

PROGRAM FRAMEWORK DOCUMENT

Scaling Up Partnership Investments for Sustainable Development of the Large Marine Ecosystems of East Asia and their Coasts

Annex B. Results Framework

Table 1: Results Framework

Program Objective	Key Indicators of Success
<p>Program Objective: To promote sustainable development of large marine and coastal ecosystems of East Asia and Pacific and improve livelihoods of local populations by reducing pollution and promoting sustainable marine fisheries, ICM and ecosystem based management; and to enhance the delivery of on-the-ground impacts and supporting capacity-building through targeted knowledge management activities and through portfolio learning and targeted research</p>	<p>Environmental Indicator: (i) reduction of nutrients and pollution to East Asia seas; (ii) increase in seascapes protected under management mechanisms; (iii) reductions in fishing effort and more sustainable harvesting of targeted fish stocks</p> <p>Economic Indicator: Increase in net economic benefits from fisheries and newly-created alternative livelihoods for project countries and targeted communities by end of project.</p> <p>Social Indicator: Increase in the average wealth status for households in targeted communities with attention to an equitable distribution of benefits.</p>
Expected Outcomes ¹	Core Outputs
<p>Pollution Reduction</p> <ol style="list-style-type: none"> 1. nutrients and pollution to East Asia seas reduced (N, P, BOD [kg/yr]; pollutant [kg/yr]) 2. informed decision making and improved public awareness of non-point pollution issues 	<ol style="list-style-type: none"> 1. completed and fully demonstrated , innovative pollution control infrastructure/facilities 2. institutionalized pollution management practices 3. upgraded monitoring system for non-point pollution 4. reliable and disclosed monitoring data
<p>Sustainable Marine and Coastal Resources Management</p> <ol style="list-style-type: none"> 1. increase in sustainably managed seascapes that integrate biodiversity conservation 	<ol style="list-style-type: none"> 1. increase in certified production seascapes and marine protected areas

<p>(area protected under management mechanisms such as ICM, marine spatial planning, MPA [ha to be determined during preparation])</p> <ol style="list-style-type: none"> 2. national and local development plans that integrate biodiversity conservation, climate resilience, ICM and ecosystem based management (number of national, local, and/or sector policies incorporating management mechanisms) 3. financial sustainability of protected area enhanced (central/local government budget allocated to protected area management) 4. recovered (or recovering) fish stocks in target locations 5. alternative livelihoods introduced (number of people provided alternative livelihoods) 6. improved capacity for climate resilience 	<ol style="list-style-type: none"> 2. marine spatial planning based on ICM and ecosystem based management; community coastal management plans and District level Marine Conservation Areas with zoning for multiple use, including No-Take Reserves, legally established (# has tbd] 3. financing mechanisms for PA management in place 4. a) effective monitoring systems for fishery resources and marine biodiversity; b) improved use of fish gear/techniques (% vessels applying improved gear/techniques) 5. diversified and innovative alternative livelihood and eco-business models demonstrated, including some at commercial scale 6. uptake of sustainable marine and coastal resources management by coastal stakeholders as a cost-effective, no-regrets strategy for climate resilience
<p>Knowledge Management</p> <ol style="list-style-type: none"> 1. enhanced capacity and performance resulting from shared experience and lessons learned 2. improved cost-benefit analysis for development actions, and national wealth accounting 3. stakeholders' ownership of program/project activities increased 4. synergy of taking program approach reported (PFD annual status reports) 	<ol style="list-style-type: none"> 1. productions of State of the Coasts reports, workshops on good practices in pollution control, ICM and fisheries management; institutional twinning and targeted investigations of biophysical, economic and policy questions designed to fill knowledge gaps, introduce innovation and enhance performance 2. developed methods and quantified value and market potential of coral reef and mangrove ecosystem 3. public awareness campaigns and community-based pilots demonstrating improved management and sustainable, alternative income generation

¹ Project level ecosystem and environmental results indicators will be established in each project and sufficient budget programmed to determine impact from the baseline situation consistent with GEF International Waters M & E guidance and GEF 5 Strategy.

Table 2: Monitoring and Evaluation Plan

Program Objective	Key Indicators of Success	Targets 2018*
To promote sustainable development of large marine and coastal ecosystems of East Asia and Pacific and improve livelihoods of local populations by reducing pollution of and promoting sustainable marine fisheries, ICM and ecosystem based management; and to enhance the delivery of on-the-ground impacts and supporting capacity-building through targeted knowledge management activities and through portfolio learning and targeted research	Environmental Indicator: (i) nutrients and pollution input to East Asia seas; (ii) seascapes protected under management mechanisms; (iii) recovery of/reduced fishing pressure on overexploited fish stocks	(i) 10% decrease (ii) 20% of the region's coasts (iii) recovered to [reference year to be determined] level
	Economic Indicator: Net economic benefits from fisheries and newly-created alternative livelihoods for beneficiary communities by end of project/program	20% increase
	Social Indicator: Unemployment rate of target communities	[specific target % to be determined]% decrease
Expected Outcomes	Key Indicators of Success	Targets 2015*
Pollution Reduction	Completion of planed demonstrations of pollution control infrastructure/facilities	100%
	Number of national, local, and/or sector policies incorporating pollution management practices	National: 4 Local: 20 Sector: 5
	Improvement of monitoring system for non-point pollution (Yes/No)	Yes
	Reliable monitoring data disclosed (Yes/No)	Yes
Sustainable Marine and Coastal Resources Management	Number of national, local, and/or sector policies incorporating management mechanisms such as ICM, marine spatial planning, MPA	At least 30
	Central/local government budget allocated to protected area management (Yes/No)	Yes
	Proportion of vessels applying	50%

	improved gear/techniques	
	Number of stakeholder reached out by awareness campaign for sustainable marine and coastal resources management	At least 5000 people
	Number of households provided alternative livelihoods	At least 2000 households
	Frequency of knowledge management activities	At least 100 activities
	Number of PFD status reports	Annually

* The baseline for each target will be confirmed.

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Annex C. Preliminary Project Summaries

Component 1: Pollution Reduction

Focusing on introducing integrated and innovative pollution management interventions to reduce land based pollution to East Asia Seas, this component will include the following two projects:

Manila Bay Integrated Water Quality Management Project (Philippines): USD 50 million IBRD Loan, USD 8 million GEF Grant, and USD 7.5 million cofinancing

The Manila Bay-Pasig River-Laguna Lake systems encompass the country's largest lake (Laguna de Bay 90,000ha) that drains into the formerly pristine Manila Bay (with a coastline of 190 km and encompassing some 1,700 sq. km.) through the National Capital Region's main river system, the Pasig River (27 km in length with 3 main tributaries and numerous smaller canals or *esteros*). The economic significance of Manila Bay is highlighted by the Bay area's contribution of around 53% of the country's Gross Domestic Product (GDP) and being the host to more than 30 million people. Its economic value is estimated at 8 billion pesos annually. Despite their economic significance and various regulations, the quality of Manila Bay and key tributaries remains below sustainable levels and poses a health risk for local populations. To improve the water quality of the Laguna de Bay, Pasig River and Manila Bay System, the Government of the Philippines has requested the GEF and the World Bank's assistance to prepare and implement a Manila Bay Integrated Water Quality Management Project. The proposed project will aim to address what has been a long-standing need for a long term comprehensive process to clean-up and improve the water quality of the Manila Bay, Pasig River and Laguna Lake system through comprehensive support for new and innovative integrated water quality management and institutional mechanisms, public-and-private pollution reduction initiatives, improved monitoring and enforcement and active community engagements. The project has five components: i) establishment of the Institutional Framework and Mechanisms for integrated and comprehensive management of the Manila Bay-Pasig River and Laguna Lake system, ii) co-financing of LGU implemented sub-projects and key priority investments to be implemented by national and regional agencies to improve water quality and abate sedimentation pollution. Investments will focus heavily on provision of improved wastewater and sanitation and solid waste services, particularly for the poor areas that surround the vast system of waterways and the identified pollution hotspots, iii) monitoring of key pollution and sedimentation parameters to establish credible water quality information for public disclosure and sound decision making, iv) strengthened regulatory systems and on-the-ground enforcement actions that are monitored by independent third-parties, and v) promotion of civil society, private sectors and community engagements. GEF would co-finance/support all components, whereas the IBRD loan would finance mainly the investment activities under component ii). The project would serve as a basis of the longer term engagement of the World Bank and GEF in activities addressing land based pollution issues. It will build on the lessons learned of Bank-supported projects in Laguna de Bay as well as the series of Manila Water and Sewerage Projects implemented by the two private

concessionaires, including the Manila Third Sewerage Project co-financed by a grant from the GEF. It is expected that vigorous monitoring and evaluation activities will be performed to monitor and evaluate ecosystem responses to proposed pollution reductions, and forecast recovery of water quality of ecosystem. In addition, good practices and lessons learned from the project supported management program in the Manila Bay-Pasig River and Laguna Lake system will be identified, assessed, packaged and promoted for scaling up efforts across the entire 7 watershed areas of Manila Bay and other river basins in the Philippines, as well as other integrated river basin and coastal area management projects across the region.

Major quantifiable indicators: 1. Reductions in wastewater and sources of pollution and sedimentation being achieved by participating LGUs and concerned Government Departments with jurisdictions impacting on Manila Bay and its tributaries; 2. Reduction in biochemical oxygen demand and other pollutants (N, P, etc.) being discharged into Manila Bay and tributaries. 3. Reduction of heavy metal discharges among registered jewelry manufacturers and other small to medium firms operating in project-covered areas; by 1. At least 50% of the 200 LGUs (approx.) with jurisdictions impacting on Manila Bay and its inland waterways have implemented pollution abatement system such as septage management and wastewater treatment facilities to treat domestic wastewater and sludge; 2. At least 30% of small and medium firms in project-covered areas have improved wastewater management system

Guandong Agricultural Pollution Control Project (China): USD100 million IBRD Loan, USD 6 million GEF Grant and USD100 million cofinancing

The project is proposed to promote sustainable agricultural and rural development in Guangdong Province with an objective of reducing rural and agricultural pollution by promoting source reduction, commercial utilization of agricultural wastes, and sound management and treatment of rural wastes and wastewater. The proposed project will undertake the following activities: (a) agricultural pollution control by source reduction and ecological treatment of irrigation run-off; (b) collection and treatment of rural and agricultural wastes; and (c) commercial utilization of agricultural biomass wastes. Implementation of this proposed project will deliver many benefits, such as, reduced non-point pollution to the South China Sea; improved safe water supply to Hongkong and Macau; cleaner living environment and conditions in rural areas; and reduced greenhouse gas emission through sound agricultural waste management and biomass fuel pellet production. A robust non-point pollution monitoring network will be enhanced with the support of this project so that direct environmental impacts of the project could be closely monitored. In addition, the project's impact on water quality improvement in receiving water body will be monitored and analyzed. Cost-benefit of the proposed interventions, including the benefits derived with respect to pollution reduction, energy conservation and climate change mitigation measures, will also be analyzed so that successful experience could be identified, packaged and shared among pollution hotspots areas in the region.

