedule to the Karnataka Project Agreement).

The PIE shall maintain the Karnataka District Project Management Units ("KDPMUs") throughout implementation of the Respective Part of the Project (Section I.A.4 of the Schedule to the Karnataka Project Agreement).

The PIE shall maintain the Karnataka Project Executing Agencies ("KPEAs") throughout implementation of the Respective Part of the Project (Section I.A.5 of the Schedule to the Karnataka Project Agreement).

(1) The PIE, through the KPMU, shall: (a) maintain throughout the implementation of the Respective Part of the Project, the Karnataka Project Implementation Plan ("KPIP"), acceptable to the Bank; and (b) prepare and adopt, by not later than three (3) months after the Effective Date, and thereafter maintain, throughout the implementation of the Respective Part of the Project, a financial management manual in form and with substance satisfactory to the Bank ("Karnataka FM Manual"). (2) The PIE, through the KPMU and the KPEAs, shall carry out the Respective Part of the Project in accordance with the provisions of the KPIP and the Karnataka FM Manual (Section I.B.1 and 2 of the Schedule to the Karnataka Project Agreement).

The PIE shall maintain throughout implementation of the Respective Part of the Project, the Tamil Nadu High-Powered Steering Committee ("TNHPSC") to be responsible for providing oversight and guidance and ensuring coordination and implementation of activities of the Respective Part of the Project (Section I.A.2 of the Schedule to the Tamil Nadu Project Agreement).

The PIE shall: (a) maintain the Tamil Nadu Project Management Unit ("TNPMU") within the TNGCC throughout implementation of the Respective Part of the Project; (b) ensure that the TNPMU is provided with financial resources, functions and competencies, as shall be required to carry out the day-to-day management and coordination of implementation, monitoring and evaluation of the Project, all as set forth in the TNPIP; and (c) implement, by not later



than three (3) months after the Effective Date, the Tally at the TNPMU, as set forth in detail in the TNPIP (Section I.A.3 of the Schedule to the Tamil Nadu Project Agreement).

The PIE, through the TNPMU, shall maintain the Tamil Nadu Project Executing Agencies (“TNPEAs”) throughout implementation of the Respective Part of the Project (Section I.A.4 of the Schedule to the Tamil Nadu Project Agreement).

(1) The PIE, through the TNPMU, shall: (a) maintain throughout the implementation of the Respective Part of the Project, the Tamil Nadu Project Implementation Plan (“TNPIP”), acceptable to the Bank; and (b) prepare and adopt, by not later than three (3) months after the Effective Date, and thereafter maintain, throughout the implementation of the Respective Part of the Project, a financial management manual in form and with substance satisfactory to the Bank (“Tamil Nadu FM Manual”). (2) The PIE, through the TNPMU and the TNPEAs, shall carry out the Respective Part of the Project in accordance with the provisions of the TNPIP and the Tamil Nadu FM Manual (Section I.B.1 and 2 of the Schedule to the Tamil Nadu Project Agreement).

(1) Prior to the use of drones under the Respective Part of the Project, the PIE shall: (a) notify the Bank of such proposed use and assess any risks related to such use, including operational, legal and regulatory, institutional, technical, social and environmental, and fiduciary risks, and to recommend appropriate mitigation measures; and (b) develop a risk mitigation plan for the use of drones in form and substance satisfactory to the Bank. (2) No drones shall be procured/or used under a Project Implementing Entity’s Respective Parts of the Project unless such Project Implementing Entity has implemented the risk mitigation measures in accordance with the paragraph 1 above, in form and manner satisfactory to the Bank. (Sections I.F of the Schedule to the Tamil Nadu Project Agreement and the Karnataka Project Agreement).

Conditions

Type	Citation	Description	Financing Source
Disbursement	Disbursement Conditions	No withdrawal shall be made: (a) for payments made prior to the Signature Date, except that withdrawals up to an aggregate amount not to exceed: (i) \$28,330,000 for Loan TN; and (ii) JPY 2,047,140,000 for Loan KN, may be made for payments made prior to this date but on or after October 1, 2024, for Eligible Expenditures under Categories (1) and (2), respectively; (b) for Emergency Expenditures under Category (3), unless and until all of the following conditions have	IBRD/IDA



		been met in respect of said expenditures: (i) (A) the Borrower, and/or the respective Project Implementing Entity, as the case may be, has/have determined that an Eligible Crisis or Emergency has occurred, and has/have furnished to the Bank a request to withdraw Loan amounts under Category (3); and (B) the Bank has agreed with such determination, accepted said request and notified the Borrower, and/or the respective Project Implementing Entity, as the case may be, thereof; and (ii) the Borrower, and/or the respective Project Implementing Entity, as the case may be, has/have adopted the CERC Manual and Emergency Action Plan, in form and substance acceptable to the Bank.	
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I. STRATEGIC CONTEXT

A. Sectoral and Institutional Context

1. **Abundant marine and coastal resources are the cornerstone of India's blue economy, which contributed around 4 percent to India's gross domestic product (GDP) during 2014–2017.** Indian coastal areas along 11,099 kilometers coastline are home to 250 million people. The exclusive economic zone, which covers more than 2 million square kilometers, supports key economic sectors such as fisheries, agriculture, transport, mining, and tourism. The fishing industry, alone, employs more than 4 million people. India has embarked on a mission to capture the untapped growth potential of the blue economy through optimal use and protection of its marine and coastal resources. This is a priority embedded in the "Vision of New India by 2030" (Vision 2030) adopted by the Government, acknowledging the opportunity of the blue economy to power economic growth. Vision 2030 prioritizes the protection of India's natural resources and rich biodiversity. To act upon these priorities, Indian coastal states need public support to protect critical marine and coastal ecosystems as the foundation for their economic development and heightened resilience.
2. **In line with the renewed emphasis on sustainability, the Vision 2030 also prioritizes climate resilience by implementing measures to adapt to climate change, protect marine biodiversity, and promote sustainable use of aquatic resources.** Over the years, the health of India's coastal ecosystems and habitats have deteriorated due to multiple climate-induced stressors. India has 133 marine protected areas that conserve biodiversity, and its coastline provides habitats for 18,000 known species of flora and fauna. These habitats include mangrove forests, sand dunes, coastal wetlands, coral reefs, mudflats, and reserved forests that deliver ecosystem services and support local community livelihoods. Mangrove forests, seagrasses, and tidal salt marshes are important carbon sinks. These critical ecosystems bear the brunt of climate change pressures, and any significant losses of ecosystem functions will inevitably impact India's economy and food security.
3. **Risks from pollution, overfishing, and coastal development exacerbated by climate change increase the vulnerability of coastal communities.** Urban sprawl, construction, and sandmining adversely affect marine ecosystems and cause coastal land erosion. Large stretches of the coast are eroding, affecting communities and livelihoods. India's eastern coast is eroding faster than the west coast due to strong littoral drift, threatening the marine ecosystems and livelihoods. The National Centre for Coastal Research (NCCR) reports that one-third of the Indian coastline is vulnerable to coastal erosion. While coastal landscapes such as mangroves, wetlands, and sand dunes serve as natural buffers against cyclones and storm surges, and protect commercially important marine habitats, continuing coastal erosion could inflict economic losses, especially among impoverished coastal communities. Coastal areas are greatly affected by saline intrusion impacting the quality of groundwater used for drinking and agriculture, further increasing water and food insecurity. These negative impacts have altered the ecosystem functions and resilience, which necessitates proactive measures to avoid long-term economic losses.
4. **Pollution from land-based sources (industrial, agricultural, and municipal waste) directly damages marine habitats and species (e.g., fish, turtles, and seabirds).** Plastic leakage into coastal waters and the lack of effective actions to reduce plastic waste footprints of coastal communities is a growing concern. In 2020, India generated 3.4 million tons of plastic waste, with coastal regions contributing 62 percent of the total waste.¹ The Ganges-Brahmaputra River system flowing mainly through India is the

¹ Dhodapkar et al. 2023. "National Circular Economy Roadmap for Reducing Plastic Waste in India." Commonwealth Scientific and Industrial Research Organisation, Australia.



sixth ranking contributor to plastic pollution in the Indian Ocean.² Plastic pollution damages valuable marine habitats, impacts mangrove root systems and marine biota, affects the quality of marine products, and exacerbates flooding. Marine plastic debris also inflicts damage to industries and communities and undermines the potential of coastal tourism. In some states, coastal districts have established systems for separation of dry and organic waste, but system inefficiencies have led to continuous plastic leakage into the environment. Plastic litter problems in the states are likely to intensify without effective ‘upstream’ and ‘downstream’ interventions for control and prevention at the source and cost-effective removal of plastics in stormwater drainage systems and water bodies. There is untapped potential to augment the socioeconomic benefits from combined ecosystem protection and measures to prevent plastic leakage.

5. **Women are disproportionately excluded from economic and employment opportunities.** Indian coastal states have female labor force participation rates of around 30 percent. This is on par with the national average of 32.7 percent, where, nationally, the gap between male and female labor force participation is 57 percentage points.³ Women are culturally excluded from jobs such as fishing, suggesting that the employment gap may be even wider in coastal districts. Consequently, female livelihood activities are sometimes limited to the informal economy, e.g., drying fish nets and selling produce in local markets.

6. **The coast of the state of Tamil Nadu, which borders the Indian Ocean on the South and East, faces multiple climatic and pollution threats.** The 1,069-kilometer coastline and estuaries are endowed with valuable ecosystems like coral reefs and seagrass meadows, sand dunes and turtle nesting sites which, however, experience increasing climate change pressures and severe weather events. In the past three decades, under natural and climatic pressures, around one-third of Tamil Nadu’s coastline has eroded.⁴ Natural processes have been exacerbated by human activities, rapid urban development, and sandmining. Plastic waste has become a major problem for Tamil Nadu’s coastal communities as it clogs drainage systems and pollutes the aquatic environment. In 2019, Tamil Nadu was the first state to ban single-use plastics, preceding a nationwide ban in 2022, and the Tamil Nadu Vision 2030 advocates strategic actions involving structural and nonstructural measures, river rejuvenation, watershed development, and nature-based approaches to manage plastic pollution risks. The vast coastline of Tamil Nadu supports a variety of industries such as fishing and tourism, which could suffer economic losses due to the changing marine environment and declining productivity of ecosystems.

7. **The coast of the state of Karnataka, which is in the southwest region of India and borders Arabian Sea to the West, is under growing pressures from erosion and plastic pollution.** According to the NCCR and the National Centre for Sustainable Coastal Management (NCSCM), over a fifth of the state’s coastline of 343 kilometers experienced erosion between 1990 and 2016 due to natural processes and human factors. The construction of infrastructure and sandmining is affecting coastal habitats and vulnerable species, such as the olive ridley turtle. Seawalls and groynes originally constructed to mitigate the risk from coastal storms had increased erosion patterns and inflicted shoreline changes. Karnataka’s coastal areas are also highly impacted by plastic waste. The Karnataka State Pollution Control Board has estimated that the state generates around 300,000 tons of plastic waste annually, much of which reaches the coastline and leaves beaches heavily littered.⁵ While the state bans the use of plastic bags, additional measures are needed to effectively manage plastic pollution and aid communities to actively engage in

² Schmidt et al. 2017. “Export of plastic debris by rivers into the sea.” *Environmental Science and Technology* 51: 12246–12253.

³ World Bank Gender Data Portal.

⁴ Sekar et al. 2024. “Assessment of shoreline changes and associated erosion and accretion pattern in coastal watersheds of Tamil Nadu, India.” *Natural Hazards Research* 4 (2): 231–238.

⁵ Kaladharan et al. 2017. “Prevalence of Marine Litter along the Indian Beaches.” *Journal of the Marine Biological Association of India* 59 (1): Jan–Jun 2017.



preventing plastic leakage. Furthermore, plastic waste recycling levels are low in Karnataka, with recycling facilities able to handle only 57 percent of the generated plastic waste.

8. **Institutional weaknesses constrain the capacity of states to sustainably manage coastal resources and secure their resilience for the benefit of coastal communities.** State institutions have limited technical knowledge, infrastructure, and resources, which constrains the monitoring and enforcement of coastal regulations and zoning plans. Insufficient institutional coordination compounds these challenges. To overcome these institutional limitations and achieve India's aspirations for resilient economic growth in the coastal areas, the Government of India aims to apply emerging global models for integrated coastal zone management, capacity development, and preservation of ecosystem services. This includes promoting nature-based solutions (NBS) to complement existing tested models and enhancing the capacity of natural systems to mitigate risks and provide critical ecological services. For example, constructed wetlands could effectively increase flood control by storing and slowly releasing runoffs, and healthy mangroves could effectively mitigate storm surges and prevent coastal erosion. However, states lack the technical know-how and financial resources to deploy NBS because of the challenging risk-return profile of conservation and adaptation investments. States need resources to address current institutional weaknesses to prevent long-term decline of critical coastal and marine assets.

