



Global Environment Facility

1818 H Street, NW
Washington, DC 20433 USA
Tel: 202.473-0508
Fax: 202.522.3240/3245
Internet: www.theGEF.org

April 22, 2009

Dear Council Member,

The World Bank as the Implementing Agency for the project entitled Vietnam: Coastal Cities Environment and Sanitation Project, under WB/GEF Partnership Investment Fund for Pollution Reduction in the LME of East Asia, has submitted the attached proposed project document for CEO endorsement prior to final Agency approval of the project document in accordance with the World Bank procedures.

The Secretariat has reviewed the project document. It is consistent with the project concept approved by the Council in July 2008, and the proposed project remains consistent with the Instrument and GEF policies and procedures. The attached explanation prepared by the World Bank satisfactorily details how Council's comments and those of the STAP have been addressed.

We have today posted the proposed project document on the GEF website at www.TheGEF.org for your information. We would welcome any comments you may wish to provide by May 22, 2009 before I endorse the project. You may send your comments to gcoordination@TheGEF.org.

If you do not have access to the Web, you may request the local field office of UNDP or the World Bank to download the document for you. Alternatively, you may request a copy of the document from the Secretariat. If you make such a request, please confirm for us your current mailing address.

Sincerely,

A handwritten signature in black ink, appearing to read "Monique Barbut", is written over a printed name and title.

Monique Barbut
Chief Executive Officer and Chairperson

Attachment: Project Document

cc: Alternates, GEF Agencies, STAP, Trustee



REQUEST FOR CEO ENDORSEMENT/APPROVAL
PROJECT TYPE: Full-sized Project
THE GEF TRUST FUND

Submission Date: April 3, 2009
Re-submission Date: April 16, 2009

PART I: PROJECT INFORMATION

GEFSEC PROJECT ID: 2758

GEF AGENCY PROJECT ID: P090374

COUNTRY(IES): Vietnam

PROJECT TITLE: VN - GEF Coastal Cities Project

GEF AGENCY(IES): World Bank, (select), (select)

OTHER EXECUTING PARTNER(S):

GEF FOCAL AREA(S): International Waters, (select), (select),

GEF-4 STRATEGIC PROGRAM(S): Approved under GEF 3 - OP 10: Contaminant-based Operational Program. Also consistent with IW-SP2: reducing nutrient over-enrichment and oxygen depletion from land-based pollution of coastal waters in LMEs consistent with the GPA

NAME OF PARENT PROGRAM/UMBRELLA PROJECT: WORLD BANK – GEF INVESTMENT FUND FOR POLLUTION REDUCTION IN THE LARGE MARINE ECOSYSTEMS OF EAST ASIA/ IDA FINANCED COASTAL CITIES ENVIRONMENTAL SANITATION PROJECT

Expected Calendar	
Milestones	Dates
Work Program (for FSP)	July 2008
GEF Agency Approval	June 23, 2009
Implementation Start	July 31, 2009
Mid-term Review (if planned)	January 2011
Implementation Completion	December 2014

A. PROJECT FRAMEWORK (Expand table as necessary)

Project Objective:								
The Project Development Objective (PDO) is to demonstrate an innovative waste water treatment technology to reduce the discharge of pollutants from the city of Quy Nhon in a financially and environmentally sustainable manner. The project will contribute to improving the health and habitat conditions of the marine and coastal ecosystems of Vietnam.								
Project Components	Indicate whether Investment, TA, or STA**	Expected Outcomes	Expected Outputs	GEF Financing*		Co-financing*		Total (\$)
				(\$)	%	(\$)	%	
1. Construction of a chemically enhanced primary treatment plant (CEPT in Nhon Binh area)	Investment	CEPT plant constructed and operating successfully	- Volume of wastewater treated - Tons of BOD/SS removed - Tons of nutrients (N&P) removed - Number of HHs connected to the sewer system	4,500,000	68	2,105,000	32	6,605,000
2. Disseminations and replication promotion including IWLEARN activities	TA	- New technology accepted and operating - Structured learning and information sharing among stakeholders facilitated.	- Participation in biennial International Water Conference and workshops; - Number of presentations/learning events; - Number of papers published in the website and/or disseminated - Number of local	350,000	78	100,000 ¹	22	450,000

¹ To be provided through the IDA financed Coastal Cities Environmental Sanitation Project (CCESP) which is blended with the GEF operation please see Table F]

			city to city learning events to promote replication					
3. Monitoring and evaluation, project management	TA	-Track the performance of the wastewater treatment system and confirm the reduction in pollution load entering the aquatic environment	- Baseline information established - Monitoring reports on outcome indicators	150,000	48	165,125 ²	52	315,125
4. Under the IDA CCESP, construction of 2 wastewater treatment plants (in Phu Hoa and Bau Lac areas) and sewerage systems. In addition, the project includes project management expenditures for the IDA and GEF projects (\$ 603,000) and other costs	Investment/ project management	Wastewater collection system constructed and operating successfully	- Included in the IDA CCESP	0	0	19,314,763	100	19,314,763
Total Project Costs				5,000,000		21,684,888		26,684,888

* List the \$ by project components. The percentage is the share of GEF and Co-financing respectively to the total amount for the component.

** TA = Technical Assistance; STA = Scientific & technical analysis.

B. FINANCING PLAN SUMMARY FOR THE PROJECT (\$)

	<i>Project Preparation*</i>	<i>Project</i>	<i>Agency Fee**</i>	<i>Total at CEO Endorsement</i>	<i>For the record: Total at PIF</i>
GEF	350,000	5,000,000		5,350,000	5,350,000
Co-financing		21,684,888		21,684,888	21,700,904
Total	350,000	26,684,888		27,034,888	27,050,904

* Please include the previously approved PDFs and PPG, if any. Indicate the amount already approved as footnote here and if the GEF funding is from GEF-3. Provide the status of implementation and use of fund for the project preparation grant in Annex D.