Major quantifiable indicators: a) sound soil nutrient management practices and agrochemical uses practiced on about 5,000 ha agricultural lands with reduced agrochemical uses and nutrient runoff monitored and evaluated; b) agricultural runoff from 5,000 ha agricultural lands treated and actual nutrient removal monitored and evaluated; c) rural wastewater from 50 villages collected, treated and actual nutrient removal monitored and evaluated; d) 20 large scale

agricultural waste biogas facilities constructed with actual nutrient removal monitored and evaluated; e) conservation agriculture piloted on about 1,000 mu crop lands with reduced nutrient runoff monitored and evaluated

Component 2: Sustainable Marine and Coastal Resources Management

This component will include the following four projects with a focus to promote sustainable marine and coastal resources management. Multiple benefits, such as improved and resilient livelihoods of coastal communities, sustainable fishery and coral reef management, and effective conservation of marine biodiversity are expected to be achieved through project level interventions.

Central Philippines Rural Development Project (Philippines): USD 200 million IBRD Loan, USD 7 million GEF Grant, and USD 30 million cofinancing

The Central Philippines Rural Development Project will aim to assist vulnerable Central Philippine communities and their local government units in enhancing their institutional and planning capacities, as well as the resilience and sustainability of their physical and economic infrastructure and natural resource and biodiversity base. As such, the Project is expected to assist the communities to cope with, and adapt to, the impacts of climate change. It will be funded through a US\$200 million IBRD loan¹ and a US\$ 7 million GEF grant (US\$ 5 million from the Biodiversity (BD) window and US\$ 2 million from the International Waters (IW) window.) IBRD-supported baseline activities will include (i) Strengthening institutional mechanisms to support integrated local development planning for crop, livestock, fishery and natural resource management, and to improve community-level regulatory enforcement and compliance; (ii) Co-financing (between national and local governments) of investments in rural infrastructure, enhancing agri-, aqua- and maricultural value-added, economic diversification through alternative sustainable livelihoods, and water and waste water management to support sustainable and climate-resilient development; and (iii) Project management, coordination and monitoring and evaluation.

The GEF will co-finance on an incremental cost basis activities related to integrated local development planning, local investments in infrastructure and alternative livelihoods in communities with globally significant biodiversity areas, seascapes and landscapes and priority degraded coastal areas, in a manner consistent with the GEF 5 BD and IW Strategies. The candidate sites for GEF TF support would straddle in areas along the Central Philippines with known species and ecosystems of global significance. Some 48 initial candidates being considered, which include among others (i) the Tayabas Coast in Region 4-A; (ii) the Verde Island Passage and Palawan Island in Regions 4-A and 4-B; (iii) Balabac-Bataraza in Palawan in Region 4-B; (iv) the Donsol-Ticao Pass in Sorsogon (Region 5); (v) San Miguel Bay in Region 5; (vi) Guimaras Strait and Mt. Kanlaon Protected Area in Region 6; (vii) Malapascua and Gato islands in Region 7; (viii) Danajon Bank in Region 7; (ix) Eastern Samar sea and Samar Island Protected Area in Region 8; (x) Sogod Bay in Region 8. These areas of global environmental

¹ US\$ 200 million would be the IBRD co-financing that the World Bank would bring to the project. Approximately US\$ 30 million is expected as Government co-financing for the loan. Therefore the total co-financing for the GEF TF grant would be about US\$ 230 million.

importance and their natural resource base are threatened by unsustainable farming and fishing practices, including use of slash-and-burn agriculture, illegal fishing methods, over-fishing and over-exploitation of resources. Climate change is expected to contribute to these threats and negative impacts as coastal and upland communities try to cope with climate change.

The GEF -supported activities will be fully integrated and mainstreamed into the baseline project, using the same project management processes and procedures. Specifically under Component I, biodiversity concerns would be mainstreamed into local development plans (LDPs) through measures that recognize, protect or restore the components of biodiversity that contribute to ecosystem functioning and local economic development, and reduce the negative biodiversity impacts of productive sectors, notably agriculture and fisheries and tourism, and infrastructure investments. In coastal and upland areas, LDPs would be designed or revised or updated to incorporate measures to control erosion due to unsustainable upland agriculture practices, and to restore / rebuild marine fisheries and reduce pollution of coasts in line with the priorities of the communities, as well as ongoing related efforts by the Partnerships in Environmental Management for the Seas of East Asia and the Coral Triangle Initiative, among others. Such plans would be financed and implemented under Component II. An example for specific activities include agroforestry, promotion of sloping agricultural land technology, establishment and enhanced management of marine / fish sanctuaries, including no-take zones and buffer zones as relevant based on maps indicating land use, vegetation, coral status, sea grass status, mangrove status and areas critical to sea turtles, marine mammals and other endangered marine organisms. Another example would be assistance for mangrove plantation boundary delineation and demarcation as well as establishment and maintenance. Furthermore, wastewater treatment would be supported in coastal areas threatened by eutrophication, in particular in growing eco-tourism destinations. The GEF would also support production of biodiversity-friendly goods and services in an effort to sustainably enhance local communities' livelihoods. Finally, Component 1 would also improve the management effectiveness of existing marine protected areas by enhancing the enforcement capacities of communities and local governments to reduce over-fishing and secure coastal/marine habitats.

The Project would be implemented by the Department of Agriculture, in collaboration with the Departments of Environment and Natural Resources, Agrarian Reform and local government units over a period of 5 years.

Major quantifiable indicators: 1. Climate-resilient rural infrastructure constructed and used; 2. Implemented climate-resilient agriculture and fishery; 3. Alternative livelihoods introduced and implemented; by 1. Climate-resilient investment priorities and programs established by all concerned LGUs; 2. Climate resilient designs for rural infrastructure, agriculture, NRM and alternative livelihoods developed.

Coastal Resources for Sustainable Development Project (Vietnam): USD 100 million IDA Credit, USD 7 million GEF Grant and USD 10 million cofinancing

Marine and coastal resources are among Vietnam's key renewable natural assets. The objective of the proposed project is to improve the management of coastal resources in support of sustainable fisheries by mainstreaming marine spatial planning (MSP) strategies, biodiversity

conservation and sustainable and equitable use into marine and coastal management in selected coastal provinces of Vietnam. The project will contribute to the broader goal of supporting coastal livelihoods, as well as the viability and competitiveness of the fishery sector. It will be done through, among others: institutional capacity strengthening for sustainable resources management through ICM in support of fisheries, promotion of sustainable aquaculture practices, and promotion of sustainable near-shore capture fisheries. Introducing the ICM will reduce not only unprotected ecosystems in terms of area and biomass, but also unprotected threatened species in terms of number (Outputs 1.1 and 1.2) with an expectation of improving the management of existing and new protected areas (Outcome 1.1). Innovative approaches for protecting fish stocks and their habitats will be tested. Measureable conservation and sustainable use targets, related to Output 2.1, will be integrated into economic development and sectoral planning frameworks at national, provincial and local levels and monitored under the project closely. Using reporting systems such as the PEMSEA's State of Coasts, the project will review project progress, summarize best practices and lessons learned and analyze benefits derived from project interventions. Such knowledge and best practices will be disseminated for further adoption and scaling up nationwide.

Major quantifiable indicators: 3.1 Co-management, fisheries sustainability and key species and habitat protection becomes mainstreamed into the design, planning and management of coastal and marine protected areas; 3.2 Fishing practices shift towards more selective, less destructive and wasteful harvesting methods; 3.3 Alternative livelihoods are developed for vulnerable fishing communities and sustainably linked to co-management plans; 3.4 Fishing activities are more sustainable and value-added through improved environmental and hygienic conditions of landing sites and fishing ports; 3.5 Knowledge management mechanisms facilitate the sharing of information and experiences among GEF project agencies and partners, leading to improved information transfers and effective scaling up of positive examples; by 3.1.a Co-management guidelines developed, relevant staff training, and capacity of local fishing community strengthened; Over 100 government employees and over 1,000 fishermen trained; 3.1.b Number of co-management plans piloted; proportion of fisheries within priority provinces under some form of co-management regime; 3.1.c Marine and coastal protected area management plans (minimum 3) and species protection plans (minimum 1) apply Co-management framework; Preliminary Areas of Interest (AOIs) include Hòn Mê (Thanh Hoa Province), Cua Lo (Nghe An Province), Ca Mau Nature Reserve (Ca Mau Province), Cu Mong Lagoon and O Long Lagoon (Phu Yen Province), and Quy Nhon (Binh Dinh); 3.1.b&c Amount of coastal areas restored/protected and under improved management; 3.1.d At least 40,000 ha of marine area designated for the protection of one or more threatened species; 3.2.a New regulations on improved fishing gear (less destructive) with methods enforced and number of violations reduced; Number of and funding for enforcement forces increased; 3.2.b Number of fishermen/fishing vessels switching gear and fishing methods to for sustainable forms. Number of fishermen with environmentally-friendly fishing gear increased; 3.2.c Fisheries improvement projects (FIPs) launched in and around at least two priority sites and linked to marketing of more responsibly harvested (i.e. Best Practice) seafood. At least 100,000 ha under some form of fisheries eco-certification and/or Fisheries Improvement Plan process; 3.3.a Year-to-year changes in total effort from inshore fishing fleet; 3.3.b Increased income of fishing households who volunteer to exit nearshore fishing; 3.4.a Reduction of losses in quality and value of catch; 3.4.b Additional employment opportunities and other benefits to fishermen

resulting from improved fishing infrastructure; 3.5.Learning and information exchange through IW:LEARN activities: Establishment of project website following IW:LEARN guidelines, participation in GEF IW biennial conferences, and sharing of experiences; At least 2 Experience Notes produced.

Coral Reef Rehabilitation and Management (COREMAP) Phase III (Indonesia): USD 130 million IBRD Loan, USD 12 million GEF Grant, USD 30 million cofinancing

Coral Reefs in Indonesia - about 10% of the world's coral reefs - are the most diverse in the world and are considered the epicenter of marine biodiversity. Located in the heart of the Coral Triangle, the Indonesian reefs are at increased risk from climate change and escalating atmospheric CO₂ levels leading to warming and acidifying ocean waters, as well as from local stressors associated with increased population pressure, development pressure, destructive and over-fishing, pollution and invasive species. The GEF and World Bank funded COREMAP 1&2 projects have been battling these threats, through community-based co-management, education and awareness about the importance of reefs, community empowerment and economic incentives through seed funds for alternative livelihood generation. However, major challenges remain and the planned COREMAP Phase 3 Project will scale up efforts for transformational change in how coral reefs are administered and used by rural communities, as well as facilitate the extension of these interventions over larger areas across Indonesia. This will be done through mainstreaming good practice in community-based management of coral reefs in 1,000 villages in Eastern Indonesia by promoting effective local governance, demonstration of economic benefits, and knowledge dissemination and communication within the framework of ICM. These activities will enlarge the coverage of protected areas to conserve threatened coral reef ecosystem and improve the management of existing and new protected areas. The project outcomes will include: i) the implementation of MSP, ii) monitoring, control and surveillance (MCS) systems in place, iii) eco-business approach (technical and financial capacity, training and outreach, business incubation and marketing). The project's knowledge management activities will review the socio-economic benefits derived by coastal communities as a consequence of the program, and utilize the outputs for scaling up efforts elsewhere in the region.