9. **India's national policy framework for management of coastal areas is governed by the Coastal Regulation Zone (CRZ) Notification of 2019.** The CRZ Notification draws on the Integrated Coastal Zone Management (ICZM) principles and aims to promote sustainable coastal development by defining and demarcating zones (e.g., Ecologically Sensitive Areas, Critically Vulnerable Coastal Areas) and permitted activities within those zones. The national and state governments are mandated to implement the CRZ Notification and directives through Shoreline Management Plans (SMPs) developed by states, where NBS (green and hybrid infrastructure) are prioritized for coastal protection. The Ministry of Environment, Forests, and Climate Change oversees implementation of India's Coastal Zone Management (CZM) policies mandated by the CRZ Notification 2019 and Island Coastal Regulation Zone Notification 2019 regarding India's coasts and islands, respectively. To address issues of coastal pollution, India enacted the Plastic Waste Management Rules in 2016, providing the regulatory framework to manage plastic waste. The NCCR has begun monitoring marine litter along the coast to tackle plastic leakage and promote plastics circularity. Furthermore, the Ministry rolled out a pilot program that awarded selected beaches with "Blue Flag Certification," thus promoting tourism and economic development in those areas.⁶

10. **India has positioned itself as a world leader in blue growth, aiming to advance the sustainable use of its coastal and ocean resources and promote resilient and prosperous communities that can cope with climate shocks.** Under India's Presidency in 2023, the G20 committed to harness and preserve the blue economy, protecting marine biodiversity and reducing ocean plastic pollution. Blue growth is now embedded in the National Coastal Mission (NCM) launched in 2014, which directs implementation of ICZM and mainstreaming of climate adaptation and mitigation into the sustainable management of coastal and marine ecosystems. The NCM also highlights that protecting coastal natural assets from pollution is critical for sustainable blue growth. The Government of India has allocated funding for the implementation of the NCM in the 2024–2025 budget, demonstrating its commitment to the blue economy agenda.

11. **India's current policies and regulations promote an increasing role for the private sector in boosting the marine and coastal economy and support to coastal communities.** Private sector investments in the blue economy have so far been in sectors such as fisheries and tourism, but there are

⁶ "Blue flag" certification requires local authorities and beach operators to achieve standards across four categories: environmental education/information, bathing water quality, environmental management, and safety and services.



opportunities to stimulate private sector investments in emerging sectors such as waste management including material segregation and recycling in support of plastics circularity, which can reduce pollution pressures in coastal areas; seaweed cultivation; and aquaculture. The Extended Producer Responsibility (EPR) approach, whereby producers pay for the disposal of their products, was embraced by the Government of India in 2022 through new plastic waste guidelines; however, India's Plastic Waste Management Rules of 2016 and the EPR approach have not been fully implemented in many parts of the country due to weak monitoring frameworks, limited infrastructure for waste segregation, lack of industry participation, and the unavailability of reliable alternatives to plastics.

12. India can capitalize on the current momentum and direct more resources toward enhancing the value of blue economy assets for sustained socioeconomic growth through cross-sectoral interventions in the states aiming to achieve: (a) a resilient coastline through NBS, (b) resilient coastal and marine habitats providing healthy ecosystem services, (c) pollution mitigation, and (d) resilient communities and livelihood opportunities. The Strengthening Coastal Resilience and the Economy (SHORE) Program will contribute to addressing the challenges and opportunities for India's blue economy and coastal resilience identified working in close coordination with the Government of India.

B. Relevance to Higher Level Objectives

13. The SHORE Program ("the Program") and its Phase 1 project ("the Project") are consistent with the World Bank Group's Country Partnership Framework for India FY18-22 (Report No. 126667-IN) discussed by the World Bank Board of Executive Directors on September 20, 2018, and extended to FY25 by the corresponding Performance and Learning Review dated October 23, 2023. The Program directly supports all three focus areas of the CPF, namely: (a) Resource-efficient growth through improved resilience of vulnerable communities to coastal hazards; (b) Enhancing competitiveness and enabling job creation through skill development and diversified livelihoods for coastal communities, including increased quality jobs for women; and (c) Investing in human capital through better social protection systems for coastal communities. ICZM is the building block of the Program and the Project, promoting sustainable and resource-efficient growth in coastal areas, sustainable use of natural (blue) resources, improved ecosystem productivity, and enhanced blue carbon sequestration, thus ensuring long-term environmental and economic benefits. Investments for reducing plastic litter envisage private sector participation and creating job opportunities for coastal communities, including women. Investments in skills development for government agencies and coastal communities will improve human capital. Strengthening the effectiveness of state agencies will be achieved through targeted capacity-building initiatives that will mainstream ICZM skills necessary for implementation of coastal governance regimes. State-level initiatives will also pave the way for knowledge exchange with other coastal states and promote the replication of successful models.

14. The Program is aligned with the WBG's Evolution Roadmap principles, including: (a) Scale: the Program establishes a phased, national-scale mechanism for coordinating and financing resilience enhancing investments; (b) Leveraging finance: the Program will leverage significant public and private resources to complement and strengthen the targeting of the NCM budget allocation by strengthening the channeling mechanisms for sustainable (including blue carbon) finance in participating states; and (c) Replicable: the Project will serve as the first phase of a set of interventions addressing common resilience challenges in two states – Karnataka and Tamil Nadu – that will be scaled up by other coastal states, and informed by national activities under the Program. The SHORE Program is aligned to the Global Challenge



Programs of the World Bank on: (a) Forests for Development, Climate, and Biodiversity; and (b) Fast-Track Water Security and Climate Adaptation.

15. **The Program and the Project are aligned with the WBG Climate Change Action Plan (2021–2025)**, which highlights coastal regions for their potential to adopt NBS, boosting coastal resilience and climate mitigation through carbon sequestration. Alignment will be ensured by supporting India's 2022 nationally determined contribution (NDC) under the Paris Agreement. On adaptation, the Government of India aims to enhance investments in regions vulnerable to climate change, such as coastal zones. The Program and the Project will contribute to the 2030 Agenda for Sustainable Development and its Sustainable Development Goals, particularly Goal 8 (Decent work and economic growth), Goal 12 (Responsible consumption and production), Goal 13 (Climate action), Goal 14 (Life below water), Goal 15 (Life on land), and Goal 17 (Partnerships for the Goals). The Program will also support India's commitments to the High Seas Treaty, of which it became a signatory in 2023, which aims to maintain ocean health.

16. **The Program and the Project are aligned with the WBG Gender Strategy FY24–FY30**, which emphasizes a stronger focus on diversified and better jobs for women, as well as enhanced ownership and control of key assets. The Program will contribute to reducing gender gaps in jobs and entrepreneurship, thereby enhancing women's voice and agency, particularly as they relate to strengthening community resilience and managing climate and disaster risks. The Project will increase female participation in mangrove plantations, from which women have traditionally been excluded, and promote employment opportunities in material recycling facilities. The Project will also provide training to women on emerging skills and technologies, business management, plastics waste management, ecotourism management, mangrove conservation, impact monitoring, and procurement.

C. Multiphase Programmatic Approach

(i) Rationale for Using the Multiphase Approach

17. **The Program will use a horizontal Multiphase Programmatic Approach (MPA) that progressively supports context-tailored solutions to specific development challenges faced by India's coastal communities and ecosystems.** The Program's phases, sequencing, and selection of states will enable the effective implementation of India's national policy framework for managing coastal areas and the underlying CRZ Notification of 2019. The MPA is chosen for the following reasons:

- a) **India's coastal regions need long-term coordinated action that addresses their multisectoral challenges.** Actions that protect the coastline, conserve fragile ecosystems, manage pollution, and support communities require a long-term and phased approach to be effective. Further, the interconnected coastline means that gains in one state may be diminished by losses in neighboring states, so continuity and momentum across states are imperative.
- b) **The MPA will facilitate information sharing, establish common monitoring approaches, and enable learning and cross-state collaboration on ICZM and planning.** The horizontal MPA will enable effective coordination among participating states, facilitate information sharing, and encourage states to collaborate intensively. The MPA will ensure uniform monitoring of coastal erosion, marine pollution, and ecosystem health across states, and use cross-state learning to allow states to adapt the design of their interventions. Other implementation approaches do not warrant consistent coastal monitoring using a common methodology.
- c) **The MPA will help convene stakeholders from the government (national, state, and local levels), the private sector, and civil society around solutions to common issues.** The MPA will also foster



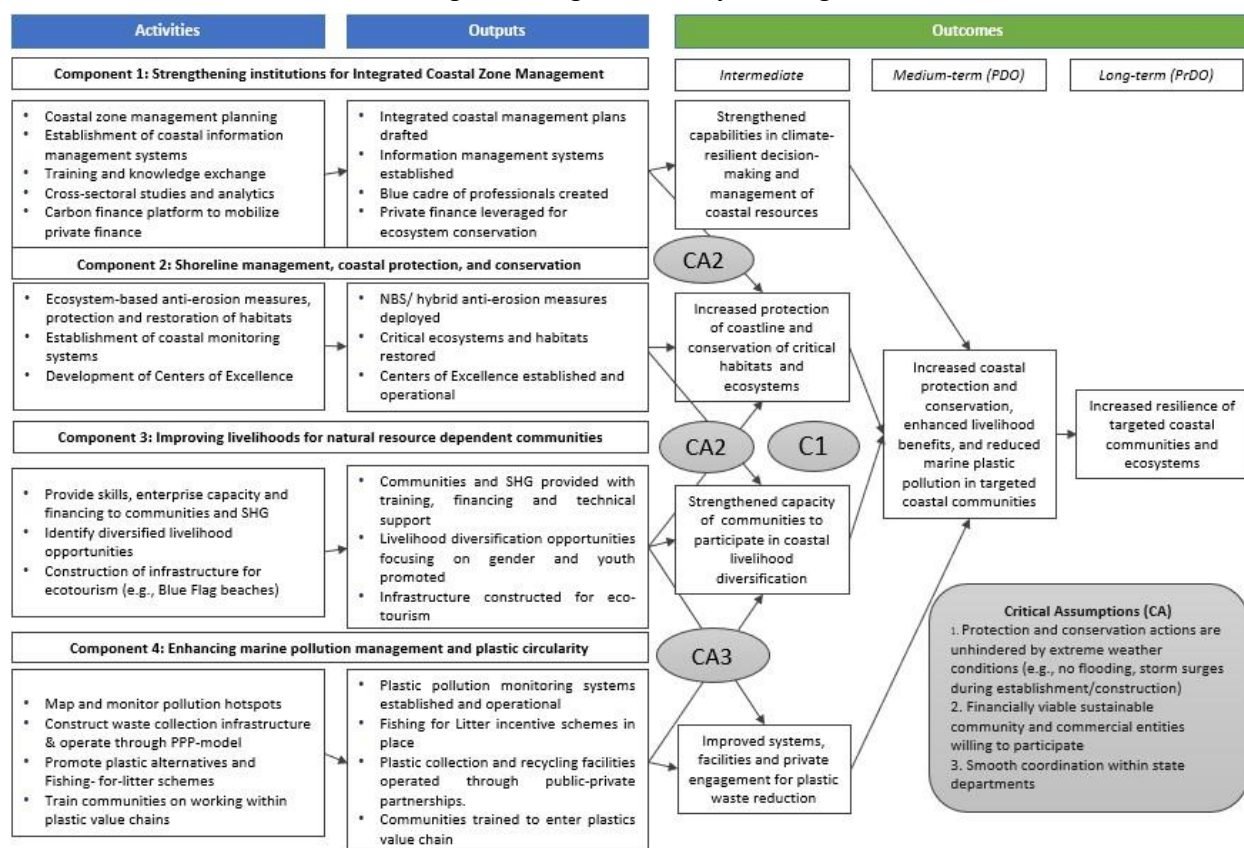
cross-learning on initiatives on carbon finance, extended producer responsibility, and achieving climate targets through NBS.

- d) **The MPA will ensure coherence across coastal resilience interventions.** The MPA will support the achievement of government policy objectives through long-term financial commitments for coastal resilience and implementation of adaptation measures identified in ICZM plans. It will also facilitate the cumulative impact of coastal adaptation interventions.
- e) **The MPA will facilitate the effectiveness of the ICZM approach.** The MPA will enable integrated planning across the boundaries of participating coastal states by following the concept of coastal sediment cells. Sediment cells act as self-contained units within which sediment moves along the shore. Sediment cells, which cross state boundaries, will form the Program's foundation for ICZM planning.

(ii) Program Results Chain

18. **The Program will enhance the resilience of targeted coastal communities and ecosystems.** It will help reduce institutional fragmentation and the technical and resource gaps that pose barriers to effective coastal zone management at national and state levels. In doing so, the Program will help the participating coastal states to increase coastal protection and conservation, enhance livelihood opportunities, and reduce marine pollution. The Program's theory of change is presented in Figure 1.

Figure 1: Program's Theory of Change



(iii) Program Development Objective (PrDO)



19. **The PrDO is to increase the resilience of targeted coastal communities and ecosystems.** “Targeted coastal communities” are communities living in India’s coastal districts, as outlined in this document, with a focus on communities that are dependent on natural resources for livelihoods and well-being. “Targeted ecosystems” are coastal and marine natural assets under ecological stress in the Program’s participating states. Community resilience is the capability of the community to prevent or cope with the impacts of climate change and marine pollution. Ecosystem resilience is defined as the capacity of an ecological system to persist in the face of disturbances. The Program-level outcomes will be measured through the indicators presented in Table 1.

Table 1: Program-level Indicators

Indicator	MPA Target
Millions of people with enhanced resilience to climate risks (Corporate Results Indicator, CRI)	5
Millions of hectares of terrestrial and aquatic areas under enhanced conservation and management (CRI)	0.23
Millions of new or better jobs (CRI)	0.3

(iv) Program Framework

20. **The SHORE Program will include three phases of Investment Project Financing (IPF) operations between FY26 and FY33.** The Program will address common threats to coastal areas, such as habitat loss, erosion, fragility of coastal ecosystems, and pollution. The Program will enhance the resilience of coastal ecosystems and communities and build the critical capacity of key institutions and actors to maintain and scale up Program achievements. The three MPA phases will overlap and will be tailored to be sufficiently flexible to respond to the changing needs of participating states as well as experience gained during implementation, including the lessons learned.