Major quantifiable indicators: B) Ecosystem-based Management: 50 Marine Conservation Areas (KKL-PHKA, KKLD, etc.) effectively managed at the National and District levels in project covered areas; Collaboratively and effectively enforced no-take zones, covering 15% of coral reefs in all project covered areas; Coral reef related Integrated Coastal Management (ICM) introduced in 40 districts; Local communities and district Government agencies engage in collaborative management of Coral Reef Resources in target project sites; Climate Change Risk is effectively addressed through the project; by Preparation of CR management plans in new districts; Provincial and District level MCS support for MPAs (in phase 2 & new phase 3 sites); Valuation of coral reef and related ecosystem services; Feasibility studies for sustainable financing of MPAs; Implementation of threatened marine species program (turtles, sharks, etc.); Implement the national program for coral reef biodiversity conservation; District level integrated zoning, licensing and permitting for tourism, fisheries, conservation, transport related activities; Provision for identifying and controlling impacts from ridges-to-reefs including support to measure water quality as per District management plans; Coral reef community empowerment boards instructed in ICM approach; Legal agreements for co-management of SSF to regulate

capture fisheries in all 1,000 villages (Continued support in Phase 2 areas and additional Phase 3 sites); Plans to protect local fish spawning areas are prepared and implemented in relevant villages as part of CRM plans; Development and piloting of access-right based governance system; Small-scale vessel registration program to control fleet piloted in selected districts; Coral reef pro active restoration as needed; Piloting of Eco-certification in selected districts; Support to fish processing and marine products and market access to increase value of fish resources in co-management sites; Extension program in project sites and IEC; Community-based MSC with district level back-up to protect co-management efforts; CC Adaptation mainstreamed into District Development Plans; Vulnerability assessments of new project sites (CTI REG will do this in some sites); Investing in green infrastructure for climate change adaptation; Training to coastal communities on CCA adaptation; 5 sub-projects on ecosystem-based approach to CCA to increase resilience of biodiversity rich coral reef and associated ecosystems promote adaptation and protect natural infrastructures to increase resilience of coastal communities; Promote carbon sequestration in coastal areas (REDD+ & Blue Carbon for Carbon offsets).

C) Conservation based Economic Activities and Livelihoods Development: Average beneficiaries revenue increased by 20% in project target areas; Eco-business enterprises are developed in 40 districts (reaching 25,000 beneficiaries); Economic benefits from fisheries sector increased in selected project sites and serve as demonstration to local government and communities; by Revenue-generating activities developed and implemented in 600 villages; Livelihoods diversification strategy developed; PPP & PES schemes developed (blue carbon offsets in voluntary markets; biodiversity conservation agreements or premiums for protection of mangroves/reefs, etc.); Community-level support for poverty-reduction in participating villages (health posts, schools, information centers, etc.); Ecotourism development (joint-ventures PS with communities) to develop homestays, guided tours, artisan craft, food supply to hotels, etc.; Technical and financial capacity, training and outreach, business incubation in selected districts.; Assist in mobilizing financing for eco-businesses through grants, loans, and private investments; Marine resources production (mariculture) sub-projects implemented in 30 districts; Support to improve quality of selected landing sites (small infrastructure); Certification scheme for sustainable fisheries; Assistance to improve access to higher markets for fish products.

Component 3: Knowledge Management

This component will have the following two projects:

Targeted Learning and Innovation: Capturing Coral Reef Ecosystem Services in East Asia (Regional): USD 5 GEF Grant, and USD 17 million co-financing (in associated WB Loan for COREMAP 3; PPCR Grant, and Bilateral funds from AUSAID and Queensland).

This regional project will be a source of applied science and technology information for the design of interventions to improve the effectiveness of managing coral reef and related ecosystems for resilience to climate change and variability and for increased benefits to coastal communities and tropical coastal ecosystem-based economies in the region. The project will focus on: (i) quantifying and valuing coral reef and mangrove ecosystem services related to CO2 mitigation and adaptation, (ii) piloting application of this information in on-the-ground management interventions and marketing to generate sustainable revenue streams and wealth for

communities investing in conservation and sustainable use of these resources, (iii) creating a knowledge platform to inform projects and stakeholders throughout the region on further refining, replication and scaling up of these models. The wealth of good practice would result tangible and continuous benefits at the local, regional and global level.

Major quantifiable indicators: 1. Robust science embedded within pilot projects creates four complementary outcomes that increase economic and ecological resilience of coastal communities to climate variability and change: (a) Wealth creation through new ecobusiness models that capture the benefits of reef ecosystem services; (b) External investments in reef management projects that sustain ecosystem services is catalyzed; (c) Political will for improved management increased due to public and government awareness of true value of ecosystem services; (d) Flows of coral reef ecosystem services improved through science-based approaches to marine spatial planning, including marine protected areas; by 1. Technical support for development of Eco-business models for inter alia: (i) coral reef-based aquaculture for the ornamentals trade, live-reef fish trade, and restoration of degraded reefs ; (ii) eco and cultural tourism; (iii) the sale of carbon emissions reduction credits and marine conservation premiums from well managed coral reef ecosystems, to the voluntary markets; 2. Inter-disciplinary teams of natural and social scientists, local practitioners and community entrepreneurs provide needed TA on the application of economic and biophysical data, Remote Sensing tools, ecological resilience and connectivity to eco-business models, ecosystem resilience and MSP.

Knowledge Management for Program Implementation (Regional): USD 1 million GEF Grant

The planned project will focus on be a regional activity led by PEMSEA, which would build on experience and knowledge gathered within the previous GEF and World Bank initiatives. The project will focus on: (i) gathering and analyzing the process, outputs, and outcomes of the above noted six projects; preparing lessons learned and best practice documents; and creating guidelines to facilitate replication and scaling up of similar pollution reduction/sustainable marine and coastal resource management activities within the countries and across the East Asian Region; (ii) identifying and bringing together experts, managers and other stakeholders in each of these sectors into a network of practice, serving as a core advocacy and mentoring group accessible by national and local governments implementing SDS-SEA; and (iii) facilitation of interaction and tri-level (public-private-community) or cross-sector partnerships aimed at translating political commitments on the brown and blue agenda targets into action. In doing so, it is expected that the outputs from the investment projects will be effectively applied to build awareness and confidence among policymakers and managers at the national and local levels of government. In the end, this will result in the necessary political and social climate for increased investment by the public and private sectors in on-the-ground facilities and services for sustainable development of marine and coastal areas of the region.

Major quantifiable indicators: Improved political and social climate for increased partnership investments to protect and enhance coastal and marine ecosystem services made possible by: (a) informed national policymakers and Local Chief Executives serving as advocates for integrated management of coastal and marine areas and scaling up of multi-sectoral partnerships and investments; (b) timebound priority targets and projects in the brown and blue agenda mainstreamed into national and local government medium -term development and investment

plans; by (a) priority coastal areas and watersheds identified and selected as national commitment for scaling up ICM programs to achieve 20 percent of the coastline by 2015; (b) regional (e.g., EAS Congress 2015; Ministers Forum 2015) and other international and national forums (e.g., GEF IW Biennial Conference; Xiamen World Ocean Week; PEMSEA Network of Local Governments; National ICM Forums) to build awareness and strengthen intergovernmental and cross-sector partnerships, involving national policymakers, local chief executives, technical advisors/scientists, investors, corporate sector and community stakeholders; (c) site visits/seminars for national policymakers/local chief executives to the GEF/WB project sites in the region, as well as to other relevant locations/demonstration projects; (d) workshops/consultations on collaborative planning and mainstreaming investment projects on the brown and blue agenda into national and local government development and investment plans.

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Scaling Up Partnership Investments for Sustainable Development of the Large Marine Ecosystems of East Asia and their Coasts

Annex D. Investment Fund for Pollution Reduction in the Large Marine Ecosystems of East Asia

Progress Report

November 2010

Introduction

There is growing awareness and concern about the increasing occurrence of coastal pollution, anoxic conditions, fish kills, and harmful algal blooms (also known as red tides) in the seas of East Asia. These events can largely be linked to excess soluble pollutants in the form of Biochemical Oxygen Demand (BOD), nitrogen and phosphorus compounds originating onshore, entering the aquatic environment, and degrading water quality. These events are often concentrated around large population centers, and can have considerable environmental, social, health and economic costs.

To contribute to address land-based marine pollution in East Asia, the World Bank and GEF launched, in November 2005, the *Investment Fund for Pollution Reduction in the Large Marine Ecosystems of East Asia* (the IF), a mechanism to co-finance innovative projects aimed at reducing land-based marine pollution in selected hotspots. The IF is consistent with the Global Program of Action for the Protection of the Marine Environment from Land-based activities (GPA), which is a global pollution reduction program coordinated by the UNEP, and is the scientific foundation for GEF's International Waters (IW) pollution-reduction strategy.

Managed by the World Bank and funded by the GEF, the IF was designed to reduce land-based pollution discharges that have an impact on the seas of East Asia by leveraging investments in land-based pollution reduction through the removal of technical, institutional, and financial barriers. Expected outcomes of the IF are: increased investment in activities that reduce land-based pollution; removal of technical, institutional and financial barriers that currently limit investment in pollution reduction; and, replication of cost-effective pollution reduction technologies and techniques demonstrated by the IF. The principle of the IF is to use IBRD/IDA – GEF co-financing to support activities specifically aimed at reducing BOD, N and P pollution; best practices and lessons learned from the projects would be disseminated throughout the region with the contribution of the IF's regional partner, the *Partnerships in*

Environmental Management for the Seas of East Asia (PEMSEA), a regional capacity-building and partnership strengthening organization centered around the sustainable development of the seas of East Asia. It was intended that following the successful demonstration of innovative pollution reduction projects and financial mechanisms, and with active knowledge management support, experience gained would stimulate third parties to replicate similar projects throughout the region, ultimately resulting in large scale pollution reduction in the seas of East Asia.

The objective of this Progress Report is to provide updated information of results attained, progress achieved, and challenges met by the IF in its first years of operation. This Report also provides background and context for PEMSEA and the IF, and makes recommendations for the future.

I. A REGIONAL PARTNERSHIP FRAMEWORK FOR ACTION: PEMSEA

PEMSEA consists of 11 country partners¹ and 19 non-country partners, who collectively and individually implement the non-legally binding *Sustainable Development Strategy for the Seas of East Asia* (SDS-SEA), a framework of actions for achieving the goals of key international agreements and action plans related to coasts, islands and oceans.

The forerunner to PEMSEA, known as MPP-EAS, started as a regional pilot project focused on marine pollution prevention and management in the seas of East Asia in 1994, supported by the GEF, the United Nations Development Programme (UNDP), and the International Maritime Organization (IMO). In 2000, the regional project expanded its scope to building partnerships in environmental management for the seas of East Asia (PEMSEA) and through a two-year consultative process involving participating countries as well as regional and international stakeholders, developed the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA). The SDS-SEA was adopted by 12 East Asian countries in December 2003. In December 2006, 11 Country Partners and 12 Non-Country Partners formally recognized PEMSEA as the regional coordinating mechanism for the implementation of the SDS-SEA. In 2008, PEMSEA entered a new phase, developing into an international organization that would continue to coordinate implementation of the SDS-SEA over the long-term. In November 2009, during the East Asian Seas (EAS) Congress 2009, PEMSEA became an international legal personality. Graduating from a UN regional project into a regional convening agency with a legal personality was a significant step for PEMSEA.

Two future PEMSEA transitions have been identified:

¹ Cambodia, People's Republic of China, Democratic People's Republic of Korea, Indonesia, Japan, Lao People's Democratic Republic, Philippines, Republic of Korea, Singapore, Timor Leste, Vietnam

- 1) Transformation (2011-2014). Country and Non-Country Partners will transform PEMSEA into a self-sustaining, long-term regional mechanism for SDS-SEA implementation. SDS-SEA would continue to be mainstreamed in national development programs;
- 2) Sustainability (2014-2018). Country and non-Country Partners will assume full responsibility for the SDS-SEA implementation and the sustainability of PEMSEA as a regional partnership mechanism with its own legal personality;

PEMSEA aims to establish value-added partnerships, build capacities and provide services to effectively and efficiently achieve the objectives, targets and desired outcomes of the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA). PEMSEA's special niche in strengthening the management of marine and coastal resources is Integrated Coastal Management (ICM).

With regard to capacity development, PEMSEA pays special attention to knowledge sharing and management, as well as information dissemination among Partners and collaborators across the region. One of the instruments developed by PEMSEA for sharing knowledge and disseminating information is the triennial EAS Congress, which consists of an International Conference, various side events including a Youth Forum and Corporate Social Responsibility Forum, and a Ministerial meeting. In November 2009, the EAS Congress was attended by more than 1400 participants from 43 countries and 36 international organizations, with 51 co-convening organizations assisting with the organization of the 28 workshops. The Congress, which was first convened in 2003, has developed into a knowledge marketplace for marine and coastal governance. The Ministerial meeting is designed to provide Ministers of Country Partners with a progress report on the targets that have been adopted under the SDS-SEA framework, as well as a platform for updating and/or identifying new actions in response to changing conditions or emerging problems. During the November 2009 meeting, the Ministers signed the Manila Declaration, committing to strengthen the implementation of ICM for sustainable development and climate change adaptation in the region.

The PEMSEA Resource Facility provides technical and secretarial support to the partners for the implementation of the SDS-SEA, including developing and delivering ICM model training courses in partnership with interested institutions and organizations, networking with scientific and technical institutions to facilitate assistance to national and local governments for SDS-SEA implementation, providing technical assistance to local governments to prepare and implement bankable projects, and implementing information and knowledge sharing activities and outputs.

The relationship between the World Bank and PEMSEA is a collaborative effort to identify, prepare, promote, and facilitate the replication and scaling up of good practices financed under the IF, as well as other WB projects.

The World Bank has committed to manage the IF and to facilitate the development and financing of projects that demonstrate innovative, cost-effective solutions for reducing

land-based pollution and/or would remove significant barriers to investments in land-based pollution reduction of the marine environment.

PEMSEA's commitment is to set up a coordinating and replicating mechanism, to monitor progress, to evaluate and promote good practice, to prepare multimedia materials, and otherwise carry out knowledge management in pollution reduction.²

II. INVESTMENT FUND DESIGN

The GEF resources made available under the Investment Fund are managed by the World Bank as a GEF Implementing Agency. Projections are for a total of \$80 million funded by the GEF, designed to co-finance operations from different sources of public and private sector finance. Under the initial design approved in November 2005 by the GEF Council, GEF co-financing is to be committed to the IF in three tranches, as follows:

Tranche 1: US\$35 million
Tranche 2: US\$30 million
Tranche 3: US\$15 million
Total: US\$80 million

The IF is to co-finance projects in support of infrastructure, technical assistance, capacity building, and information dissemination and replication. All projects would be associated with other sources of funding, in particular World Bank operations. GEF co-financing was to leverage World Bank and other financing by a ratio of at least 1 (GEF) to 3 (other). Other conditions for GEF financing under the IF included: (i) the investment would have to be located within the coastal watersheds of one of the six East Asian Large Marine Ecosystems (LMEs); (ii) it would have to demonstrate an innovative technical, institutional, or financial mechanism to reduce land-based water pollution; (iii) it had to have high likelihood of replication nationally or regionally; (iv) it would have been unlikely to proceed without GEF grant financing; (v) it had to have the necessary co-financing available; (vi) it had to have been endorsed by the proposing country's GEF focal point; and (vii) it had to meet all relevant World Bank appraisal criteria.

Projects include investments in one or more of the following types of activities:

- *Innovative financing mechanisms*: improving access to finance for rural and urban land-based pollution reduction projects through implementation of revolving funds, cross-sectoral financing, and other financing innovations;
- *Wastewater and sanitation management and treatment*: demonstration and use of innovative technology and innovative methods for wastewater and sanitation management (e.g., construction of engineered wetlands, construction of combined

² See Project Document: Implementation of the Sustainable Development Strategy for the Seas of East Asia, (June 2007) UNDP

wastewater/septage treatment plants, enhancements to existing infrastructure and systems to improve their efficiency; improvements in the efficiency of septage collection services);

- *Water-borne pollution from solid waste*: leachate control programs for landfills and dump closures;
- *Pollution control in rural and peri-urban areas*: systematic treatment of livestock waste, cost-effective approaches for agricultural and aquaculture pollution control, innovative management systems for collection and treatment of waste from agro-industries;
- *Coastal ecosystem management*: wetland creation, restoration, and preservation; education and awareness projects; information exchange and sharing;
- *Institutional reform*: utility reform, institutional rationalization, establishing links and creating opportunities for collaboration between NGOs, government agencies, and private companies;
- *Capacity building*: consultancies, training programs, dissemination of best practices;
- *Policy and planning improvements*: improving legal, regulatory, and policy climate through innovative changes;
- *Management reforms*: establishment of public-private partnerships and private sector management concessions for pollution control.

Where appropriate, cross-sectoral approaches are encouraged, such as integrated water resource management and environmental protection, especially in land-based pollution hotspots.

Approval of Tranches by the GEF Council sets aside funds for projects and approval of projects has been done on a rolling basis by the GEF CEO, in a streamlined manner with project documents circulated to Council for information.

A Revolving Fund (RF) was to be integral to the design of the IF to pilot a long-term sustainability approach. The idea arose from the gap in East Asia, not of liquidity, but of high-quality projects to fund. The idea aimed to further leverage the impact of some of the GEF financing by providing finance for the preparation of new projects that would then receive funding from the World Bank or from another financial institution, without GEF involvement in the implementation phase.

The first phase of the Investment Fund was approved by the GEF Council in two tranches: in November 2005 (Tranche 1a; US\$ 25 M) and in November 2007 (Tranche 1b; US\$ 10 M).

III. IMPLEMENTATION PROGRESS AND FUTURE OUTLOOK

Implementation Status Summary

The projects under the IF have been identified rapidly, and account fully for the first tranche of US\$35 million. Six projects (Ningbo, Shandong, Manila, Liaoning, Vietnam, and Shanghai)³ have received World Bank Board approval, of which five are under implementation, and one is awaiting effectiveness. One last project (Huai River)⁴ is under preparation and expected to be approved by the Bank Board in the second half of 2011.

One project (East Java project, Indonesia) approved into the pipeline in 2005 was later dropped because co-financing did not materialize. Likewise, the Revolving Fund was dropped after numerous attempts leading the World Bank to conclude that it could not proceed under current procurement and fiduciary procedures, and agreed with the GEF Secretariat to drop the RF. The issue could be revisited by the World Bank, GEF Secretariat and PEMSEA, especially in light of the recent recognition of PEMSEA's legal personality.

For the projects that received funding and approval from GEF, funds were allocated with high co-financing (an average ratio of 1 - GEF- to 20 -WB and Government) exceeding the ratio of 1:3 anticipated.

Projects under the IF cover a wide range of technical and institutional innovations:

- using natural and artificial wetlands to treat wastewater;
- improving the management of septic tank systems;
- improving cooperation among agencies to manage wastewater;
- improving the management of utilities;
- introducing new technologies (chemically enhanced primary treatment of wastewater);
- addressing rural and agricultural non-point sources of pollution; and
- improving the management of water flow in coastal zones.⁵

These projects represent innovations within their specific national contexts, and frequently required risk-taking by provincial and city authorities who were prepared to challenge the status quo in order to implement an innovative project. The IF therefore gave recipients an opportunity to experiment with new technology or new management options in order to reduce pollution. In all cases, the absence of IF financing would have ruled out the innovative aspect and the project would have been limited to funding baseline activities. In some cases, the availability of IF financing, and the overall goal of promoting innovative, environmentally friendly technologies in pollution reduction,

³ GEF Ningbo Water and Environment Project; Second Shandong Environment Project; GEF – Manila Third Sewerage Project; Second Liaoning Medium Cities Infrastructure Project, VN-GEF-Coastal Cities Project

⁴ GEF Shanghai Agricultural and Non-Point Pollution Reduction Project, Huai River Basin Marine Pollution Reduction project

⁵ In preparation

encouraged project authorities to contribute disproportionately high amounts of funding to finance the project. The potential to participate in cutting edge, innovative projects was a great stimulus to some project sponsors.

A summary table of project status is found in Annex 1, and a full list of commitments made and results achieved per category is found in Annex 2.

Knowledge Management

Knowledge Management (KM) is a key element related to the implementation of the IF. The dissemination of lessons learned and best practices from projects under the IF is intended to progressively lead to their large scale replication, with the ultimate objective of significant contributions to reducing land-based pollution to the seas of East Asia. It depends as much on the generation, extraction and presentation of information from IF projects as it does on dissemination by PEMSEA and through other channels, as well as on existing adoption and uptake incentives. The IF in association with networks linked to PEMSEA and the GEF is instrumental in initiating dissemination of information, as a basis for expanded future knowledge management. Specific actions include national and subregional workshops and carrying out exchange visits, activities that will become more systematic as all the projects become fully effective.

The Bank has contributed to KM in the following ways, and by participating in the following forums:

- The World Bank participated in the 2nd Intergovernmental Review Meeting of the GPA, held in Beijing in October 2006, on global pollution reduction. The World Bank delivered a keynote address on the IF; the Shandong project team also participated;
- One IF project team participated in the Fifth GEF IW Biennial Conference in October 2009 in Cairns, Australia;
- Since their inception, individual projects provide links to the International Waters Learning Exchange and Resource Network (IW:LEARN), GEF's principal information sharing website;
- Given the similarity in some components between the Shandong and Manila IF projects (septage management), project teams carried out mutual exchange visits to gain information and share learning.

PEMSEA has contributed to KM on the topic of the IF through numerous events and seminars:

- The presentation and exchange of information through PEMSEA's forums and the EAS Congress in particular is one dimension of this process;

- PEMSEA publishes a semi-annual magazine that covers all coastal and marine issues, including marine pollution prevention;
- PEMSEA achieved considerable progress in setting up a coordinating and replication mechanism in fulfillment of its IF objectives, including the initiation of pollution reduction implementation plans/financing and investment strategies in seven river basins in three regional pollution hotspots, as well as preparation of a communication strategy, a framework for information-education-communication activities, and an outline for a website.