21. **Phase 1 (FY26–FY31, the Project) will support Karnataka and Tamil Nadu states.** These states have requested to participate in the first phase as they have developed CZM plans to guide their coastal development, in line with CRZ Notification requirements and restrictions on plastics. Both states seek to: (a) invest in institutional capacity for adaptive ecosystem management and coastal resilience; (b) expand the use of NBS/Hybrid infrastructure in protection, restoration, and conservation to enhance the resilience of critical coastal landscapes that generate economic and ecological benefits; (c) reduce ecosystem degradation caused by pollution, by reducing plastic waste and promoting circularity; and (d) promote alternative livelihoods in coastal communities by facilitating private sector investments in resource-efficient economic growth paths.

22. **Phase 2 (FY27–FY32) will potentially finance national level interventions in support of the NCM, as defined in specific state Project Implementation Plans (PIPs) and expand ecosystem and community resilience interventions to Goa.** The NCM relies on a multipronged approach to pursue India’s blue economy aspirations which includes enhancing institutional capabilities of coastal states to implement climate adaptation measures. The NCM seeks to: (a) implement the provisions of the CRZ Notification and achieve the objectives of integrated and sustainable coastal management as per the National Environmental Policy of 2006; (b) develop Integrated CZM Plans and Marine Spatial Plans for the sustainable management of coastal and marine resources; (c) promote intersectoral coordination for comprehensive management of the existing and ongoing coastal activities; and (d) enhance existing institutional and resource capacity through research and development, data creation and analysis, and evidence-based training. The interventions in Goa will finance coastal protection measures identified in



the state's recently approved shoreline management plan together with upstream and downstream plastics circularity investments.

23. **Phase 3 (FY27–FY33) will potentially focus on the Sundarbans region of West Bengal to support coastal protection, improved ecosystem management, and livelihood diversification.** The low-lying coast of West Bengal is affected by sea level rise, increased soil salinity, and associated loss of habitats and coastal erosion, with pronounced impacts on livelihoods and infrastructure. The fragile ecosystem and communities of Sundarbans suffer frequent tropical cyclones, storm surges, high tides, floods, and droughts, affecting economic assets and livelihoods of communities.

24. **The Program could potentially be scaled up to other coastal states in future MPA phases.** Future expansion would depend on requests for participation, coupled with technically robust proposals, and verification of the state's readiness and operational capacity. The participation of states will depend on the following criteria: (i) the extent of coastal erosion and vulnerability of people and assets; (ii) the states' readiness such as the preparation of Integrated Coastal Zone Management Plans (ICZMPs), SMPs, Wildlife Management Plans, and Forest Working Plans; (iii) suitability of proposed institutional arrangements (e.g., identification of competent implementing agency) to achieve impactful development outcomes through the project interventions; and (iv) availability of fiscal space to support co-financing and implementation requirements. While the MPA design provides flexibility for the states to join the Program in later phases, in each case this would be subject to World Bank approval, allowing these states to incorporate lessons from earlier phases. An assessment of states' readiness and capacity to adhere to the Program's technical design, institutional arrangements, governance mechanisms, and private partnerships aspects, as well as adhering to World Bank fiduciary requirements, will be carried out prior to initiating subsequent phases.

Table 2: MPA Framework

Phase	Sequential or simultaneous	Financing instrument	Geographic Focus	Estimated IBRD Amount (US\$, million)	Estimated Other Amount (US\$, million)	Estimated Approval Date	Estimated Environmental and Social Risk Rating
1	Simultaneous	IPF	States of Karnataka, Tamil Nadu	212.6	91.1	September 9, 2025	Substantial
2	Simultaneous	IPF	National (NCM), State of Goa	287.4	191.0	August 2026	Substantial
3	Simultaneous	IPF	Sundarbans region of West Bengal	350.0	150.0	December 2026	Substantial
				850.0	432.1		

25. **The Program's components address elements that are critical to enhancing the resilience of coastal ecosystems and communities in India.** These components will be broadly consistent across the



Program, while the specific scope of activities will differ among the states to respond to their specific contexts and resilience needs:

- a) **Strengthening institutions for Integrated Coastal Zone Management.** The development impact will be achieved through long-term engagement in effective governance and management of natural resources and support of institutional frameworks for coastal management and planning, with an emphasis on adaptation and climate resilience. A whole-of-government approach will be promoted to ensure effective sectoral coordination.
- b) **Shoreline management, coastal protection, and conservation.** The development impact will be achieved by scaling up investments for coastal protection through NBS and improved management for enhancing the ecological sustainability of natural assets.
- c) **Improving livelihoods for natural resource dependent communities.** The development impact will be achieved through interventions supporting livelihoods and community incomes, promoting innovation and community entrepreneurship for sustainable use of coastal natural resources.
- d) **Enhancing marine pollution management and plastic circularity.** The development impact will be achieved through measures to reduce marine pollution leakage, including solid and liquid waste, with an emphasis of Phase 1 on ocean-bound plastic waste; supporting financially viable circular solutions; and integrating local and fishing communities, non-governmental organizations, and the private sector in more effective waste and pollution management in coastal areas.
- e) **Project Management.** State Project Management Units (SPMUs) in participating states will plan investments and support coordination, ensuring compliance with World Bank and national standards.
- f) **Contingent Emergency Response Component (CERC).** Provision of immediate response to an eligible crisis or emergency, as needed.

(v) Learning Agenda

26. **The SHORE Program will facilitate learning and knowledge sharing on ICZM among coastal states and responsible ministries, factoring in climate change risks.** The learning agenda will be guided by the WBG Knowledge Compact for Action, resulting in: (a) proactive knowledge flow among participating and nonparticipating coastal states through peer-to-peer learning; (b) increased public support for low-impact investments in coastal areas vetted through public consultation and awareness raising activities; and (c) availability of international good practices in ecosystem monitoring and risk mitigation and adaptation solutions for ecosystem resilience, coastal erosion mitigation, and pollution reduction. The outputs of the learning programs will help the coastal states formulate solutions that are tailored to their specific needs to effectively manage coastal resources. Tamil Nadu's Department of Environment, Climate Change, and Forests and Karnataka's Department of Forest, Ecology, and Environment will be responsible for the learning agenda under Phase 1, in coordination with central ministries and entities, notably the NCSCM. The Centers of Excellence supported through the Project will play a key role in promoting knowledge exchange beyond the states and internationally.

27. **The Program's learning agenda will expand the learning networks created under the World Bank-financed India ICZM Project (P097985).** The ICZM Project, which closed in 2020, helped establish the NCSCM to spearhead a consortium of education institutions. The NCSCM has developed a database on coastal and marine biodiversity, island environments, coral reefs, coastal erosion, and coastal wetlands



to support ICZM planning, enabling adaptive and evidence-based decision making. Under Component 1, the SHORE Program will expand these networks and partnerships through research on coastal marine ecosystems, blue carbon stocks, and NBS. The Program will expand the NCSCM's repository of good practices, learning materials, and research, which will be used to improve states' capacity to prepare and implement ICZM plans, factoring in protection and resilience of sensitive ecosystems.

28. **The Program will support learning (e.g., exchange programs, dialogue and research) and communication activities**, such as infographics, report cards, fact sheets, policy briefs, e-books, and e-atlases. The Program will use existing networks to support climate adaptation and resilience-building measures, while forging ties with local and international institutions. Participating states will benefit from updated monitoring data to determine risk profiles of impact zones, and devise management actions to mitigate negative ecosystem impacts. The NCSCM will continue to work with academia and global partners on knowledge exchange and research to reach a wider audience. At the state level, staff from relevant agencies will be trained in the application of ICZM tools, biodiversity conservation, sustainable livelihoods, carbon finance, and climate change adaptation to expand expertise and technical skills and to improve the performance of the blue economy cadre. Under Phase 1, experts from the two SPMUs, and other Project Executing Agencies (PEAs) will benefit from: (a) cross-learning from each state's project implementation experiences and challenges, and (b) knowledge exchange events on best practices and implementation strategies. Beyond Phase 1, capacity assessments will be carried out to determine the training and learning needs of states.

II. PROJECT DESCRIPTION

A. Project Development Objective

(i) Project Development Objective (PDO) Statement

29. To increase coastal protection and conservation, enhance livelihood benefits, and reduce marine plastic pollution in targeted coastal communities.

(ii) PDO Level Indicators

- People benefitting from enhanced resilience of terrestrial and aquatic systems (CRI)
- Seascapes under enhanced conservation and/or sustainable management (coastal zones and oceans) (CRI)
- Beneficiaries employed (CRI)
- People in targeted coastal areas with less exposure to plastic pollution
- Target beneficiaries with rating "Satisfied" or above on Project interventions

B. Project Components

30. **The PDO will be achieved through targeted interventions with an emphasis on:** (a) strengthening local institutions for ICZM through critical management plans that integrate resilience measures; (b) promoting **resilient shorelines** through long-term planning and implementing measures, particularly NBS, for protection of physical and natural assets and biodiversity conservation; (c) income diversification, jobs, and improved livelihood opportunities, specifically for vulnerable groups, including women; and (d) reducing plastic pollution and enhancing circularity.

31. **The following components will be financed through two IBRD loans to India of US\$212.64 million equivalent in total.** The IBRD loan in the amount of US\$141.65 million will finance Project activities



in state of Tamil Nadu and the IBRD loan in the amount of JPY 10,235.7 million (US\$70.99 million equivalent) will finance Project activities in state of Karnataka, with counterpart financing of US\$60.71 million from Tamil Nadu and JPY 4,386.73 million (US\$30.42 million equivalent) from Karnataka. Each state will implement measures identified in its approved coastal management plan.

32. Component 1: Strengthening institutions for Integrated Coastal Zone Management (Tamil Nadu: IBRD US\$18.28 million and counterpart US\$7.83 million. Karnataka: IBRD JPY 587 million (US\$4.07 million equivalent) and counterpart JPY 251.57 million (US\$1.74 million equivalent)). The component will support Tamil Nadu and Karnataka to plan, analyze, and make decisions about the management of their coastal and marine resources through the provision of consulting services, training and goods. The ICZMPs are not only important roadmaps for addressing the challenges in coastal zones but are also tools for establishing institutional processes for planning, implementing, monitoring, and revising investments and policies. The SMPs, which will be approved before any grey infrastructure is built for coastal erosion protection as per the directions of the National Green Tribunal, will inform the management and protection regimes of sensitive natural areas. The ICZMPs will address drivers of impact to critical natural assets and will inform state institutions' decision making. State-level ICZMPs – integrated long-term management plans for each state's coastal zone – help the states to identify priority sectoral investments (including on tourism, fisheries, pollution management, and ecosystem conservation, as relevant to each state) and provide recommendations to enhance coastal resilience and protect the vulnerable communities and their economic assets. CRZ Notification of 2019 mandates all coastal States and Union territory administrations to revise or update their respective coastal zone management plan (CZMP). Given the significant potential for coastal ecosystems to mitigate carbon emissions, technical assistance will be provided to enable states to tap into domestic sources of "blue carbon" finance. The component will also include technical assistance to support cross-learning, knowledge sharing, and exposure of stakeholders to international ICZM good practices.

33. Specifically, in both Tamil Nadu and Karnataka, the component will finance: (a) technical studies to inform the updating of SMPs and other sectoral plans and integrating them under the state level ICZMPs that also account for the sectoral investments and interlinkages; (b) establishment of state-level coastal zone management databases and information management systems, which will store data on the coastal environmental conditions, including biodiversity, erosion, plastic pollution, and other relevant factors, and the data for implementation and monitoring results of interventions; (c) technical assistance to relevant PEAs to develop baseline assessments of coastal ecosystems (using drones where appropriate), measure carbon stocks, monitor the condition of mangroves, coastal wetlands, seagrasses, and other coastal habitats, and plastic pollution; (d) technical assistance to the Forest Departments in establishing regulatory frameworks to access carbon finance for nature-based investments; and (e) training and workshops for specialists from PEAs on ICZM, biodiversity conservation, sustainable livelihoods, nature financing, climate change adaptation, and ecosystem monitoring, which will lead to the formation of state level "blue cadres," namely, trained officers posted in coastal districts that provide oversight to coastal zone management, monitoring, and compliance, and underpin institutional strengthening.

34. Component 2: Shoreline management, coastal protection, and conservation (Tamil Nadu: IBRD US\$76.99 million and counterpart US\$33 million. Karnataka: IBRD JPY 5,262.79 million (US\$36.50 million equivalent) and counterpart JPY 2,255.48 million (US\$15.64 million equivalent)). This component will enhance the resilience of physical and natural coastal assets by: (a) designing and constructing green infrastructure to reduce coastal erosion and flooding; (b) designing and constructing grey and hybrid infrastructure in Tamil Nadu, consistent with and after approval of the SMP, for coastal protection; (c) restoring coastal ecosystems that provide biodiversity, carbon sequestration, and protective benefits; and



(d) establishing infrastructure and developing capacity for research and biodiversity management. Investments and their locations have been identified and prioritized through the ongoing ICZM planning process, and the locations for grey infrastructure in Tamil Nadu will be finalized when the SMP is approved. It will also have a strong focus on gender mainstreaming and livelihoods by ensuring active participation of women ecosystem conservation activities. The states have identified investment locations based on coastal vulnerability assessments and state biodiversity plans. In line with Department of Economic Affairs' requirements, the readiness of these investments has been confirmed.

35. Support to participating states of Tamil Nadu and Karnataka, through the provision of consulting services, goods, works, and training will focus on: (a) green infrastructure, such as bio-shields through the planting of mangroves, establishment of shelterbelts, and the restoration of dunes, to protect coastlines from the effects of extreme weather events, sequester carbon, and support biodiversity; (b) grey infrastructure in Tamil Nadu, consistent with and after the approval of the SMP, for coastal protection, such as dykes and groynes, combined with green infrastructure, when appropriate, to form hybrid solutions; (c) the rehabilitation of seagrass meadows and corals, and the protection of selected coastal and inland areas through establishment of multipurpose artificial reefs to manage or control erosion; (d) restoration of coastal wetlands; and (e) the establishment of and technical assistance to Centers of Excellence (CoEs) dedicated to the conservation of key ecosystems (mangroves, wetlands, and biodiversity) and species (including dugongs, turtles, and birds). The CoEs will be managed by Tamil Nadu's Department of Environment, Climate Change, and Forests and Karnataka's Department of Forest, Ecology, and Environment. They will facilitate capacity building programs/events for government officials and local communities and will support research and advocacy programs on innovative models for sustainable coastal zone/ecosystem conservation and management. The Centers of Excellence will be designed to achieve green building certifications.