Together, the Bank and PEMSEA have disseminated information and knowledge from IF projects, even at their early stage of implementation:

- The World Bank participated in the Fourth GEF IW Biennial Conference in July 2006 in Cape Town, South Africa, in which 314 participants representing 70 GEF IW projects, 68 countries, and all IW ecosystem typologies were present. The World Bank served as one of the table hosts at the peer-to-peer assist clinic on the subject of “Results Frameworks and Indicators”, and co-hosted the World Bank / UNDP / PEMSEA Strategic Partnership exhibit, which won First Place for Best Presentation in the Innovation Marketplace. Two IF projects’ teams (Liaoning and Manila) participated in the meeting;
- Altogether 14 participants, including the World Bank’s IF team, contributed to the December 2006 PEMSEA East Asian Seas Congress, as speakers, moderators, and panelists. Both World Bank and non-World Bank staff composed the team. Three projects’ teams (Ningbo, Shandong and Manila) made presentations in technical workshops;
- The Bank, PEMSEA, UNDP and GEFSEC held a three-day Organizational Workshop on the Strategic Partnership for the Sustainable Development of the Seas of East Asia, in June 2008, in Quezon City, Philippines, to design a management framework to facilitate coordination and interaction;
- Three IF projects (Ningbo, Shandong and Manila) attended the November 2009 PEMSEA East Asian Seas Congress in Manila, Philippines, as well as two non-IF project carrying out pollution reduction (Thailand Livestock Waste Management project and the First Pearl River Delta project). The projects participated in a workshop on innovative policies and practices in water supply, sanitation and pollution reduction, and lessons learned from the projects will serve as material for replication and scaling up;
- PEMSEA identified indicators for the IF and for its own activities associated to the IF as part of its mandate.

As the projects implementation continue to make progress, more systematic information exchange will take place, which will include annual reporting to PEMSEA,

contributions to PEMSEA's publications, dissemination of projects' own publications, production of audiovisual material, exchange visits between projects, and additional organization and participation in local and regional workshops.

Looking Forward: Mainstreaming IF objectives into World Bank CAS / CPS

One of the IF's objectives was to ensure that investments made were well integrated into selected World Bank Country Assistance Strategies (CAS) and Country Partnership Strategies (CPS). The seven projects of the first tranche were approved by both the GEF Council and the Bank Board indicating the fit of the IF with both GEF and Bank country strategies.

However, as preparations for the second tranche are being made, and in order to ensure a broad scale up of the program, continued efforts towards aligning countries' national priorities, PEMSEA's SDS-SEA and the Bank's country partnership strategies are required. To this end, the World Bank and PEMSEA will establish a joint World Bank / PEMSEA technical team to liaise on a regular basis, as well as meet directly or remotely every six months to review the development, implementation, and outcomes of their complementary and joint initiatives. The technical team will actively publicize PEMSEA and the IF objectives including disseminating information within the World Bank by project, IF and PEMSEA staff, and PEMSEA will make a series of presentations or workshops at the World Bank's headquarters with the World Bank's country and region teams as a target audience.

All IF projects are included in the GEF IW:LEARN hub, and monitoring of the website and keeping projects updated will be an ongoing activity. Cooperation between the World Bank and PEMSEA, both within the context of the IF and beyond it, has been made official through the signing of a Memorandum of Understanding in November 2009, at the East Asian Seas Congress. This will further reinforce consistency between the strategies.

In parallel, PEMSEA will continue to inform relevant ministries and agencies within member countries in East Asia, through its own focal points and members, to prioritize land based marine pollution prevention and habitat protection.

Conclusion

In conclusion, the IF has made good progress in launching projects with high demonstration value. Co-financing is high, revealing strong commitment from the client to look at the IF in a much broader context. When all Tranche 1 projects come fully on stream, the pollution reduction impact is expected to be significant, and the demonstration potential equally important. A more significant impact will occur when dissemination and replication throughout the region takes place, with the help of PEMSEA and other partners. Indications exist that demand for GEF funds from the IF to co-finance pollution reduction projects remains high.

The SP's approach to demonstrate, disseminate, and replicate has high potential, but depends on the priority and willingness of countries to finance pollution reduction projects, and the availability of co-financing. This in turn requires a sustained effort to help countries prioritize land-based pollution and identify sources of financing.

The programmatic approach established through the IF mechanism is seen as being very positive. It has enabled actors to strategically plan over a multi-year period and identify a pipeline of projects eligible for funding. The IF structure has further enabled numerous World Bank projects to be co-financed in areas of growing importance (e.g. wetlands, institutional reform, partnership strengthening, non-point source pollution) that would not otherwise have been financed under domestic sources or under regular Bank financing.

PEMSEA is seen as a strategic regional partner for the World Bank and the GEF, and strengthening and expanding the scope of the Bank's interaction with PEMSEA beyond the IF is an opportunity to further engage on issues of environment and sustainable development in East Asia.

The partnership would benefit from a relationship that could go beyond the current scope of IF projects, and gain from PEMSEA's integrated, regional vision, regional coverage, local presence, and cross-sectoral and integrated approach. In return, PEMSEA benefits from global knowledge and the capacity of a partner like the World Bank to finance projects with environmental benefits.

Annex 1. Projects under IF

The table below provides a synopsis of the projects under the IF:

Table 1: Status of Projects under Tranche 1 (as of July 2010)⁶

Project	LME	Board Approval date	Status	GEF grant (US\$ M)	World Bank financing ⁷ (US\$ M)	Pollution Reduction Target ('000 tons)	
						Planned	Progress
Ningbo (China)	East China Sea LME	06/29/06	Two wastewater treatment plants (WWTPs) under test operation; the constructed wetland to be completed in April 2010; Wetland Center opens to the public in June 2010.	\$ 5	\$ 140.10	BOD: 20 (2010) N: 4 (2010) P: 0.5 (2010)	0 as WWTPs yet to be fully functional and constructed wetland still under construction
Shandong II (China)	Yellow Sea LME	02/27/07	MIS for septic tank management has been completed; Policy on septic tank management proposed; vacuum trucks and treatment equipment procured	\$ 5	\$ 201.89	BOD: 1.7 (2010)	2009 data yet to be reported.
Manila Third Sewerage Project (Philippines)	South China Sea LME	06/14/07	Three out of the 6 services contracts have been implemented, and the remaining 3 contracts are expected to be awarded by Apr 2010. Water Quality Monitoring Equipment procured in 2009. Other equipment is expected to be procured by Nov 2010. Partnership Strengthening with Local Government Units are under implementation. TA for rate rebasing completed.	\$ 5	\$ 84.46	BOD: 9.0 (2012) N: 2.2 (2012) P: 0.34 (2012)	BOD: 10.0 (2010). Target exceeded due to high treatment efficiency and underestimation of original load.
Liaoning Medium Cities (China)	Yellow Sea LME	06/14/07	Draft TORs prepared. Consultant selection to be started in Q1 2010.	\$ 5	\$ 187.50	BOD: 5.8 (2012) N: 1.1 (2012) P: 0.2 (2012)	0 as construction of WWTP is ongoing.

⁶ Development of the IF program was benefited from successful preparation of the GEF financed a China Guangdong Pearl River Urban Development II (PRD II) Project. WWTP construction under the project was completed in 2009. Equipment installation is expected to be completed in 2010. Full operation of the wastewater treatment facilities is expected to reduce about 16,700 tons of COD discharge and about 2,200 tons of NH₄-N discharge to the South China Sea.

⁷ According to Project Appraisal Document, if available, otherwise according to Project Concept Note. Represents amount invested in wastewater and sanitation only, by World Bank, Government, other banks or donors.

Project	LME	Board Approval date	Status	GEF grant (US\$ M)	World Bank financing ⁷ (US\$ M)	Pollution Reduction Target ('000 tons)	
						Planned	Progress
Coastal Cities (Vietnam)	South China Sea LME	06/23/09	Project became effective in 2009; implementation started. Baseline to be established after the 1 st year implementation.	\$ 5	\$ 21.70	95% BOD removal and 85% N and P removal from the baseline by 2013	0 as project implementation just started
Shanghai Non-point Pollution Reduction (China)	East China Sea LME	06/10/10	Board approved. To be effective.	\$ 5	\$ 26.87 ⁸	BOD: 0.64 (2013) N: 0.032 (2013) P: 0.001 (2013)	-
Huai River (China)	Yellow Sea LME	11/27/10	Expected council approval in March 2010;	\$ 5	\$ 32.82 ⁹	TBD	-
Revolving Fund	Regional	-	Dropped	-	-	-	-
Total				\$ 35	\$ 695.34		

Ratio of GEF financing to World Bank financing is 1:20 on average.

Indicative levels of pollution in the East Asian Seas are displayed in the following table for comparison with targets under the IF:

Table 2: Indicative levels of pollution in East Asian Seas

LME	COD ('000 t/year)	Total BOD ('000 t/year)	Inorganic N ('000 t/year)	Phosphate ('000 t/year)
East China Sea ¹⁰	6,770	N.D.	57	703
Yellow Sea	N.D.	N.D.	N.D.	N.D.
Bohai Sea	N.D.	N.D.	N.D.	N.D.
South China Sea ¹¹	N.D.	2,831	N.D.	N.D.

Note: N.D. = No Data

⁸ Government contribution; however, GEF grant is associated to a US\$ 1 Bn World Bank Shanghai Urban Environment Adaptable Program Loan; ⁹ Government contribution.

¹⁰ From: GIWA #36: East China Sea. Figures for 2003. Pollutants discharged to the East China Sea by three major rivers: Yangtze, Minjiang, and Jiujiang

¹¹ From: GIWA # 54: South China Sea. Figures for 1993. Emission of organic water pollutants in the South China Sea region.

Although direct comparison is impossible because BOD ≠ COD, Total N ≠ Inorganic N, and Total P ≠ Phosphate, an indicative comparison can be made of IF pollution reduction vs existing total pollution loads:

- The Ningbo project will reduce BOD by 8,000 t/year vs COD inputs to the East China Sea of close to 7 M t/year, or 0.1%
- The Ningbo project will reduce N by 2,000 t/year vs inputs to the East China Sea of close to 57,000 t/year, or 4%
- The Ningbo project will reduce P by 1,000 t/year vs inputs to the East China Sea of close to 700,000 t/year, or 0.03%

- The Manila project will reduce BOD by 10,000 t/year vs BOD inputs to the South China Sea of close to 2.8 M t/year, or 0.4%

Annex 2. Deliverables per Category

Wastewater and sanitation management and treatment

The most significant achievement by the World Bank under the IF was the delivery of projects that address wastewater and sanitation management in order to reduce land-based marine pollution:

In **Ningbo**, the IF is financing tertiary wastewater treatment using created and enhanced wetlands, an innovation in China with high potential for replication.

For the **Shandong** project, the IF supports urban septic tank management in the city of Yantai, to optimize on-site domestic urban wastewater treatment, using mostly existing infrastructure that was underutilized.

In the **Manila** Third Sewerage project, the IF sponsors urban septic tank management, as well as partnership building among water and wastewater agencies, in order to foster closer coordination among agencies in pollution control.

In the **Liaoning** Medium Cities project, the IF funds capacity building in utility management and partnership arrangements, to address the gaps and overlaps in responsibility among agencies responsible for wastewater management, and ultimately to reduce pollution discharges.

In **Vietnam**, the IF funds a municipal wastewater Chemically-Enhanced Primary Treatment (CEPT) plant, an innovation with considerable potential gains in treatment efficiency and potential savings in operating costs.

In **Shanghai**, the IF sponsors agricultural, rural and non-point pollution reduction measures to reduce fertilizer and pesticide overuse, to rehabilitate wetlands, and to reduce livestock waste runoff, in order to reduce pollution to the marine environment.

In the **Huai River** project, the IF will reduce marine pollution through management of existing infrastructure (obsolete sluice gates) and non-point sources.

Innovative financing mechanisms

Under the Second **Shandong** project, the World Bank / GEF address underutilized municipal septic tanks and inadequate financial management of the wastewater sector by formalizing the septic tank management system and incorporating cost recovery arrangements into it.