36. Component 3: Improving livelihoods for natural resource dependent communities (Tamil Nadu: IBRD US\$21.15 million and counterpart US\$9.06 million. Karnataka: IBRD JPY 1,142.27 million (US\$7.92 million equivalent) and counterpart JPY 489.54 million (US\$3.40 million equivalent)). This component will support coastal communities in the participating states to create and sustain climate-resilient livelihoods and will finance consulting services, community grants, goods, works, and training. Activities under this component will include investments in skills and capacity development, small-scale infrastructure, "blue flag" beach management, and support for community livelihood activities in the Uttara Kannada district of Karnataka and the coastal districts of Tamil Nadu. These activities will boost the capacity of communities to respond and adapt to climate change, generate alternative incomes, widen economic participation, create jobs for women and disadvantaged groups, and protect natural resources. Component 3 will follow a community-driven development approach and transfer decision-making powers and financial and technical resources directly to communities or groups of end users. This approach will be informed by the World Bank-financed Tamil Nadu Rural Transformation Project (P157702) and the United Nations Development Programme-funded Coastal Biodiversity Project of the Gulf of Mannar Biosphere Reserve Trust. Implementation of this component will be led by agencies with significant experience in implementing community-driven programs in coastal regions, namely, the Forest Department and State Rural Livelihood Mission in Karnataka and the Gulf of Mannar Biosphere Reserve Trust in Tamil Nadu.

37. In both Tamil Nadu and Karnataka, Component 3 activities will include:

- a) Establishment of small-scale community infrastructure that fosters coastal resilience and supports income generating activities in sustainable tourism, fisheries, seaweed cultivation, and



aquaculture in selected sites. Examples of community infrastructure include jetties, cold chains, and retail centers for local produce and products. The small-scale community infrastructure will comply with local land-use regulations and shoreline management plans and will be operated by community level institutions such as Eco-Development Committees.

- b) Provision of training and technical assistance to community members, entrepreneurs (especially female entrepreneurs), women's groups, and disadvantaged individuals on identifying diversified livelihood options, selecting feasible community-level microenterprises, and engaging the private sector in aquaculture and ecotourism for sustainable community-led investments.
- c) Provision of Community Grants to community organizations operating in the Selected Coastal Areas ("Community Grant Beneficiaries") to support implementation of a set of income generating activities ("Sub-Projects"). Grant beneficiaries could be community organizations, such as Village Forest and Eco-Development Committees, Gram Panchayat Level Federations, and Self-help Groups (SHGs), in selected coastal areas to support implementation of income generating activities. A Grant Manual has been prepared by the SPMUs, detailing eligibility criteria for grant recipients and activities, including exclusion lists, terms and conditions, and mechanisms and procedures for funding, accounting, and reporting. Component 3 will seek to finance a diverse range of livelihood activities with a focus on women's ownership, wage parity, and opportunities for new jobs for women and disadvantaged groups. The PIE will fund these organizations and receive utilization certificates from them for the expenditures incurred.
- d) Support selected beaches in Tamil Nadu and Karnataka to obtain nationally and internationally recognized eco-labels, such as "Blue Flag Beach" certification, to increase tourism revenues and jobs and reduce marine pollution, including: (i) preparation of beach development plans for meeting the eco-labelling criteria; (ii) supporting the development of small infrastructure and provision of equipment identified in the beach development plans as required to improve beach management, such as clean drinking water and sanitation facilities, solar lighting, safety equipment, communication and awareness raising materials, boardwalks, and signage; and (iii) development of business plans for the selected beaches. Both states piloted Blue Flag Beach certification in 2019 under the Ministry of Environment, Forest, and Climate Change "Blue Flag Beaches" initiative, which led to increased tourism revenues and jobs, and reduced marine pollution. This support will facilitate the scale-up of successful pilots to additional beaches by providing funds for meeting the eco-labelling criteria, as well as small infrastructure and equipment identified in the beach development plans as required to improve beach management. The Project will also finance business plans for the selected beaches to determine entrance fees needed to cover their operation and maintenance. The plans and interventions in the targeted beaches will comply with CRZ Notification pertaining to coastal zone planning, environmental management, wastewater management, and environmental conservation. The PIP will elaborate on the eligibility criteria and contract modalities for funding, organizational and management structure, and operation modalities of beaches included in the Project.

38. Component 4: Enhancing marine pollution management and plastic circularity (Tamil Nadu: IBRD US\$18.14 million and counterpart US\$7.77 million. Karnataka: IBRD JPY 2,733.07 million (US\$18.96 million equivalent) and counterpart JPY 1,171.32 million (US\$8.12 million equivalent)). This component will provide support to reduce the threats to marine and coastal resources from plastic pollution through financing of upstream and downstream interventions in identified hotspots to: (a) support local



authorities (i.e., “Urban Local Bodies and Panchayati Raj Institutions”) to improve their plastic waste segregation and recycling systems capacity in targeted hotspots; and (b) strengthen the compliance of producers with EPR regulations by enhancing monitoring and verification capabilities of regulatory bodies. The selected activities are based on the state’s assessment of plastic pollution hotspots.

39. Support to Tamil Nadu and Karnataka will focus on:

- a) Financing upstream measures in identified hotspots, including: (i) studies to identify sustainable business models for enhancing plastic circularity; (ii) public awareness campaigns to prevent plastic leakage; (iii) strengthening of existing solid waste data management information systems for effective monitoring of local plastic waste collection and segregation; and (iv) capacity building to women-led enterprises engaged in the plastics value chain on recycling technologies, waste processing, and the EPR plastics credit market.
- b) Financing downstream measures in identified hotspots, including: (i) construction of infrastructure to collect floating plastic waste (such as trash booms) from identified hotspots in rivers and streams; (ii) provision of waste collection and transport vehicles; and (iii) establishment of Material Recovery Facilities (MRFs) for sorting and processing plastic waste.
- c) Supporting the implementation of public awareness raising campaigns and incentive schemes, such as “Fishing for Litter” scheme, to promote collection and recycling of abandoned-lost-discharged-fishing gear. These activities will be designed to promote earning opportunities for coastal fishing communities, especially women and women-led SHGs, in the plastics value chain, thus enabling a more diverse labor force and increased representation, including in decision-making in the nascent local circular economy.
- d) Enhancing private sector participation in the management of ocean-bound plastics by: (i) supporting the PEAs in establishing operation and maintenance contracts with sound business models for MRFs between Urban Local Bodies and/or Panchayat Raj Institutions and private enterprises; (ii) encouraging private enterprises to access the EPR plastic credits market through training and facilitating their registration in India’s EPR portal; and (iii) carrying out upstream analyses to inform private sector engagement in the plastic value chain, including a market study on recycling opportunities for fast-moving consumer goods in Karnataka, and an assessment of business models for establishing plastics recycling industries. Urban Local Bodies and/or Panchayat Raj Institutions will establish management contracts, as non-consulting services, with private entities (including cooperatives and non-governmental organizations) through a competitive process to operate the MRFs.

40. Component 5: Project Management (Tamil Nadu: IBRD US\$7.09 million and counterpart US\$3.04 million. Karnataka: IBRD JPY 510.57 million (US\$3.54 million equivalent) and counterpart JPY 218.82 million (US\$1.52 million equivalent)). This component will support development of Project management and monitoring systems and strengthening the capacity of the SPMUs to implement the Project, including the provision of support for: (a) the staffing and operation of the SPMUs; (b) financing of relevant technical and support consultants and operating costs on the Project’s financial management, procurement, and environmental and social aspects; (c) the development of a robust monitoring, learning, and evaluation system for the Project to track progress and outcomes, including carrying out of monitoring and evaluation and reporting activities and third-party audits; (d) establishment and management of a grievance redress mechanism; and (e) development and implementation of communication strategies and carrying out stakeholders engagement.



41. **Component 6: Contingent Emergency Response Component.** The zero-cost CERC will provide immediate response to an eligible crisis or emergency, as needed, by reallocating uncommitted loan proceeds from the other components. If an eligible emergency is being declared, the Borrower may request the World Bank to reallocate Project funds to support the response effort.

C. Project Beneficiaries

42. **Direct project beneficiaries are communities in the coastal areas of Tamil Nadu and Karnataka.** These communities will benefit from improved climate resilience, heightened protection of coastal and marine natural assets, reduced plastic pollution, diversified livelihood and job opportunities in the blue economy, and the emerging circular economy. The improved livelihood and employment opportunities will have positive spillovers to community members not directly engaged in project interventions and SHGs, especially those led by women, which will benefit from new and better livelihood and job opportunities. Project interventions will benefit startups, entrepreneurs, and established private players through enhanced transparency, more accessible data in plastic circularity systems, and targeted project support. Indirect beneficiaries are state institutions and agencies involved in project implementation that will benefit from support for CZM planning, capacity building, and learning activities. Staff of relevant state and local level departments will benefit from acquiring new skills and knowledge to perform their administrative duties.

D. Rationale for Bank Involvement and Role of Partners

43. **The World Bank brings expertise and knowledge drawing on lessons learned from financing large-scale coastal investments globally, including in India, Indonesia, the Philippines, and Viet Nam.** As a global pioneer in ICZM, the World Bank pairs concessional financing with unique experience in designing, implementing, and scaling up coastal management programs anchored in capacity building and cross-sectoral investments. The World Bank also has experience in supporting successful small-scale community-based investments in coastal communities and leveraging other funding sources, particularly from the private sector, to complement government resources. An added advantage of the World Bank is the power to convene internal and external stakeholders to support state governments and vulnerable coastal communities in identifying resilience risks and technical solutions to mitigate these risks, including leveraging financial resources for implementation.

44. **Role of partners.** The Program will build on and align with other development partners working on ICZM and coastal resilience. The Government of the Netherlands, through its Strategic Water Partnership, provides technical assistance to India for coastal and flood risk management in the Sundarbans. The output of this technical assistance will inform the project in West Bengal. The Asian Development Bank has recently initiated the Upper Delta Project in West Bengal, focusing on upstream management of river flows through river/canal rehabilitation and other measures aiming to enhance the climate resilience of the Sundarbans. This provides an opportunity for engagement and collaboration between the World Bank, International Finance Corporation (IFC), and the Asian Development Bank and to inform the design of subsequent phases of the Program.

E. Lessons Learned

45. **Lessons from the ICZM Project in India informed the design of the SHORE Program.** The ICZM project strengthened state institutions in Gujarat, Odisha, and West Bengal by adding new skills, advancing CRZ policies, and augmenting India's research capacity in marine and coastal ecology. The ICZM project also enabled the uptake of the CRZ Regulation by expanding the scientific foundations of India's



ICZM planning and underscored that sustained support to CZM benefits local communities and businesses to advance local development.

46. **The SHORE Program also incorporates lessons from other World Bank-financed projects that underscore the economic and societal benefits of adaptive solutions for coastal resilience, emphasizing the innovative and cost-effective nature of NBS.** These lessons are integrated in the design of Project interventions supporting social resilience and promoting community-led partnerships and inclusive decision-making. The Program draws on the lessons from financing a mix of upstream and downstream measures that engage communities and leveraging private investments.

III. IMPLEMENTATION ARRANGEMENTS

A. Institutional and Implementation Arrangements

47. **In Tamil Nadu, the Implementing Agency is the Department of Environment, Climate Change, and Forests, and the Project will be implemented by an existing SPMU for the Tamil Nadu Coastal Restoration Mission, which is housed in the Tamil Nadu Green Climate Company (TNGCC).** The SPMU is headed by the Chief Mission Director, who is designated by the government as TN-SHORE Project Director and includes key experts. The SPMU will be further supported by officials from the relevant government departments and consultants for the effective management of technical, financial, procurement and contract management aspects, monitoring and evaluation, and environmental and social (E&S) risk management provisions. Tamil Nadu has established a state level “High-Powered Steering Committee” (HPSC), chaired by the Chief Secretary, to provide policy guidance, progress review, and coordination actions across the different departments for project implementation. The TNGCC’s Governing Board will approve the state’s annual work plans.

48. **In Karnataka, the Implementing Agency is the Department of Forest, Ecology, and Environment, and the Project will be managed by an existing SPMU housed in the Karnataka Eco-Restoration Society (KERS).** The SPMU is headed by a state government designated Project Director and will be supported by officials from the relevant government departments as well as consultants to ensure effective management of technical, financial, procurement and contract management aspects, monitoring and evaluation, and E&S risk management provisions. Karnataka has also established a “State-Level Empowered Committee” (SLEC), chaired by the Additional Chief Secretary (Forest, Ecology, and Environment), to provide oversight and guidance to state government departments and to steer convergence and coordinated actions among PEAs. The KERS’ Governing Council will review and recommend the Project’s annual work plans to the SLEC, for final approval.

49. **The implementation of activities by any additional PEAs identified during the project cycle will be undertaken with the World Bank’s prior approval.** More details on the implementation arrangements for the states of Tamil Nadu and Karnataka are available in the Annex 2.