Under the **Manila** Third Sewerage Project the World Bank / GEF address septic tank and wastewater management through improved tariffs and pricing structure.

Under the **Liaoning** Medium Cities project, the World Bank/GEF aim to improve the management of the wastewater sector by clarifying the roles of the numerous agencies

involved in wastewater management, including their financial responsibilities.

Water-borne pollution from solid waste

The IF was set up to focus on wastewater, not solid waste; however the **Liaoning** project addresses landfill leachate runoff to the Bohai Sea as part of its activities. It will install leachate treatment systems as part of the landfill development, and shut in existing unsanitary dumpsites.

Pollution control in rural and peri-urban areas

Cities represent the main pollution hotspots in East Asia, however studies show that peri-urban and rural areas, including agricultural zones, are the next priority in terms of pollution control.

The **Ningbo** project establishes an extensive natural wetland protected area, and sets up a constructed wetland wastewater treatment area in the coastal zone of Cixi, a suburb of Ningbo. Land for the project is provided by the city of Cixi, and serves to control pollution entering the Hangzhou Bay and East China Sea.

The **Shanghai** project aims to address pollution in Shanghai's rural and peri-urban areas, in the agricultural and rural sectors. Previous World Bank-funded projects in Shanghai focused on urban environmental improvements, and the current operation focuses on livestock waste, and agricultural chemical inputs, as prioritized by recent studies.

Coastal ecosystem management

All projects under the IF contribute to coastal zone improvement through pollution reduction; however the **Ningbo** project directly contributes to coastal ecosystem management through the natural wetland (marsh) protection zone and the constructed wetland wastewater treatment area. Importantly, the project aims to protect a coastal island that is a key habitat for marine life, and is one of the few un-impacted coastal sites in the Ningbo area.

Institutional reform

A number of projects in the IF have institutional reform as an objective:

In **Shandong**, the project implements policy, institutional and technological reforms to address septic tank servicing.

In **Manila**, the project seeks to build a partnership between various government and private sector entities to resolve the gaps and overlaps in their mandates. The project provides a coordinated approach to defining pollution priorities, establishing

investment plans to address those priorities, sourcing suitable financing, and monitoring and evaluating project results.

In **Liaoning** the project targets institutional development activities that address the key regulatory, management, and planning issues that impact the sustainability of physical investments in pollution control. The project improves utility regulation and management, and contributes to planning and investment in pollution control infrastructure.

Capacity Building / Management reforms

All projects under the IF contribute to capacity building:

In **Ningbo**, the project introduces an innovative management design for a nature center in which a consortium of NGOs and universities manage the nature center while building the capacity of the local agency (Wetland Management agency under city government) and hand over management after one year.

In **Shandong** and **Manila**, the projects will set up, build the capacity of, and operationalize urban septic tank management units.

In **Liaoning**, the project provides technical assistance to a number of coastal cities in the management of public utilities, in master planning, waste management, and wastewater management.

In **Vietnam**, the project is design to build the technical and management capacity of service providers. Practical learning will be reinforced by workshops, regular meetings, and from exchange visits.

As part of its environmental management plan, the **Shanghai** project includes capacity building and training programs for agencies and stakeholders involved.

Policy and planning improvements

Improved ability to plan for pollution reduction is important to the overall objective of the IF.

The **Shandong** project aims to implement a new septic tank policy, thereby improving municipal wastewater management.

In **Manila**, through its partnership building component, the project establishes investment plans to achieve greater efficiency and environmental benefit by creating a coordinated approach to defining pollution priorities.

In **Liaoning**, in order to improve planning and implementation of pollution control and solid waste management activities, the project demonstrates utility benchmarking programs, new approaches to solid waste management and industrial pollution control.

The **Shanghai** project aims to improve land management policies in Shanghai by demonstrating environmentally friendly agriculture, and improve municipal response to agricultural threats by setting up early warning and response systems.

Since the initial approval (November 2005), the IF has therefore made considerable progress towards pursuing its overall aim, which is to reduce land-based marine pollution, by acting as a catalyst for co-financing of projects. GEF co-financed components are in the process of demonstrating innovative approaches, disseminating lessons learned, and promoting replication of best practice.

PROGRAM FRAMEWORK DOCUMENT

Scaling Up Partnership Investments for Sustainable Development of the Large Marine Ecosystems of East Asia and their Coasts

Annex B. Results Framework

Table 1: Results Framework

Program Objective	Key Indicators of Success
<p>Program Objective: To promote sustainable development of large marine and coastal ecosystems of East Asia and Pacific and improve livelihoods of local populations by reducing pollution and promoting sustainable marine fisheries, ICM and ecosystem based management; and to enhance the delivery of on-the-ground impacts and supporting capacity-building through targeted knowledge management activities and through portfolio learning and targeted research</p>	<p>Environmental Indicator: (i) reduction of nutrients and pollution to East Asia seas; (ii) increase in seascapes protected under management mechanisms; (iii) reductions in fishing effort and more sustainable harvesting of targeted fish stocks</p> <p>Economic Indicator: Increase in net economic benefits from fisheries and newly-created alternative livelihoods for project countries and targeted communities by end of project.</p> <p>Social Indicator: Increase in the average wealth status for households in targeted communities with attention to an equitable distribution of benefits.</p>
Expected Outcomes¹	Core Outputs
<p>Pollution Reduction</p> <ol style="list-style-type: none"> 1. nutrients and pollution to East Asia seas reduced (N, P, BOD [kg/yr]; pollutant [kg/yr]) 2. informed decision making and improved public awareness of non-point pollution issues 	<ol style="list-style-type: none"> 1. completed and fully demonstrated , innovative pollution control infrastructure/facilities 2. institutionalized pollution management practices 3. upgraded monitoring system for non-point pollution 4. reliable and disclosed monitoring data
<p>Sustainable Marine and Coastal Resources Management</p> <ol style="list-style-type: none"> 1. increase in sustainably managed seascapes that integrate biodiversity conservation 	<ol style="list-style-type: none"> 1. increase in certified production seascapes and marine protected areas

<p>(area protected under management mechanisms such as ICM, marine spatial planning, MPA [ha to be determined during preparation])</p> <ol style="list-style-type: none"> 2. national and local development plans that integrate biodiversity conservation, climate resilience, ICM and ecosystem based management (number of national, local, and/or sector policies incorporating management mechanisms) 3. financial sustainability of protected area enhanced (central/local government budget allocated to protected area management) 4. recovered (or recovering) fish stocks in target locations 5. alternative livelihoods introduced (number of people provided alternative livelihoods) 6. improved capacity for climate resilience 	<ol style="list-style-type: none"> 2. marine spatial planning based on ICM and ecosystem based management; community coastal management plans and District level Marine Conservation Areas with zoning for multiple use, including No-Take Reserves, legally established (# has tbd] 3. financing mechanisms for PA management in place 4. a) effective monitoring systems for fishery resources and marine biodiversity; b) improved use of fish gear/techniques (% vessels applying improved gear/techniques) 5. diversified and innovative alternative livelihood and eco-business models demonstrated, including some at commercial scale 6. uptake of sustainable marine and coastal resources management by coastal stakeholders as a cost-effective, no-regrets strategy for climate resilience
<p>Knowledge Management</p> <ol style="list-style-type: none"> 1. enhanced capacity and performance resulting from shared experience and lessons learned 2. improved cost-benefit analysis for development actions, and national wealth accounting 3. stakeholders' ownership of program/project activities increased 4. synergy of taking program approach reported (PFD annual status reports) 	<ol style="list-style-type: none"> 1. productions of State of the Coasts reports, workshops on good practices in pollution control, ICM and fisheries management; institutional twinning and targeted investigations of biophysical, economic and policy questions designed to fill knowledge gaps, introduce innovation and enhance performance 2. developed methods and quantified value and market potential of coral reef and mangrove ecosystem 3. public awareness campaigns and community-based pilots demonstrating improved management and sustainable, alternative income generation

¹ Project level ecosystem and environmental results indicators will be established in each project and sufficient budget programmed to determine impact from the baseline situation consistent with GEF International Waters M & E guidance and GEF 5 Strategy.

Table 2: Monitoring and Evaluation Plan

Program Objective	Key Indicators of Success	Targets 2018*
To promote sustainable development of large marine and coastal ecosystems of East Asia and Pacific and improve livelihoods of local populations by reducing pollution of and promoting sustainable marine fisheries, ICM and ecosystem based management; and to enhance the delivery of on-the-ground impacts and supporting capacity-building through targeted knowledge management activities and through portfolio learning and targeted research	Environmental Indicator: (i) nutrients and pollution input to East Asia seas; (ii) seascapes protected under management mechanisms; (iii) recovery of/reduced fishing pressure on overexploited fish stocks	(i) 10% decrease (ii) 20% of the region's coasts (iii) recovered to [reference year to be determined] level
	Economic Indicator: Net economic benefits from fisheries and newly-created alternative livelihoods for beneficiary communities by end of project/program	20% increase
	Social Indicator: Unemployment rate of target communities	[specific target % to be determined]% decrease
Expected Outcomes	Key Indicators of Success	Targets 2015*
Pollution Reduction	Completion of planned demonstrations of pollution control infrastructure/facilities	100%
	Number of national, local, and/or sector policies incorporating pollution management practices	National: 4 Local: 20 Sector: 5
	Improvement of monitoring system for non-point pollution (Yes/No)	Yes
	Reliable monitoring data disclosed (Yes/No)	Yes
Sustainable Marine and Coastal Resources Management	Number of national, local, and/or sector policies incorporating management mechanisms such as ICM, marine spatial planning, MPA	At least 30
	Central/local government budget allocated to protected area management (Yes/No)	Yes
	Proportion of vessels applying	50%

	improved gear/techniques	
	Number of stakeholder reached out by awareness campaign for sustainable marine and coastal resources management	At least 5000 people
	Number of households provided alternative livelihoods	At least 2000 households
	Frequency of knowledge management activities	At least 100 activities
	Number of PFD status reports	Annually

* The baseline for each target will be confirmed.