B. Results Monitoring and Evaluation Arrangements

50. **The Project’s monitoring and evaluation arrangements are structured around the Results Framework.** The M&E is vital for learning and transparency, as well as to enable corrective measures when required. The Project’s M&E framework includes measures to ensure that activities involving the collection, storage, usage, and/or processing of personal data are carried out with due regard to India’s existing legal framework, including the Digital Personal Data Protection Act 2023 and the Electronic Consent Management Framework, as well as appropriate international data protection and privacy



standards and practices. Midterm and end-of-project surveys will be conducted to assess beneficiaries' perceptions of Project outputs and outcomes.

C. Sustainability

51. **The institutional sustainability of the Project is anchored in the effective coordination and capacity of institutions responsible for coastal management, effective use of knowledge tools across all stakeholder groups, and continuous engagement of communities.** The Project will strengthen the ability of state-level institutions to house and implement activities promoting resilience, capacity, and behavioral change, mainstreaming global expertise, leveraging and coordinating partner financing, and convening partnerships necessary for decision-making and community support. State Environmental and Forest Departments, other relevant state authorities, and community organizations will gain skills and knowledge essential to motivating communities to adopt new practices introduced through the Project.

52. **Ecological sustainability will be achieved through interventions that enhance the ability of natural ecosystems to cope with climate challenges.** These will include green, hybrid, and grey infrastructure which will provide vital protection against coastal erosion and flooding. The sustainability of coastal management interventions will be increased through a sharper focus on conservation and rehabilitation of coastal ecosystems, technological improvements, and job creation in climate-vulnerable communities. Project Components 2, 3, and 4 provide critical outputs to underpin ecological sustainability.

53. **Social sustainability will be enhanced through a sharper focus on the inclusion of landless families and women-headed households.** The Project will support interventions that restore natural habitats while building community resilience and impactful social outcomes. Activities under Component 2 will seek to employ women, landless families, and disadvantaged groups when undertaking conservation activities at the community level. These will lead to sustainable socioeconomic gains while also enhancing natural capital, which in turn will add to the sustainability of improved lives and livelihoods. Livelihood support activities under Component 3 will prioritize support to the same groups, their inclusion in the decision-making system at the village level, and greater female labor force participation. The intended outcomes are enhanced incomes, job opportunities through skills enhancement, and social empowerment of traditionally disadvantaged groups.

54. **To ensure sustained engagement of local communities in efforts to reduce plastic pollution, the Project will draw on lessons from other initiatives to inform project interventions toward positive impacts.** These include: (a) financing incentive schemes for fishing communities to collect and repurpose plastic waste, considering appropriate contractual mechanisms; (b) EPR and crediting schemes; and (c) opportunities to involve private sector through sustainable or green financing incentive schemes (where public funding was earlier used to encourage fishermen to collect ocean plastics and return discarded fishing gear for recycling, e.g., Kerala's "Clean Seas" initiative) which could potentially boost the recycling markets and help fishing communities sustain outcomes. Credit schemes have been used by Tamil Nadu Pollution Control Board to encourage manufacturers of fishing gear to adopt EPR, collect unwanted gear for recycling, and use alternate materials for fishing nets. A similar approach by Karnataka, in partnership with nongovernmental organizations such as "Plastic for Change," will focus on collection and recycling. Firms receiving coveted "Ocean-Bound Plastics" certification have benefited and added value to their products in the national and international markets in the past. Component 4 outputs would facilitate local uptake of circular measures to combat plastic pollution in coastal areas by drawing on local experience.

IV. PROJECT APPRAISAL SUMMARY



A. Technical, Economic and Financial Analysis

(i) Technical Analysis

55. **The Program is informed by Vision 2030, which recognizes that ocean and coastal resources play a significant role in the economic prosperity of coastal communities.** It reflects the opportunities that arise from emerging blue sectors, such as sustainable fisheries, ecotourism, and blue carbon. The design is also informed by the findings of the World Bank programmatic advisory services and analytics on topics such as: (a) development of ocean accounts, which provide insight into the economic value of coastal and marine resources; (b) NBS for coastal protection and resilience; (c) strategic investment planning; and (d) plastic circularity. The Project draws on a body of lessons learned and good practices (e.g., ICZM, inclusive resilience planning, incentives and opportunities for alternative livelihoods, and NBS) tested in investment operations, which demonstrate the potential of the Project to achieve the multiple goals of resilient communities and ecosystems, improved livelihoods, and reduced pollution.

56. **The Project was assessed across mitigation, adaptation, and resilience dimensions and is considered “Paris aligned.”** The Project is consistent with India’s adaptation strategies and NDC, which seek to better adapt to climate change by enhancing investments in vulnerable coastal regions.

- a) **Assessment and reduction of risk through adaptation.** The Project has been assessed as aligned with adaptation objectives. Project investments for institutional capacity strengthening, such as CoEs and training academies, will inform and sensitize the national and subnational level stakeholders on climate hazards. Site selection for infrastructure investments will be based on risk exposure maps, using planning tools such as SMPs and ICZMPs. Nature-based interventions promote resilience through shoreline and sand-dune stabilization, and shelterbelts lessen the effects of storm surges, coastal erosion, and saline intrusion. New plantations of mangroves, seagrass, and corals will consider climate-compatible species that support biodiversity needs and reduce environmental degradation. The Project would create alternative sources of income for natural resource dependent communities, while promoting the restoration of coastal vegetation, agroforestry, ecotourism, and fisheries practices, leading to more resilient communities.
- b) **Assessment and reduction of mitigation risks.** The Project has been assessed as aligned with mitigation objectives. It will actively contribute to the country’s decarbonization pathway through the restoration and enhancement of blue carbon sinks. Project activities will neither lead to carbon lock-in nor create transition risks by focusing on universally aligned activities, including pollution reduction, afforestation/reforestation, and NBS for coastal erosion. In addition, sustainable building concepts, such as using local materials, rainwater harvesting, and solar power (where feasible) will be integrated into community interventions supporting tourism and “blue beaches.” Interventions will actively foster decarbonization and promote the application of low-carbon approaches such as NBS, greening of plastic value chains, and circular economy solutions.

57. **Climate co-benefits.** The Project’s focus is on enhancing climate resilience and reducing greenhouse gas (GHG) emissions through targeted climate adaptation and mitigation actions. Component 1 will support the mainstreaming of climate-resilient interventions in ICZM plans. Component 2 supports investments in coastal protection to enhance the capacity of natural ecosystems at scale to act as the first line of climate defense against sea level rise, storm surges and cyclonic events, and to promote carbon sequestration. Component 3 supports resource-efficient growth by creating sustainable livelihoods and reducing pressure on coastal ecosystems, leading to climate and disaster risk reduction. Component 4 invests in reducing anthropogenic pressures on coastal and marine resources from plastic pollution and



by promoting resource efficiency. By supporting plastic circularity, the Project will reduce GHG emissions and protect coastal ecosystems by reducing pollution risks to coastal landscapes.

58. **Maximizing finance for development.** Component 3 provides support to entrepreneurs to identify diversified livelihood options and for engaging the private sector in aquaculture and ecotourism. Component 4 activities promote sustainable business models to enhance plastics circularity through effective collection and segregation, and by establishing management contracts for private entities to operate MRFs and access plastic credit markets. The support for MRFs will heighten the feasibility for commercial operators in plastic value chains and will set up the MRFs to operate through sound business models. Improved technical and managerial skills of prospective local suppliers may also generate collective efficiencies that make them attractive to global value chains. Component 4, as an enabler of private capital, will help increase the scale and capabilities of MRFs, allowing them to establish better links with commercial enterprises that collect plastic waste, and with recyclers for higher-quality plastic. It is expected that US\$3.2 million of private capital will be enabled in the operation of MRFs. Private capital enabled funds will be tracked by the indicator “Private capital enabled (US\$ amount)”. Biodiversity crediting will be explored in the subsequent phases of the Program.

(ii) Economic and Financial Analysis

59. **The Project is economically viable in the reference case and remains so under a wide range of sensitivity analyses.** The economic analysis examined the benefits and costs of a diverse portfolio of coastal interventions. It captures the benefits of: (a) improved livelihoods through community level investments in fisheries and ecotourism; (b) reduced coastal erosion and improved coastal protection; (c) improved management of marine plastic waste; and (d) increased carbon sequestration from the expansion of blue carbon assets. The economic analysis does not consider the benefits of biodiversity protection.

60. **Using conservative assumptions,** the economic net present value and the economic internal rate of return (using a 10 percent discount rate) are significant, at US\$204.05 million and 23.8 percent, respectively, when applying a shadow price of carbon corresponding to the World Bank low trend forecast. The present value of GHG net emissions alone in the reference case is US\$165.42 million. Under a high trend forecast for the shadow price of carbon, the net present value and economic internal rate of return are US\$369.7 million and 40.5 percent, respectively. If GHG emissions are ignored or the shadow price of carbon is set to zero, the net present value and economic internal rate of return are US\$38.64 million and 12.43 percent, respectively.

61. **The Project is expected to result in an estimated net reduction in emissions of 7.3 metric tons of carbon dioxide (CO₂) equivalent, with an average reduction of 0.4 metric tons per year in net emissions.** Karnataka accounts for 78 percent of the net negative GHG emissions (5.74 metric tons of CO₂ equivalent), of which 49 percent is related to afforestation and forest enrichment, 36 percent to new and restored mangroves, and 9 percent to recycling of plastics. Tamil Nadu accounts for 22 percent of the Project’s GHG benefits (a reduction of 1.61 metric tons of CO₂ equivalent), driven largely by the creation or enhanced management of mangroves (46 percent) and protection of coastal wetlands and seagrass beds (29 percent), with a minor (15 percent) contribution from increased recycling of plastics.

B. Fiduciary

(i) Financial Management

62. **The Financial Management (FM) risk rating is Substantial as both SPMUs are new entities with low FM capacity, and many PEAs are involved in the implementation of Project activities at the field**



level. KERS and TNGCC are newly formed parastatals. The respective state governments have created a Project budget head with budget allocation. The allocated amount will be transferred from the budget as per the work plans to the commercial bank accounts of the SPMUs, which will be treated as state nodal agency bank accounts. In Karnataka, all PEAs will be provided with child bank accounts from which Project payments will be made. Monthly expenditure statements along with a copy of the cash book will be submitted by the PEAs to SPMU. The SPMU will maintain accounts in a computerized accounting system (Tally) and consolidate project expenditures. In Tamil Nadu, a Single Nodal Account will be designated to receive funds from the Government of Tamil Nadu, with the TNGCC managing transfers to a Sub-Parent Account for TN SHORE. Child Agencies will access funds from the Sub-Parent Account, subject to pre-defined financial limits, ensuring compliance with project financial protocols. The PEAs will submit monthly expenditure statements and cash book records to SPMU, which will maintain and consolidate accounts using Tally to ensure transparency and accountability.

63. **The accounting system will be implemented no later than three months after loan effectiveness. An FM Manual for the Project will be prepared and adopted not later than three months after loan effectiveness.** The SPMUs will submit interim unaudited financial reports to the World Bank not later than 45 days after the end of every quarter, based on which disbursements will be made. The Project audit, which will cover field-level agencies, will be carried out by a firm of Chartered Accountants appointed by the SPMU, and a consolidated audit report will be submitted to the World Bank within nine months after the end of the financial year. FM staffing at KERS and TNGCC needs strengthening; hence, each SPMU will hire a Chartered Accountant as the Project finance officer within three months after loan effectiveness. In the case of PEAs, commerce graduates and accounts staff will be hired in field offices, as needed. Training on FM will be provided for the staff. The SPMUs may also hire an FM consultant to support the Project, as needed. There will be state-wise disbursement categories, which will support disbursement tracking. The Project will be funded on a reimbursement basis, where the state governments will prefund the Project and disbursements will be made upon submission of interim unaudited financial reports. Withdrawals up to US\$28,330,000 for Tamil Nadu and JPY 2,047,140,000 for Karnataka for payments made on or after October 1, 2024, against eligible expenditures incurred, in compliance with the World Bank's applicable policies, including procurement and E&S requirements, may be claimed as retroactive financing.

(ii) Procurement

64. **The SPMUs and PEAs at all levels of implementation will follow the World Bank Procurement Regulations for IPF Borrowers, dated February 2025 (Procurement Regulations), for all Project procurement activities.** In addition, the "Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants", dated October 15, 2006, and revised in January 2011 and as of July 1, 2016 (Anti-Corruption Guidelines), and the provisions agreed in the Loan Agreement, are applicable. The SPMUs will support the PEAs in managing Project procurement and contract management, as well as the District Project Management Units and community organizations in implementing Project procurement activities. Both states have published General Procurement Notices, and the two SPMUs have submitted a draft Project Procurement Strategy for Development (PPSD) and initial procurement plans (PPs) for the first 18 months. After World Bank review and concurrence, the SPMUs have uploaded the PPCSD in the World Bank's Systematic Tracking of Exchanges in Procurement (STEP) portal. The World Bank uploaded the initial PPs to the World Bank's STEP portal. The initial PPs prescribe the applicable procurement arrangements, and the PIP provides detailed guidance.



65. **The procurement risk is Substantial considering the multiple PEAs involved and their varied procurement capacities, as well as PEAs at multiple levels of implementation, which require coordination and monitoring.** Risk mitigation measures are: (a) procurement and contract management chapter in the State's Project Implementation Plans that includes community procurement procedures, to be disseminated to those managing day-to-day procurement; (b) deployment of people dedicated to procurement at all levels and providing them with need-based procurement training; (c) strengthening procurement monitoring by including a procurement module in the Project databases and information management systems; (d) establishment of a dedicated procurement complaint handling system; and (e) including the scope of procurement review in the audits (internal/external as appropriate) and submitting procurement-related findings as a separate section in the audit report.

C. Legal Operational Policies

66. **The Policy on Projects on International Waterways (OP 7.50) applies to this Project because Project activities involve the potential use of water in the Gulf of Mannar and Palk Strait, which are considered international waterways.** The Project falls under the exception to the riparian notification under paragraph 7(a) and 7(b) of the policy because activities are limited and small-scale, such as mangroves and seagrass plantation, conservation, protection of corals in one small island near the coast of Tamil Nadu, and preparation of ICZMPs for Tamil Nadu, which will not cause changes in the existing use of water or in water quality. An exception to the notification requirement according to paragraph 7(a) and 7(b) was approved by the World Bank management on June 8, 2024.

Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	Yes
Projects in Disputed Area OP 7.60	No

D. Environmental and Social

67. **The E&S risks are assessed as Substantial.** The risks of Project interventions relate to: (a) the unauthorized utilization/ acquisition of public/ private land on a small scale; (b) interventions aimed at improved management of sensitive ecosystems that might lead to temporary increases in access to these habitats; (c) loss of access to common property, temporary relocation, and loss of livelihood; (d) labor and labor influx; (e) gender-based violence; (f) presence of tribes in a few locations; (g) inadequate communication to target stakeholders and exclusion of certain disadvantaged groups; and (h) relatively low capacity of implementing and executing agencies, particularly at the district level, in managing E&S risks, though some do have limited experience. The SPMUs will assess, adopt, and implement community health and safety measures included in sub-project Environmental and Social Management Plans (ESMP). The ESMPs will also include assessments of any ESS4 risks to Project-affected persons and their assets.⁷ Both SPMUs will prepare and implement a Risk Assessment and Risk Mitigation plan for the use of drones

⁷ ESS4: Community Health and Safety addresses the health, safety, and security risks and impacts on project-affected communities and the corresponding responsibility of borrowers to avoid or minimize such risks and impacts.



in the Project as per existing national guidelines and procedures and World Bank guidance. The sexual exploitation and abuse/sexual harassment risk rating is assessed as Moderate⁸ and mitigation measures, such as sensitization trainings and a code of conduct, are embedded in the ESMPs and within the detailed project reports or stand-alone ESMPs.

68. **The risks and impacts of Project interventions are expected to be localized, manageable, and reversible due to their small to medium scale and the positive nature of investments.** Early screening of impacts and a strategic E&S assessment will be included in the ICZMPs and SMPs. A simplified risk-based approach to low- to medium-risk sub-projects, as adopted in the Project Environmental and Social Management Framework (ESMF), will require appropriate guidelines incorporated and/or the preparation of an Environmental and Social Due Diligence Report, including an ESMP. In the case of substantial-risk sub-projects, an Environmental and Social Impact Assessment (ESIA) with a customized ESMP will be prepared. In compliance with the Environmental and Social Framework, an ESMF (that includes Labor Management Procedures, a Resettlement Policy Framework, and a Tribal Development Framework), a Stakeholder Engagement Plan, and an Environmental and Social Commitment Plan (ESCP) have been prepared and disclosed for Tamil Nadu and Karnataka both in-country and on the World Bank external website.⁹ In terms of institutional arrangements, the SPMUs will hire E&S and communication experts as per the ESCPs. The SPMUs will be supported by a management consultancy in Karnataka and a communications agency in Tamil Nadu. As per the ESCPs, both SPMUs will develop and implement appropriate capacity building programs to apply the ESMF in sub-projects, monitor and audit implementation, and enhance existing grievance systems.

69. **Gender.** The Project aims to narrow the gender gaps in female labor force participation in the coastal regions of Karnataka and Tamil Nadu to 30 percent, by creating long-term and climate-resilient formal employment opportunities for women. The Project will: (a) provide training to the female workforce on emerging skills and technologies related to blue economy sectors such as plastic waste management, fisheries, ecotourism, coastal protection and conservation, community-based mangrove management, and biodiversity protection; (b) provide training on specific technical skills, such as business management, processing and packaging, accountancy, proposal writing, impact reporting, inclusive procurement, and service delivery; (c) increase female participation in emerging sectors of the circular economy (e.g., MRFs) by setting quotas for female employment and creating a conducive work environment (provisions for safety, social security such as medical insurance, and support for children's education); and (d) raise awareness among private sector and community networks, enterprise establishments, and SHGs on supportive and safe working environments for female employees. Progress in narrowing the female labor force participation gap will be tracked and reported through the Results Framework indicator "people benefitting from enhanced resilience of terrestrial and aquatic systems, of which female (number)".

⁸ Using screening tools for projects involving "major civil works" and "social protection."

⁹ State of Tamil Nadu disclosed the ESCP and ESMF on January 31, 2025, and SEP on October 24, 2024 (<https://tngreencompany.com/resource/resource-2>); State of Karnataka disclosed the ESCP, SEP, and ESMF (https://eparihara.aranya.gov.in/kers/public/download_doc) on October 24, 2024; ESCP and SEP have been disclosed on the World Bank's website on October 16, 2024 (<https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099101524221044930>) (<https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099101524221036291>). ESMF has been disclosed on the World Bank's website on February 5, 2025 (<https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099020525161029554>).



70. **Citizen engagement will be promoted through a host of actions.** These include: (a) community participation in ecosystem conservation activities; (b) establishing Beach Management Committees to involve communities in decision-making; (c) creating a knowledge platform or application for sharing information on project activities; (d) activities that enhance the social resilience of the targeted coastal communities (e.g., skills development and enterprise capacity building) and increase the focus on inclusion of landless families and women-headed households; (e) engagement of well-trained “blue cadre” personnel and plastic *mitra* (friends) to heighten communities’ sense of ownership and stewardship on shared marine resources; and (f) investments in awareness and capacity building of select climate-vulnerable coastal villages. Management plans for coastal ecosystems integrated in the CZMP and SMP will be prepared in a participatory manner to consider community concerns and suggestions. The Results Framework includes an indicator that measures beneficiaries’ satisfaction with Project interventions designed to increase coastal protection and conservation, enhance livelihood benefits, and reduce marine plastic pollution in targeted coastal communities (“share of target beneficiaries with rating “Satisfied” or above on Project interventions”) through periodic perception surveys. These surveys will also evaluate beneficiaries’ environmental benefits, the Project’s impact on their livelihoods, and community participation.

V. GRIEVANCE REDRESS SERVICES

71. **Communities and individuals who believe that they are adversely affected by a project supported by the World Bank may submit complaints to existing project-level grievance mechanisms or the World Bank’s Grievance Redress Service (GRS).** The GRS ensures that complaints received are promptly reviewed to address project-related concerns. Project-affected communities and individuals may submit their complaint to the independent Accountability Mechanism. The Mechanism houses the Inspection Panel, which determines whether harm occurred, or could occur, because of World Bank noncompliance with its policies and procedures, and the Dispute Resolution Service, which provides communities and borrowers with the opportunity to address complaints through dispute resolution. Complaints may be submitted to the Accountability Mechanism at any time after concerns have been brought directly to the attention of World Bank management and after management has been given an opportunity to respond. For information on how to submit complaints to the Grievance Redress Service, visit <http://www.worldbank.org/GRS>. For information on how to submit complaints to the World Bank’s Accountability Mechanism, visit <https://accountability.worldbank.org>.

VI. KEY RISKS

72. **The overall Project risk is Substantial** based on the following key risks and mitigation measures.

73. **Institutional capacity for implementation and sustainability risk is Substantial.** Key institutional capacity issues that could affect implementation include: (a) limited alignment and interdepartmental collaboration at the state and district level governments with respect to CZM planning, implementation, and information flows leading to fragmentation and misalignment of efforts; (b) limited human resource management affecting the ability to attract and retain technical experts; and (c) inadequate experience of state level departments with the World Bank-financed projects. To mitigate the risk, the project design supports: (a) strengthening CZM decision-making at the state level; (b) better alignment of central schemes/policies (e.g., the NCM and the National Marine Litter Policy); (c) support to learning and knowledge sharing among stakeholders to augment institutional capacity for coastal zone planning and



implementation; (d) engaging project management consultants to boost the SPMUs' capacity when requiring specific support; and (e) early notification of multisectoral committees to steer Project implementation.

74. **Fiduciary risk is Substantial.** The procurement and financial management (FM) risks are Substantial due to multiple implementing agencies with differing capacities and will require effective coordination. To mitigate these risks, the client will establish detailed procurement procedures, deployment of dedicated and skilled procurement staff, strengthening monitoring through integrated systems, establishing a procurement complaint handling system, and including procurement reviews in audits. For FM, risk mitigation measures include appointing qualified staff, providing training, using computerized accounting systems, and developing an FM Manual agreed with the World Bank. These actions will address capacity gaps and enhance coordination and oversight across all agencies.

75. **E&S risk is Substantial** for both environmental and social risks. Most of the targeted interventions are of small to medium scale, largely community-driven and nature-based, with a limited physical footprint. Grey coastal protection interventions, expected to be of medium scale, will be implemented only in areas with severe coastal erosion problems, and will be informed by the relevant management plans. Thus, risks and impacts are anticipated to be localized, manageable, and reversible. The capacity of the clients to address E&S risks is limited, which will be mitigated by using agreed risk management instruments, ensuring full staffing of qualified E&S specialists in SPMUs, and providing training as needed. Further details are available in the respective E&S instruments prepared for each state.

76. **Stakeholder risk is Substantial.** The risk of insufficient stakeholder buy-in and disagreements related to user access among coastal communities will be mitigated by actions described in the Stakeholder Engagement Plan to ensure robust engagement with all stakeholders. Experience in ICZM projects indicates possible resistance to CZM regimes and efforts to tackle pollution. This is especially the case when interventions seek to devolve user responsibilities, for example, having fishing communities take on conservation and restoration responsibilities. Early input from stakeholders and information on benefits that accrue to stakeholder groups would mitigate such risks. The implementing and executing agencies will engage in robust consultative processes as defined in the Stakeholder Engagement Plan to gain support and build consensus among stakeholders. Livelihood activities will prioritize communities that are adversely affected by the rehabilitation and conservation activities through proactive, gender-sensitive citizen engagement processes.



ANNEX 1: RESULTS FRAMEWORK AND MONITORING

PDO Indicators by PDO Outcomes

Baseline	Closing Period
To increase coastal protection and conservation	
People benefitting from enhanced resilience of terrestrial and aquatic systems (Number of people) ^{CRI}	
Sep/2025	Jun/2031
0	100,000
➤ People benefitting from enhanced resilience of terrestrial and aquatic systems - Female (Number of people) ^{CRI}	
Sep/2025	Jun/2031
0	50,000
➤ People benefitting from enhanced resilience of terrestrial and aquatic systems - Youth (Number of people) ^{CRI}	
Sep/2025	Jun/2031
0	25,000
Seascapes under enhanced conservation and/or sustainable management (coastal zones and oceans) (Hectare(Ha)) ^{CRI}	
Sep/2025	Jun/2031
0	30,000
To enhance livelihood benefits	
Number of beneficiaries employed (Number of people) ^{CRI}	
Sep/2025	Jun/2031
0	100,000
To reduce marine plastic pollution	
People in targeted coastal areas with less exposure to plastic pollution (Number)	
Sep/2025	Jun/2031
0	120,000
To increase coastal protection and conservation, enhance livelihood benefits, and reduce marine plastic pollution in targeted coastal communities	
Share of target beneficiaries with rating "Satisfied" or above on Project interventions (Percentage)	
Sep/2025	Jun/2031
0	75



Intermediate Indicators by Components

Baseline	Closing Period
Strengthening institutions for Integrated Coastal Zone Management	
Sustainable Management Plans for Coastal Ecosystems prepared and approved by the competent authority (Number)	
Sep/2025	Jun/2031
0	10
Shoreline management, coastal protection, and conservation	
Centers of Excellence established with business plans and operational (Number)	
Sep/2025	Jun/2031
0	5
Share of employees in mangrove plantations that are women (Percentage)	
Sep/2025	Jun/2031
5	30
Improving livelihoods for natural resource dependent communities	
Beneficiaries provided with training support on coastal livelihoods (Number)	
Sep/2025	Jun/2031
0	70,000
People benefiting from improved beach infrastructure (Number)	
Sep/2025	Jun/2031
0	100,000
Enhancing marine pollution management and plastic circularity	
Plastic waste removed (Metric ton)	
Sep/2025	Jun/2031
0	10,000
Plastic waste recycled or diverted (Metric ton)	
Sep/2025	Jun/2031
0	33,000
Private capital enabled (Amount(USD))	
Sep/2025	Jun/2031
0	3,200,000
Share of Project beneficiaries employed in MRFs and provided social security that are women (Percentage)	



Sep/2025	Jun/2031
0	65
Project Management	
Contingent Emergency Response Component	