PROGRAM FRAMEWORK DOCUMENT

Scaling Up Partnership Investments for Sustainable Development of the Large Marine Ecosystems of East Asia and their Coasts

Annex C. Preliminary Project Summaries

Component 1: Pollution Reduction

Focusing on introducing integrated and innovative pollution management interventions to reduce land based pollution to East Asia Seas, this component will include the following two projects:

Manila Bay Integrated Water Quality Management Project (Philippines): USD 50 million IBRD Loan, USD 7.4 million GEF Grant, and USD 10 million cofinancing

The Manila Bay-Pasig River-Laguna Lake systems encompass the country's largest lake (Laguna de Bay 90,000ha) that drains into the formerly pristine Manila Bay (with a coastline of 190 km and encompassing some 1,700 sq. km.) through the National Capital Region's main river system, the Pasig River (27 km in length with 3 main tributaries and numerous smaller canals or *esteros*). The economic significance of Manila Bay is highlighted by the Bay area's contribution of around 53% of the country's Gross Domestic Product (GDP) and being the host to more than 30 million people. Its economic value is estimated at 8 billion pesos annually. Despite their economic significance and various regulations, the quality of Manila Bay and key tributaries remains below sustainable levels and poses a health risk for local populations. To improve the water quality of the Laguna de Bay, Pasig River and Manila Bay System, the Government of the Philippines has requested the GEF and the World Bank's assistance to prepare and implement a Manila Bay Integrated Water Quality Management Project. The proposed project will aim to address what has been a long-standing need for a long term comprehensive process to clean-up and improve the water quality of the Manila Bay, Pasig River and Laguna Lake system through comprehensive support for new and innovative integrated water quality management and institutional mechanisms, public-and-private pollution reduction initiatives, improved monitoring and enforcement and active community engagements. The project has five components: i) establishment of the Institutional Framework and Mechanisms for integrated and comprehensive management of the Manila Bay-Pasig River and Laguna Lake system, ii) co-financing of LGU implemented sub-projects and key priority investments to be implemented by national and regional agencies to improve water quality and abate sedimentation pollution. Investments will focus heavily on provision of improved wastewater and sanitation and solid waste services, particularly for the poor areas that surround the vast system of waterways and the identified pollution hotspots, iii) monitoring of key pollution and sedimentation parameters to establish credible water quality information for public disclosure and sound decision making, iv) strengthened regulatory systems and on-the-ground enforcement actions that are monitored by independent third-parties, and v) promotion of civil society, private sectors and community engagements. GEF would co-finance/support all components, whereas the IBRD loan would finance mainly the investment activities under component ii). The project would serve as a basis of the longer term engagement of the World Bank and GEF in activities addressing land based pollution issues. It will build on the lessons learned of Bank-supported projects in Laguna de Bay as well as the series of Manila Water and Sewerage Projects implemented by the two private

concessionaires, including the Manila Third Sewerage Project co-financed by a grant from the GEF. It is expected that vigorous monitoring and evaluation activities will be performed to monitor and evaluate ecosystem responses to proposed pollution reductions, and forecast recovery of water quality of ecosystem. In addition, good practices and lessons learned from the project supported management program in the Manila Bay-Pasig River and Laguna Lake system will be identified, assessed, packaged and promoted for scaling up efforts across the entire 7 watershed areas of Manila Bay and other river basins in the Philippines, as well as other integrated river basin and coastal area management projects across the region.

Major quantifiable indicators: 1. Reductions in wastewater and sources of pollution and sedimentation being achieved by participating LGUs and concerned Government Departments with jurisdictions impacting on Manila Bay and its tributaries; 2. Reduction in biochemical oxygen demand and other pollutants (N, P, etc.) being discharged into Manila Bay and tributaries. 3. Reduction of heavy metal discharges among registered jewelry manufacturers and other small to medium firms operating in project-covered areas; by 1. At least 50% of the 200 LGUs (approx.) with jurisdictions impacting on Manila Bay and its inland waterways have implemented pollution abatement system such as septage management and wastewater treatment facilities to treat domestic wastewater and sludge; 2. At least 30% of small and medium firms in project-covered areas have improved wastewater management system

Guandong Agricultural Pollution Control Project (China): USD100 million IBRD Loan, USD 5.1 million GEF Grant and USD100 million cofinancing

The project is proposed to promote sustainable agricultural and rural development in Guangdong Province with an objective of reducing rural and agricultural pollution by promoting source reduction, commercial utilization of agricultural wastes, and sound management and treatment of rural wastes and wastewater. The proposed project will undertake the following activities: (a) agricultural pollution control by source reduction and ecological treatment of irrigation run-off; (b) collection and treatment of rural and agricultural wastes; and (c) commercial utilization of agricultural biomass wastes. Implementation of this proposed project will deliver many benefits, such as, reduced non-point pollution to the South China Sea; improved safe water supply to Hongkong and Macau; cleaner living environment and conditions in rural areas; and reduced greenhouse gas emission through sound agricultural waste management and biomass fuel pellet production. A robust non-point pollution monitoring network will be enhanced with the support of this project so that direct environmental impacts of the project could be closely monitored. In addition, the project's impact on water quality improvement in receiving water body will be monitored and analyzed. Cost-benefit of the proposed interventions, including the benefits derived with respect to pollution reduction, energy conservation and climate change mitigation measures, will also be analyzed so that successful experience could be identified, packaged and shared among pollution hotspots areas in the region.

Major quantifiable indicators: a) sound soil nutrient management practices and agrochemical uses practiced on about 5,000 ha agricultural lands with reduced agrochemical uses and nutrient runoff monitored and evaluated; b) agricultural runoff from 5,000 ha agricultural lands treated and actual nutrient removal monitored and evaluated; c) rural wastewater from 50 villages collected, treated and actual nutrient removal monitored and evaluated; d) 20 large scale

agricultural waste biogas facilities constructed with actual nutrient removal monitored and evaluated; e) conservation agriculture piloted on about 1,000 mu crop lands with reduced nutrient runoff monitored and evaluated

Component 2: Sustainable Marine and Coastal Resources Management

This component will include the following four projects with a focus to promote sustainable marine and coastal resources management. Multiple benefits, such as improved and resilient livelihoods of coastal communities, sustainable fishery and coral reef management, and effective conservation of marine biodiversity are expected to be achieved through project level interventions.

Central Philippines Rural Development Project (Philippines): USD 200 million IBRD Loan, USD 7 million GEF Grant, and USD 30 million cofinancing

The Central Philippines Rural Development Project will aim to assist vulnerable Central Philippine communities and their local government units in enhancing their institutional and planning capacities, as well as the resilience and sustainability of their physical and economic infrastructure and natural resource and biodiversity base. As such, the Project is expected to assist the communities to cope with, and adapt to, the impacts of climate change. It will be funded through a US\$200 million IBRD loan¹ and a US\$ 7 million GEF grant (US\$ 5 million from the Biodiversity (BD) window and US\$ 2 million from the International Waters (IW) window.) IBRD-supported baseline activities will include (i) Strengthening institutional mechanisms to support integrated local development planning for crop, livestock, fishery and natural resource management, and to improve community-level regulatory enforcement and compliance; (ii) Co-financing (between national and local governments) of investments in rural infrastructure, enhancing agri-, aqua- and maricultural value-added, economic diversification through alternative sustainable livelihoods, and water and waste water management to support sustainable and climate-resilient development; and (iii) Project management, coordination and monitoring and evaluation.

The GEF will co-finance on an incremental cost basis activities related to integrated local development planning, local investments in infrastructure and alternative livelihoods in communities with globally significant biodiversity areas, seascapes and landscapes and priority degraded coastal areas, in a manner consistent with the GEF 5 BD and IW Strategies. The candidate sites for GEF TF support would straddle in areas along the Central Philippines with known species and ecosystems of global significance. Some 48 initial candidates being considered, which include among others (i) the Tayabas Coast in Region 4-A; (ii) the Verde Island Passage and Palawan Island in Regions 4-A and 4-B; (iii) Balabac-Bataraza in Palawan in Region 4-B; (iv) the Donsol-Ticao Pass in Sorsogon (Region 5); (v) San Miguel Bay in Region 5; (vi) Guimaras Strait and Mt. Kanlaon Protected Area in Region 6; (vii) Malapascua and Gato islands in Region 7; (viii) Danajon Bank in Region 7; (ix) Eastern Samar sea and Samar Island Protected Area in Region 8; (x) Sogod Bay in Region 8. These areas of global environmental

¹ US\$ 200 million would be the IBRD co-financing that the World Bank would bring to the project. Approximately US\$ 30 million is expected as Government co-financing for the loan. Therefore the total co-financing for the GEF TF grant would be about US\$ 230 million.

importance and their natural resource base are threatened by unsustainable farming and fishing practices, including use of slash-and-burn agriculture, illegal fishing methods, over-fishing and over-exploitation of resources. Climate change is expected to contribute to these threats and negative impacts as coastal and upland communities try to cope with climate change.

The GEF -supported activities will be fully integrated and mainstreamed into the baseline project, using the same project management processes and procedures. Specifically under Component I, biodiversity concerns would be mainstreamed into local development plans (LDPs) through measures that recognize, protect or restore the components of biodiversity that contribute to ecosystem functioning and local economic development, and reduce the negative biodiversity impacts of productive sectors, notably agriculture and fisheries and tourism, and infrastructure investments. In coastal and upland areas, LDPs would be designed or revised or updated to incorporate measures to control erosion due to unsustainable upland agriculture practices, and to restore / rebuild marine fisheries and reduce pollution of coasts in line with the priorities of the communities, as well as ongoing related efforts by the Partnerships in Environmental Management for the Seas of East Asia and the Coral Triangle Initiative, among others. Such plans would be financed and implemented under Component II. An example for specific activities include agroforestry, promotion of sloping agricultural land technology, establishment and enhanced management of marine / fish sanctuaries, including no-take zones and buffer zones as relevant based on maps indicating land use, vegetation, coral status, sea grass status, mangrove status and areas critical to sea turtles, marine mammals and other endangered marine organisms. Another example would be assistance for mangrove plantation boundary delineation and demarcation as well as establishment and maintenance. Furthermore, wastewater treatment would be supported in coastal areas threatened by eutrophication, in particular in growing eco-tourism destinations. The GEF would also support production of biodiversity-friendly goods and services in an effort to sustainably enhance local communities' livelihoods. Finally, Component 1 would also improve the management effectiveness of existing marine protected areas by enhancing the enforcement capacities of communities and local governments to reduce over-fishing and secure coastal/marine habitats.

The Project would be implemented by the Department of Agriculture, in collaboration with the Departments of Environment and Natural Resources, Agrarian Reform and local government units over a period of 5 years.

Major quantifiable indicators: 1. Climate-resilient rural infrastructure constructed and used; 2. Implemented climate-resilient agriculture and fishery; 3. Alternative livelihoods introduced and implemented; by 1. Climate-resilient investment priorities and programs established by all concerned LGUs; 2. Climate resilient designs for rural infrastructure, agriculture, NRM and alternative livelihoods developed.

Coastal Resources for Sustainable Development Project (Vietnam): USD 100 million IDA Credit, USD 6.5 million GEF Grant and USD 10 million cofinancing

Marine and coastal resources are among Vietnam's key renewable natural assets. The objective of the proposed project is to improve the management of coastal resources in support of sustainable fisheries by mainstreaming marine spatial planning (MSP) strategies, biodiversity

conservation and sustainable and equitable use into marine and coastal management in selected coastal provinces of Vietnam. The project will contribute to the broader goal of supporting coastal livelihoods, as well as the viability and competitiveness of the fishery sector. It will be done through, among others: institutional capacity strengthening for sustainable resources management through ICM in support of fisheries, promotion of sustainable aquaculture practices, and promotion of sustainable near-shore capture fisheries. Introducing the ICM will reduce not only unprotected ecosystems in terms of area and biomass, but also unprotected threatened species in terms of number (Outputs 1.1 and 1.2) with an expectation of improving the management of existing and new protected areas (Outcome 1.1). Innovative approaches for protecting fish stocks and their habitats will be tested. Measurable conservation and sustainable use targets, related to Output 2.1, will be integrated into economic development and sectoral planning frameworks at national, provincial and local levels and monitored under the project closely. Using reporting systems such as the PEMSEA's State of Coasts, the project will review project progress, summarize best practices and lessons learned and analyze benefits derived from project interventions. Such knowledge and best practices will be disseminated for further adoption and scaling up nationwide.

Major quantifiable indicators: 3.1 Co-management, fisheries sustainability and key species and habitat protection becomes mainstreamed into the design, planning and management of coastal and marine protected areas; 3.2 Fishing practices shift towards more selective, less destructive and wasteful harvesting methods; 3.3 Alternative livelihoods are developed for vulnerable fishing communities and sustainably linked to co-management plans; 3.4 Fishing activities are more sustainable and value-added through improved environmental and hygienic conditions of landing sites and fishing ports; 3.5 Knowledge management mechanisms facilitate the sharing of information and experiences among GEF project agencies and partners, leading to improved information transfers and effective scaling up of positive examples; by 3.1.a Co-management guidelines developed, relevant staff training, and capacity of local fishing community strengthened; Over 100 government employees and over 1,000 fishermen trained; 3.1.b Number of co-management plans piloted; proportion of fisheries within priority provinces under some form of co-management regime; 3.1.c Marine and coastal protected area management plans (minimum 3) and species protection plans (minimum 1) apply Co-management framework; Preliminary Areas of Interest (AOIs) include Hòn Mê (Thanh Hoa Province), Cua Lo (Nghe An Province), Ca Mau Nature Reserve (Ca Mau Province), Cu Mong Lagoon and O Long Lagoon (Phu Yen Province), and Quy Nhon (Binh Dinh); 3.1.b&c Amount of coastal areas restored/protected and under improved management; 3.1.d At least 40,000 ha of marine area designated for the protection of one or more threatened species; 3.2.a New regulations on improved fishing gear (less destructive) with methods enforced and number of violations reduced; Number of and funding for enforcement forces increased; 3.2.b Number of fishermen/fishing vessels switching gear and fishing methods to for sustainable forms. Number of fishermen with environmentally-friendly fishing gear increased; 3.2.c Fisheries improvement projects (FIPs) launched in and around at least two priority sites and linked to marketing of more responsibly harvested (i.e. Best Practice) seafood. At least 100,000 ha under some form of fisheries eco-certification and/or Fisheries Improvement Plan process; 3.3.a Year-to-year changes in total effort from inshore fishing fleet; 3.3.b Increased income of fishing households who volunteer to exit nearshore fishing; 3.4.a Reduction of losses in quality and value of catch; 3.4.b Additional employment opportunities and other benefits to fishermen

resulting from improved fishing infrastructure; 3.5.Learning and information exchange through IW:LEARN activities: Establishment of project website following IW:LEARN guidelines, participation in GEF IW biennial conferences, and sharing of experiences; At least 2 Experience Notes produced.

Coral Reef Rehabilitation and Management (COREMAP) Phase III (Indonesia): USD 130 million IBRD Loan, USD 12 million GEF Grant, USD 18 million cofinancing

Coral Reefs in Indonesia - about 10% of the world's coral reefs - are the most diverse in the world and are considered the epicenter of marine biodiversity. Located in the heart of the Coral Triangle, the Indonesian reefs are at increased risk from climate change and escalating atmospheric CO₂ levels leading to warming and acidifying ocean waters, as well as from local stressors associated with increased population pressure, development pressure, destructive and over-fishing, pollution and invasive species. The GEF and World Bank funded COREMAP 1&2 projects have been battling these threats, through community-based co-management, education and awareness about the importance of reefs, community empowerment and economic incentives through seed funds for alternative livelihood generation. However, major challenges remain and the planned COREMAP Phase 3 Project will scale up efforts for transformational change in how coral reefs are administered and used by rural communities, as well as facilitate the extension of these interventions over larger areas across Indonesia. This will be done through mainstreaming good practice in community-based management of coral reefs in 1,000 villages in Eastern Indonesia by promoting effective local governance, demonstration of economic benefits, and knowledge dissemination and communication within the framework of ICM. These activities will enlarge the coverage of protected areas to conserve threatened coral reef ecosystem and improve the management of existing and new protected areas. The project outcomes will include: i) the implementation of MSP, ii) monitoring, control and surveillance (MCS) systems in place, iii) eco-business approach (technical and financial capacity, training and outreach, business incubation and marketing). The project's knowledge management activities will review the socio-economic benefits derived by coastal communities as a consequence of the program, and utilize the outputs for scaling up efforts elsewhere in the region.

Major quantifiable indicators: B) Ecosystem-based Management: 50 Marine Conservation Areas (KKL-PHKA, KKLD, etc.) effectively managed at the National and District levels in project covered areas; Collaboratively and effectively enforced no-take zones, covering 15% of coral reefs in all project covered areas; Coral reef related Integrated Coastal Management (ICM) introduced in 40 districts; Local communities and district Government agencies engage in collaborative management of Coral Reef Resources in target project sites; Climate Change Risk is effectively addressed through the project; by Preparation of CR management plans in new districts; Provincial and District level MCS support for MPAs (in phase 2 & new phase 3 sites); Valuation of coral reef and related ecosystem services; Feasibility studies for sustainable financing of MPAs; Implementation of threatened marine species program (turtles, sharks, etc.); Implement the national program for coral reef biodiversity conservation; District level integrated zoning, licensing and permitting for tourism, fisheries, conservation, transport related activities; Provision for identifying and controlling impacts from ridges-to-reefs including support to measure water quality as per District management plans; Coral reef community empowerment boards instructed in ICM approach; Legal agreements for co-management of SSF to regulate

capture fisheries in all 1,000 villages (Continued support in Phase 2 areas and additional Phase 3 sites); Plans to protect local fish spawning areas are prepared and implemented in relevant villages as part of CRM plans; Development and piloting of access-right based governance system; Small-scale vessel registration program to control fleet piloted in selected districts; Coral reef pro active restoration as needed; Piloting of Eco-certification in selected districts; Support to fish processing and marine products and market access to increase value of fish resources in co-management sites; Extension program in project sites and IEC; Community-based MSC with district level back-up to protect co-management efforts; CC Adaptation mainstreamed into District Development Plans; Vulnerability assessments of new project sites (CTI REG will do this in some sites); Investing in green infrastructure for climate change adaptation; Training to coastal communities on CCA adaptation; 5 sub-projects on ecosystem-based approach to CCA to increase resilience of biodiversity rich coral reef and associated ecosystems promote adaptation and protect natural infrastructures to increase resilience of coastal communities; Promote carbon sequestration in coastal areas (REDD+ & Blue Carbon for Carbon offsets).

C) Conservation based Economic Activities and Livelihoods Development: Average beneficiaries revenue increased by 20% in project target areas; Eco-business enterprises are developed in 40 districts (reaching 25,000 beneficiaries); Economic benefits from fisheries sector increased in selected project sites and serve as demonstration to local government and communities; by Revenue-generating activities developed and implemented in 600 villages; Livelihoods diversification strategy developed; PPP & PES schemes developed (blue carbon offsets in voluntary markets; biodiversity conservation agreements or premiums for protection of mangroves/reefs, etc.); Community-level support for poverty-reduction in participating villages (health posts, schools, information centers, etc.); Ecotourism development (joint-ventures PS with communities) to develop homestays, guided tours, artisan craft, food supply to hotels, etc.; Technical and financial capacity, training and outreach, business incubation in selected districts.; Assist in mobilizing financing for eco-businesses through grants, loans, and private investments; Marine resources production (mariculture) sub-projects implemented in 30 districts; Support to improve quality of selected landing sites (small infrastructure); Certification scheme for sustainable fisheries; Assistance to improve access to higher markets for fish products.

Component 3: Knowledge Management

This component will have the following two projects:

Targeted Learning and Innovation: Capturing Coral Reef Ecosystem Services in East Asia (Regional): USD 4.5 GEF Grant, and USD 5 million co-financing.

This regional project will be a source of applied science and technology information for the design of interventions to improve the effectiveness of managing coral reef and related ecosystems for resilience to climate change and variability and for increased benefits to coastal communities and tropical coastal ecosystem-based economies in the region. The project will focus on: (i) quantifying and valuing coral reef and mangrove ecosystem services related to CO2 mitigation and adaptation, (ii) piloting application of this information in on-the-ground management interventions and marketing to generate sustainable revenue streams and wealth for communities investing in conservation and sustainable use of these resources, (iii) creating a

knowledge platform to inform projects and stakeholders throughout the region on further refining, replication and scaling up of these models. The wealth of good practice would result tangible and continuous benefits at the local, regional and global level.

Major quantifiable indicators: 1. Robust science embedded within pilot projects creates four complementary outcomes that increase economic and ecological resilience of coastal communities to climate variability and change: (a) Wealth creation through new ecobusiness models that capture the benefits of reef ecosystem services; (b) External investments in reef management projects that sustain ecosystem services is catalyzed; (c) Political will for improved management increased due to public and government awareness of true value of ecosystem services; (d) Flows of coral reef ecosystem services improved through science-based approaches to marine spatial planning, including marine protected areas; by 1. Technical support for development of Eco-business models for inter alia: (i) coral reef-based aquaculture for the ornamentals trade, live-reef fish trade, and restoration of degraded reefs ; (ii) eco and cultural tourism; (iii) the sale of carbon emissions reduction credits and marine conservation premiums from well managed coral reef ecosystems, to the voluntary markets; 2. Inter-disciplinary teams of natural and social scientists, local practitioners and community entrepreneurs provide needed TA on the application of economic and biophysical data, Remote Sensing tools, ecological resilience and connectivity to eco-business models, ecosystem resilience and MSP.

Knowledge Management for Program Implementation (Regional): USD 1 million GEF Grant

The planned project will focus on be a regional activity led by PEMSEA, which would build on experience and knowledge gathered within the previous GEF and World Bank initiatives. The project will focus on: (i) gathering and analyzing the process, outputs, and outcomes of the above noted six projects; preparing lessons learned and best practice documents; and creating guidelines to facilitate replication and scaling up of similar pollution reduction/sustainable marine and coastal resource management activities within the countries and across the East Asian Region; (ii) identifying and bringing together experts, managers and other stakeholders in each of these sectors into a network of practice, serving as a core advocacy and mentoring group accessible by national and local governments implementing SDS-SEA; and (iii) facilitation of interaction and tri-level (public-private-community) or cross-sector partnerships aimed at translating political commitments on the brown and blue agenda targets into action. In doing so, it is expected that the outputs from the investment projects will be effectively applied to build awareness and confidence among policymakers and managers at the national and local levels of government. In the end, this will result in the necessary political and social climate for increased investment by the public and private sectors in on-the-ground facilities and services for sustainable development of marine and coastal areas of the region.

Major quantifiable indicators: Improved political and social climate for increased partnership investments to protect and enhance coastal and marine ecosystem services made possible by: (a) informed national policymakers and Local Chief Executives serving as advocates for integrated management of coastal and marine areas and scaling up of multi-sectoral partnerships and investments; (b) timebound priority targets and projects in the brown and blue agenda mainstreamed into national and local government medium -term development and investment plans; by (a) priority coastal areas and watersheds identified and selected as national

commitment for scaling up ICM programs to achieve 20 percent of the coastline by 2015; (b) regional (e.g., EAS Congress 2015; Ministers Forum 2015) and other international and national forums (e.g., GEF IW Biennial Conference; Xiamen World Ocean Week; PEMSEA Network of Local Governments; National ICM Forums) to build awareness and strengthen intergovernmental and cross-sector partnerships, involving national policymakers, local chief executives, technical advisors/scientists, investors, corporate sector and community stakeholders; (c) site visits/seminars for national policymakers/local chief executives to the GEF/WB project sites in the region, as well as to other relevant locations/demonstration projects; (d) workshops/consultations on collaborative planning and mainstreaming investment projects on the brown and blue agenda into national and local government development and investment plans.