Monitoring and Evaluation Plan: PDO Indicators by PDO Outcomes

To increase coastal protection and conservation	
People benefitting from enhanced resilience of terrestrial and aquatic systems (Number of people) ^{CRI}	
Description	Climate Resilience Indicator. [Karnataka 45,000 and Tamil Nadu 55,000]. The indicator measures the number of people who benefit from the improved ecosystems supported through the Project. This includes the number of people benefitting from the protective effect of ecosystems, such as mangrove forests and shelter belts, against climate hazards. It also includes people benefiting from livelihoods as a direct result of improved ecosystem health. This can include fishermen and those earning incomes from non-timber forestry products. The targeted coastal areas are all coastal districts of Karnataka and Tamil Nadu. This indicator supports the measurement of PrDO Indicator #1, which is a Corporate Scorecard Indicator.
Frequency	Annual
Data source	Field survey carried out individually by the Forest Departments in both Karnataka and Tamil Nadu, combined with a mapping of hazard zones and the population.
Methodology for Data Collection	The progress on the establishment of more resilient terrestrial and aquatic systems will be combined with maps of coastal hazard zones, and census or other population data sets for the corresponding coastal villages and administrative blocks will be superimposed. Surveys will also be undertaken to estimate beneficiaries generating income from improved livelihoods.
Responsibility for Data Collection	SPMUs
Seascapes under enhanced conservation and/or sustainable management (coastal zones and oceans) (Hectare(Ha)) ^{CRI}	
Description	Climate Resilience Indicator. [Karnataka 20,000 and Tamil Nadu 10,000]. This indicator measures the total area of critical and/or vulnerable terrestrial and aquatic natural habitats such as coastal wetlands, mangroves, seagrass, estuaries, and beaches of all coastal districts of Karnataka and Tamil Nadu whose management is improved through zoning, boundary demarcation, development of management plans, and capacity development for forest officers who are responsible for coastal management. The area will measure the “zone of influence” of investments so as to capture the wider area of improved seascapes. This indicator supports the measurement of PrDO Indicator #2, which is a Corporate Scorecard Indicator.
Frequency	Annual
Data source	Field survey carried out individually by the Forest Departments in both Karnataka and Tamil Nadu, combined with georeferenced maps of the intervention areas.
Methodology for Data Collection	Improvements to seascapes, which include the coastal and ocean zones, will be measured by assessments of the influence of physical and nonstructural (i.e., management) interventions on coastal ecosystems. This methodology will consider the default “zone of influence” of interventions, as applied to environmental impact



	assessments. As the Project progresses, detailed analysis will help to refine the assessment of these improved seascapes. The areas will be monitored through physical verification and cadastral maps, and geospatial analysis.
Responsibility for Data Collection	SPMUs
To enhance livelihood benefits	
Number of beneficiaries employed (Number of people) ^{CRI}	
Description	Climate Resilience Indicator. [Karnataka 60,000 and Tamil Nadu 40,000]. This indicator measures the number of project beneficiaries that have improved livelihoods as a direct consequence of the Project. This includes engagement in activities such as mangrove restoration and plantation, agroforestry, wetland management, ecotourism, working in MRFs, beneficiaries of community grants, and others. This indicator supports the measurement of PrDO Indicator #3, which is a Corporate Scorecard Indicator.
Frequency	Annual
Data source	Enterprise surveys will be carried out by firms hired by SPMUs for both states on a sample basis. Enterprise surveys are subdistrict level surveys with project beneficiaries who are either enterprise owners, SHG members, or employees who have benefited from the Project.
Methodology for Data Collection	Review and tabulation of data from the enterprise survey will be undertaken annually. People working in small and medium-sized enterprises and SHGs who are engaged in full-time work due to the Project are also considered beneficiaries of the Project.
Responsibility for Data Collection	SPMUs
To reduce marine plastic pollution	
People in targeted coastal areas with less exposure to plastic pollution (Number)	
Description	[Karnataka 70,000 and Tamil Nadu 50,000]. The indicator measures reduced exposure to plastic pollution through establishment of MRFs, plastic waste receptacles, and infrastructure solutions to abate pollution. Less exposure to pollution means a reduction of damage inflicted over the lifetime of the Project to human health, dwellings, and immovable assets from the introduction of foreign substances into the environment that cause adverse change. The targeted coastal areas are all coastal districts of Karnataka and Tamil Nadu
Frequency	Annual
Data source	Field surveys carried out in Rural and Urban Development Departments in separate surveys based on district.
Methodology for Data Collection	The downstream plastic-shed area which defines the influence of plastic pollution abatement investments, will be superimposed annually with census data of the corresponding coastal villages and administrative blocks to generate the total number of people with less exposure to pollution. This downstream plastic-shed is the area downstream of measures to reduce plastic leakage, to capture, for example,



	the effect of deploying trash booms on rivers.
Responsibility for Data Collection	SPMUs
To increase coastal protection and conservation, enhance livelihood benefits, and reduce marine plastic pollution in targeted coastal communities	
Share of target beneficiaries with rating "Satisfied" or above on Project interventions (Percentage)	
Description	[Karnataka 75 percent and Tamil Nadu 75 percent]. This indicator reflects the citizen engagement commitment of the Project by capturing the satisfaction of beneficiaries with project interventions as a demand-side social accountability measure. The focus of the perception survey will be on environmental benefits, livelihood aspects, and community participation.
Frequency	Biennial
Data source	Project Perception Survey carried out by the SPMU for both states
Methodology for Data Collection	A Perception Survey will be undertaken biennially across the states and ensuring gender inclusion, to periodically measure the satisfaction of stakeholders. The sample-based perception survey will focus on the perception of improvements in resilience in communities, the effectiveness of natural resource protection, and changes in livelihood aspects. Their findings and feedback will be integrated into the design and implementation of the Project to enhance or maintain the level of "satisfaction." By the Implementation Completion and Results Report stage, the Perception Survey would capture the satisfaction levels of the entire project outputs and outcomes, thereby demonstrating the perception of the Project success and approaches to integrate sustainable systems in place to continue the positive outcomes from a citizen's perspective.
Responsibility for Data Collection	SPMUs

Monitoring and Evaluation Plan: Intermediate Results Indicators by Components

Strengthening institutions for Integrated Coastal Zone Management	
Sustainable Management Plans for Coastal Ecosystems prepared and approved by the competent authority (Number)	
Description	[Karnataka 3 and Tamil Nadu 7]. The indicator measures the number of newly prepared and updated Management Plans (SMPs, Wetland Management Plans, Island Management Plans, ICZMPs) for all coastal districts of Karnataka and Tamil Nadu that integrate science with natural capital economics as well as social and cultural analysis using a highly participatory approach, prepared and approved by the SPMU. The indicator captures participating states that have completed the plans and have notified them by a competent authority.
Frequency	Annual



Data source	Government Notifications with (a) plans attached, (b) proceedings of stakeholder engagement documented, and (c) analytical reports generated as part of the process. The plans would need to meet minimum quality criteria that are mentioned in the Coastal Regulations Zone Notification of 2019. SPMUs will review and verify the completed baseline information phase and coastal profile to confirm that it is of high quality and that lessons learned, and best practices are followed. The plans will reflect feedback and ensure the application of practices (including the blue economy as core elements) and learnings from pilot states. The high-quality stakeholder engagement in preparation and implementation of these Management Plans ensures stakeholders are well informed throughout the process and supportive of the completed plans and the priorities and actions within them. Stakeholder engagement also includes ensuring gender balance as a core element.
Methodology for Data Collection	Review relevant documents. The SPMUs will verify the quality of stakeholder engagement during the preparation of the plans through site visits and interviews with selected stakeholders and/or stakeholder satisfaction surveys.
Responsibility for Data Collection	SPMUs
Shoreline management, coastal protection, and conservation	
Centers of Excellence established with business plans and operational (Number)	
Description	[Karnataka 1 and Tamil Nadu 4]. These Centers of Excellence will be established to study endangered species, critical marine ecosystems, and more. These centers will also forge active partnerships in research and knowledge with academic institutions and foundations both nationally and globally. This is a key capacity indicator as partnerships are crucial to the success of ICZM. This intervention is aimed at enhancing the understanding of conserving and restoring critical and vulnerable ecosystems and biodiversity faced with climate vulnerabilities. A Center of Excellence will be considered “established” when the civil work has been completed, the center has been notified in a government-issued order, and a business plan has been prepared. A Center will be considered “operational” when it starts accepting visitors at full capacity.
Frequency	Annual
Data source	SPMU
Methodology for Data Collection	A Document Review of official gazette notification of completion and operationalization of Centers of Excellence, followed by site visits at the MTR and ICR Stage to confirm that the COEs are established and operational.
Responsibility for Data Collection	SPMUs
Share of employees in mangrove plantations that are women (Percentage)	
Description	[Karnataka 30 percent and Tamil Nadu 30 percent]. This indicator captures the Project’s aim to narrow the gender gap in labor force participation across the coastal regions of the participating states, by creating long-term and climate-resilient employment opportunities for women in natural resource dependent communities in the formal



	economy by setting quotas to encourage female participation in climate-resilient occupations from which women have traditionally been excluded, particularly mangrove plantations. Mangrove plantations have historically been a male-dominated activity. With the increased participation of women, they would have diversified forms of livelihoods.
Frequency	Annual
Data source	Field survey (labor)
Methodology for Data Collection	Review of questionnaire and tabulation of data
Responsibility for Data Collection	SPMUs
Improving livelihoods for natural resource dependent communities	
Beneficiaries provided with training support on coastal livelihoods (Number)	
Description	[Karnataka 30,000 and Tamil Nadu 40,000]. This indicator measures the number of beneficiaries, including women, that have been supported through knowledge and skills training in community livelihood development, business management, entrepreneurial mindset, digital payments, and marketing platforms; and technical support undertaking coastal livelihoods such as ecotourism, aquaculture, plastic waste chains, and more.
Frequency	Annual
Data source	Project Perception Survey
Methodology for Data Collection	Review of questionnaire and tabulation of data
Responsibility for Data Collection	SPMUs
People benefiting from improved beach infrastructure (Number)	
Description	[Karnataka 20,000 and Tamil Nadu 80,000]. This indicator captures the number of people benefiting from the “Blue Flag”-certified beaches and the infrastructure put in place to achieve certification. It includes both visitors to the beaches and people generating income from activities linked to the beach. Blue flag certification addresses environmental education, water quality, environmental management, and safety. Blue flag certification is expected to increase visitor numbers and create opportunities for tourism. Examples of infrastructure needed to achieve certification include information boards; boardwalk observation stations; shelters; and demarcated trails for access, drinking water, sanitation and refuse bins.
Frequency	Annual
Data source	Field surveys; geotagged monitoring
Methodology for Data Collection	Field surveys undertaken by the Forest Department in collaboration with relevant departments



Responsibility for Data Collection	SPMUs
Enhancing marine pollution management and plastic circularity	
Plastic waste removed (Metric ton)	
Description	[Karnataka 7,000 and Tamil Nadu 3,000]. This indicator measures the volume of plastic waste recovered (a) in trash booms installed in the river systems, and (b) through the Fishing for Litter scheme in coastal Karnataka and Tamil Nadu.
Frequency	Biennial
Data source	Field survey (plastic waste survey)
Methodology for Data Collection	Review of survey and tabulation of data
Responsibility for Data Collection	SPMUs
Plastic waste recycled or diverted (Metric ton)	
Description	[Karnataka 30,000 and Tamil Nadu 3,000]. This indicator measures the volume of plastic waste sorted in MRFs and includes: (a) plastic waste recycled, and/or (b) plastic waste packed for subsequent use as fuel or as construction material. MRFs are in select coastal districts of Karnataka and Tamil Nadu by the Rural and Urban Departments.
Frequency	Annual
Data source	Field survey (plastic waste survey) and reporting by the MRFs
Methodology for Data Collection	Review of survey and tabulation of data
Responsibility for Data Collection	SPMUs
Private capital enabled (Amount(USD))	
Description	[Karnataka US\$1.2 million and Tamil Nadu US\$2 million]. The indicator captures: (a) the amount of private capital used in project-established MRF facilities during the lifetime of the Project as part of their performance contracts, (b) the amount of blue carbon finance monetized, and (c) amount invested in ecotourism/ allied activities.
Frequency	Annual
Data source	Financial reports from MRFs and purchase agreements for carbon credits and ecotourism/ allied activities
Methodology for Data Collection	Reports (including financial statements) will be reviewed and verified by the SPMUs to capture the US\$ amount of private capital enabled.
Responsibility for Data Collection	SPMUs



Share of Project beneficiaries employed in MRFs and provided social security that are women (Percentage)	
Description	[Karnataka 65 percent and Tamil Nadu 65 percent]. This indicator measures the rate of beneficiary female participation in Project-supported MRFs that are conducive work environments for women, namely provisions of social security, such as medical insurance and support for children's education.
Frequency	Annual
Data source	MRF annual reports
Methodology for Data Collection	MRF annual reports will be reviewed and verified by the SPMUs
Responsibility for Data Collection	SPMUs
Project Management	
Contingent Emergency Response Component	



ANNEX 2: IMPLEMENTATION ARRANGEMENTS AND SUPPORT PLAN

COUNTRY: India

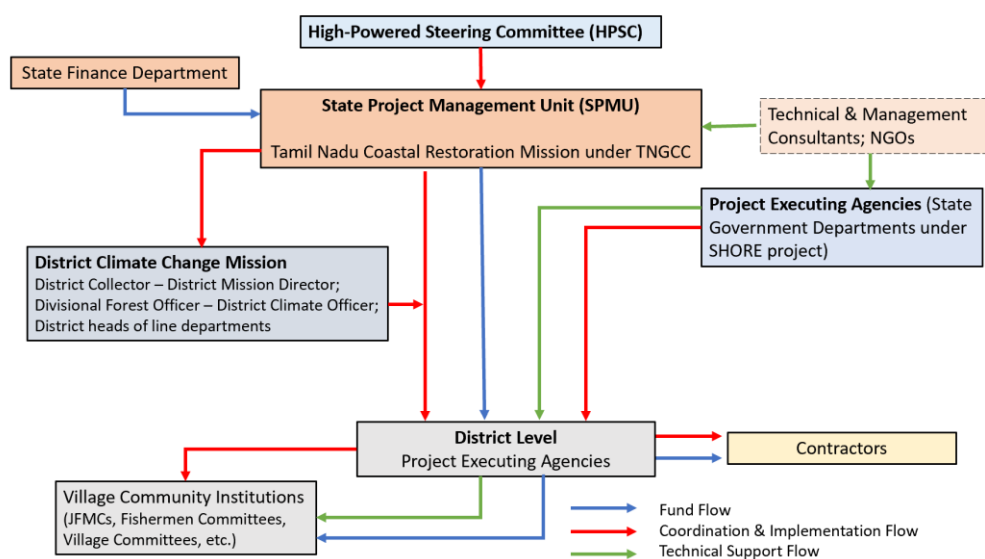
Strengthening Coastal Resilience and the Economy Project

A. Overall Implementation Arrangements

Tamil Nadu

1. In Tamil Nadu, the Project will be implemented by the Department of Environment, Climate Change, and Forests, Government of Tamil Nadu, through a three-tier implementation structure (Figure A.1).

Figure A.1: Tamil Nadu Project Organogram



2. The Government of Tamil Nadu has established the HPSC to provide oversight and guidance to TNGCC and implementing departments, steer convergence, and enable coordination among these departments. The HPSC is chaired by the Chief Secretary including 16 members such as Additional Chief Secretaries/Principal Secretaries of participating line departments, Finance, Revenue, Planning and other key stakeholders to facilitate project implementation.

3. The TNGCC within the Department of Environment, Climate Change, and Forests will be SPMU. Established under Section 8 of the Companies Act, 2013, TNGCC leads the state's climate action and sustainability efforts, implementing four flagship environmental missions, including the Tamil Nadu Coastal Restoration Mission. As the nodal agency, TNGCC integrates policy planning, project execution, and stakeholder collaboration, ensuring that climate resilience, ecosystem restoration, and sustainable development are mainstreamed across the state's coastal and environmental initiatives.

4. TNGCC is headed by the Additional Chief Secretary/Principal Secretary, Department of Environment, Climate Change, and Forests, with a Board of Directors comprising Secretaries from key line departments, such as Finance, Water Resources, Municipal Administration, Agriculture, Housing and Urban



Development, Energy, the Principal Chief Conservator of Forests, and the Chairperson of the State Pollution Control Board and Chief Executive Officer, TNGCC. The TNGCC is already implementing three pivotal government missions: (a) the Tamil Nadu Climate Change Mission; (b) the Green Tamil Nadu Mission; and (c) the Tamil Nadu Wetland Mission. The SPMU will be responsible for overall project coordination, and specifically for compiling annual work plans and budgets of all districts, financial management including annual audits, E&S risk management, managing the grievance redress mechanism, carrying out monitoring and evaluation, and reporting activities, as well as serving as the Secretariat for the HPSC. The SPMU will also ensure synergy and coordination among its different missions. The SPMU led by the Chief Mission Director and Project Director, TN-SHORE, will oversee strategic coordination and governance to ensure efficient project execution. SPMU will function independently within TNGCC's administrative framework, reporting directly to the Chairman and Managing Director of TNGCC and the TNGCC Board. The SPMU will be supported by a multidisciplinary team comprising technical, administrative, and finance personnel (Figure A.2).

Figure A.2: Tamil Nadu SPMU Structure



5. The district-level PEAs will be responsible for the execution of project activities in the coastal districts of Tamil Nadu, including the preparation of district-level annual work plans and budgets for the approval of the SPMU and combining them into state-level work plans and budgets; management of contracts; and implementation of community-level activities in coordination with Village Community Institutions, such as Joint Forest Management Committees. At the district level, PEAs will oversee project management functions and liaise with the District Climate Change Committees to facilitate inter-departmental coordination. The District Climate Change Mission, headed by the District Collector, along with the Divisional Forest Officer serving as the Climate Officer, will coordinate the efforts of various PEAs to ensure seamless implementation of TN-SHORE activities within each coastal district.

6. The following district-level PEAs have been identified: (a) the Tamil Nadu Green Climate Change Company (as TNPMU, with consultancies and technical assistants for project management); (b) the Tamil Nadu Pollution Control Board, for pollution and plastic waste management; (c) the Tamil Nadu Forest Department, for afforestation, mangroves, seagrass, wetland management, biodiversity conservation centers, alternate livelihoods; (d) the Department of Water Resources, for wetlands restoration and erosion control/management; (e) the Department of Environment and Climate Change and Greater Chennai Corporation for Blue Flag beaches, climate change analytics; the Gulf of Mannar Biosphere Reserve Trust, for community grants; (f) the Department of Rural Development, for Blue Flag beaches, alternate livelihoods; (g) the Department of Municipal Administration, for Blue Flag Beaches; and (h) Tamil Nadu

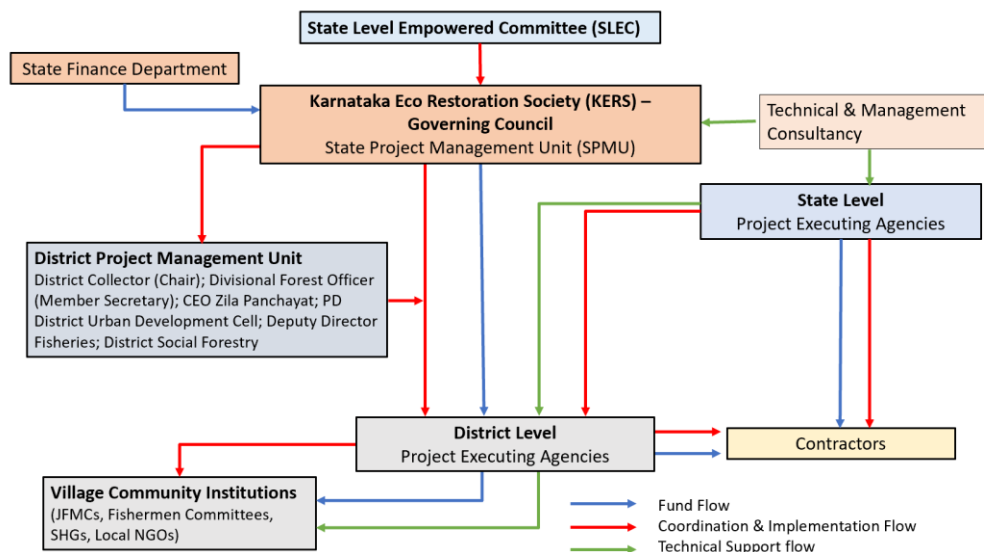


Pollution Control Board, for the plastic circular economy. Institutional and implementation roles and responsibilities for different PEAs in Tamil Nadu are presented in Table A.1.

Karnataka

7. The Government of Karnataka has issued a Government Order for the establishment of the SPMU to be housed within KERS, and the District Project Management Unit (DPMU) to implement the Project. The Project will be implemented through a four-tier implementation structure (Figure A.3).

Figure A.3: Karnataka Project Organogram



8. The Government of Karnataka has established a State Level Empowered Committee (SLEC) for oversight and guidance to Karnataka Eco-Restoration Society (KERS) and to implementing departments for effective coordination and implementation of project activities. The SLEC will be chaired by the Additional Chief Secretary (Forests, Ecology, and Environment) and includes the Principal Secretaries of all participating line departments. Such vertical alignment and oversight and guidance from the SLEC will ensure efficient and effective project delivery, facilitate interdepartmental coordination, and pave the way for convergence.

9. The SPMU in Karnataka will be housed in KERS and will be responsible for the implementation of project-related activities in Karnataka. KERS is headed by the Principal Chief Conservator of Forests (Head of Forest Force), Government of Karnataka, with members from various line departments, such as the Pollution Control Board, Biodiversity Board, Fisheries Department, Rural Development Department and Municipal Administration. The SPMU, headed by the Principal Chief Conservator of Forests (Development), with support from multi-departmental representatives, is entrusted with bringing increased synergy among different missions and ensuring: (a) greater convergence with other activities and schemes of the Government, (b) avoiding duplication and double dipping, (c) strengthening existing institutions, and (d) improving coordination and adopting an integrated approach for coastal zone management. The SPMU will be responsible for interdepartmental coordination, approval of annual work plans and budgets, and monitoring of SHORE. The SPMU will be staffed by officials from the Forest and other Departments, supported by a team of technical (including E&S), finance, procurement, and project administration specialists and consultants.



10. DPMUs have been established in all the three coastal districts of Karnataka. The DPMUs will be headed by the District Commissioner, with the District/Divisional Forest Officers as Member Secretary, and will include district-level heads to bring convergence to project activities. The DPMU will be responsible for all core and allied activities such as project implementation and interdepartmental coordination at the district level, including preparation and implementation of annual plans. The approved plans/schemes executed by the PEAs are monitored and coordinated by the DPMUs and then collectively by the SPMU at the state level. In addition to implementing activities for coastal resilience, the DPMU will undertake other activities such as promoting alternate livelihoods and enhancing plastic collection and plastics circularity.

11. PEAs will implement project activities in the respective coastal districts, including preparation of district level annual work plans and budgets for the approval of the SPMU and combining them into state-level work plans and budgets; management of contracts; and implementation of community-level activities in coordination with Village Community Institutions, such as Joint Forest Management Committees and Village Forest Committees. PEAs, in coordination with DPMUs, will prepare the annual plans and budget requirements, which will be approved by the SPMU. The PEAs will be responsible for management of contracts and implementation of community-led activities with Village Committees and Joint Forest Management Committees. The following executing agencies have been identified: (a) KERS, as the SPMU; (b) the Department of Environment – PEA implementation through District/Divisional Forest Officers; (c) Department of Forests – PEA implementation through District/Divisional Forest Officers; (d) the Department of Urban Development – PEA implementation through identified Urban Local Bodies; (e) the Department of Fisheries – PEA through their division offices; (f) the Karnataka Pollution Control Board – PEA; (g) the Biodiversity Board – PEA; and (h) the Rural Development Department through Panchayati Raj Institutions and the Environment Management and Policy Research Institute. A summary of the institutional and implementation roles and responsibilities for PEAs in Tamil Nadu and Karnataka is presented in Table A.1.

Table A.1: Institutional and Implementation Roles and Responsibilities

State		Indicative Roles and Responsibilities
Tamil Nadu and Karnataka		
SPMU: Tamil Nadu Green Climate Company (TNGCC) SPMU: Karnataka Eco-Restoration Society (KERS)		Overall Project Management and coordination (Component 5): compiling work plans and budgets, financial management, E&S risk management, managing the grievance redress mechanism, carrying out monitoring and evaluation, and serving as the Secretariat for the HPSC / SLEC.
DPMUs in Karnataka: to support SPMU in coordination at district level		Preparation of district-level work plans and budget estimates, contract management, implementation of community-level activities including stakeholder consultations.
District Climate Change Mission in Tamil Nadu: to support SPMU in coordination at district level		Inter-PEA coordination for implementation of different activities within the district
Project Executing Agencies (PEAs)		
Tamil Nadu		



State	Indicative Roles and Responsibilities
Department of Environment, Climate Change and Forests	Component 1: Preparation of ICZMP and management plans for critically vulnerably coastal areas, monitoring carbon stocks; learning agenda and knowledge exchange. Component 2: Mangrove and seagrass restoration, bio-shields, coastal wetlands management, Centers of Excellence, grey/ hybrid infrastructure Component 3: Blue Flag beaches, ecotourism/livelihoods activities
Department of Rural Development / Panchayat Raj Department	Component 3: Community livelihoods and Blue Flag beaches
Gulf of Mannar Biosphere Reserve Trust	Component 3: Community grants
Department of Water Resources	Component 2: Wetland restoration and erosion control/management measures
Pollution Control Board	Component 4: Plastic waste management, awareness raising
Greater Chennai Corporation	Component 3: Marina Blue Flag Beach, Chennai
Karnataka	
Department of Forests, Ecology and Environment	Component 1: Coastal and Marine Cell, Carbon Platform; Learning agenda and knowledge exchange Component 2: Hybrid infrastructure, Bioshields, mangrove and ecosystem restoration Component 3: Community livelihoods, blue flag beaches Component 4: Plastics circularity
Department of Rural Development	Component 4: Plastic waste management in rural areas
Department of Urban Development	Component 4: Plastic waste management in urban areas
Department of Fisheries	Component 3: Community livelihoods Component 4: Plastic waste management (fishing gear)
State Pollution Control Board	Component 4: Pollution management and monitoring
State Biodiversity Board	Component 2: Biodiversity monitoring and ecosystem management

B. Financial Management Arrangements

12. **Interim Unaudited Financial Reports (IUFR):** The states will pre-fund the Project, and disbursements will be based on IUFR, and these reports will be submitted quarterly within 45 days from the end of the quarter.

13. **External audit.** Each state is required to submit an annual audit report that covers all Project funds, including expenditure at the PEA level, within nine months after the end of the financial year. A Chartered



Accountancy firm will conduct annual audits of the Project's Financial Statements in accordance with terms of reference agreed with the World Bank. The annual audit reports will be published on the SPMU website.

14. **Internal audit and control.** A Chartered Accountancy firm will conduct internal audits, covering controls and contract management. Auditors will be selected based on criteria and terms agreed with the World Bank within six months after project effectiveness.

C. Procurement Arrangements

15. **The initial Procurement Plan prescribes the applicable procurement arrangements, and the PIP provides detailed guidance.** The procurement profile envisaged under the Project comprises the procurement of civil works, lab equipment, marine pollution control equipment, floating trash barriers, machinery, plantation, spatial mapping software, capacity building programs, artificial reef modules, goods/testing equipment, and a few consultancy service contracts, as well as strategic and policy advisory support. The profile varies between the two states. The PPSD identified risks that substantially align with the World Bank's procurement capacity assessment. The PPSD suggests using the Request for Bids with the National Competitive market for key procurements, mainly civil works. The World Bank has provided a brief orientation on the World Bank's PPSD and STEP portal and has recommended deputing staff for advanced procurement training.

D. Implementation Support Plan

16. The World Bank's implementation support covers technical, fiduciary, and E&S aspects, including identified risk mitigation measures. Communications with the project and stakeholders will be transparent and ongoing during Project implementation. Implementation support will be periodic, focusing on critical project aspects that might initially require additional technical assistance. Diligence on technical, fiduciary, and E&S matters will be maintained through (a) regular progress reviews and timely interventions to address implementation challenges, and (b) monitoring the submission of financial and progress reports.