** Paid as part of the Investment Fund, Tranche 1

C. SOURCES OF CONFIRMED CO-FINANCING, including co-financing for project preparation for both the pdfs and ppg.(expand the table line items as necessary)

<i>Name of co-financier (source)</i>	<i>Classification</i>	<i>Type</i>	<i>Amount (\$)</i>	<i>%*</i>
IDA	Impl Agency	Credit	19,012,938	88
Governemnt of Vietnam	Government	Own sources	2,671,950	12
	(select)	(select)		
Total Co-financing			21,684,888	100%

* Percentage of each co-financier's contribution at CEO endorsement to total co-financing.

² To be provided through the IDA financed Coastal Cities Environmental Sanitation Project (CCESP) which is blended with the GEF operation please see Table E.

D. GEF RESOURCES REQUESTED BY FOCAL AREA(S), AGENCY(IES) OR COUNTRY(IES)

<i>GEF Agency</i>	<i>Focal Area</i>	<i>Country Name/ Global</i>	<i>(in \$)</i>			
			<i>Project Preparation</i>	<i>Project</i>	<i>Agency Fee</i>	<i>Total</i>
(select)	(select)					
(select)	(select)					
(select)	(select)					
(select)	(select)					
(select)	(select)					
(select)	(select)					
Total GEF Resources						

* No need to provide information for this table if it is a single focal area, single country and single GEF Agency project.

E. PROJECT MANAGEMENT BUDGET/COST

<i>Cost Items</i>	<i>Total Estimated person weeks</i>	<i>GEF (\$)</i>	<i>Other sources (\$)</i>	<i>Project total (\$)</i>
<i>Local consultants*</i>	180	90,000	90,000	180,000
<i>International consultants*</i>	30	45,000	45,000	90,000
<i>Office facilities, equipment, vehicles and communications**</i>	0	0	15,125	15,125
<i>Travel**</i>	0	15,000	15,000	30,000
Total	210	150,000	165,125***	315,125

* Provide detailed information regarding the consultants in Annex C.

** These are costs related to travel to the project site for the entire duration of the project (5 years).

*** Co-financing will be provided through the project management expenditures financed through the IDA Coastal Cities Environmental Sanitation Project (CCESP) which is blended with the GEF operation. Part of the total expenditures (US\$ 603,000) for project management is expected to be incurred for the GEF project. For the GEF project, a project management cost of 2.5% of the investment cost of \$6,605,000 is assumed.

F. CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:

<i>Component</i>	<i>Estimated person weeks</i>	<i>GEF(\$)</i>	<i>Other sources (\$)</i>	<i>Project total (\$)</i>
<i>Local consultants*</i>	250	200,000	50,000	250,000
<i>International consultants*</i>	45	105,000	30,000	135,000
<i>Travel Costs**</i>		45,000	20,000	65,000
Total	295	350,000	100,000***	450,000****

* Provide detailed information regarding the consultants in Annex C

** These are costs related to travel to the project site for the entire duration of the project (5 years)

*** Apart from the project management expenditures of \$ 603,000 that are included in the project, the IDA CCEESP has other sources of TA that will be used to support this GEF project and other activities in the Quy Nhon area (construction of 2 other wastewater treatment plants and sewerage network). This additional TA includes: capacity building (US\$ 446,000), TA for implementation and monitoring and evaluation (US\$ 90,000), training/public awareness (US\$ 20,000), and information, education, and communication (US\$ 45,000). Details are provided in page 39 of the Project Appraisal Document of the IDA project.

**** In Table A, only the GEF portion (\$ 350,000) is shown for Technical Assistance. The other sources of financing shown in Table F (\$ 100,000) are not included in Table A as it is covered through the IDA project.

G. DESCRIBE THE BUDGETED M&E PLAN:

The GEF project is an integral part of, and partially blended with, the IDA financed Coastal Cities Environmental Sanitation Project (CCESP) which together will achieve the development objective. The IDA financed project will finance the construction of drains and sewers and some wastewater treatment in core urban areas in the city of Quy Nhon. The GEF project will finance the construction of a Chemically Enhanced Primary Treatment (CEPT).

The GEF project M&E system will complement and feed the M&E and the MIS mechanisms already established under the IDA project. These mechanisms will focus on collecting and monitoring specific information related to inputs, outputs and outcomes of the CEPT plant. The M&E will cover the cost of the baseline data collection, of the periodic measurements, and the feeding of this data into the IDA project MIS. The types of costs covered are: (i) cost of consultants, (ii) equipment and (iii) operational cost of the CEPT M&E. Most of the functions to implement this component are already in place within the PMU, which has been functioning for over a year. The PMU is fully aware of the need to monitor project progress and inform the Bank and these requirements are covered under the institutional arrangements of both the IDA and the GEF projects. During supervision, the Bank will ensure that the monitoring and evaluation are carried out as planned and additional details are provided in the Project Appraisal Document (Section B, Annexes 3 and 4).

Sampling, data collection, and data elaboration will be outsourced in one TA contract. The PMU will coordinate with the consulting firm the site specific indicators needed for monitoring the performance of the CEPT plant.

The project will use the current Coastal Cities Environmental Sanitation Project PMU, which is already successfully implementing that project. Likewise construction supervision, auditing, independent safeguards monitoring and all other aspects of project management for the GEF project will be provided by consultants hired under CCESP by the PMU.

PART II: PROJECT JUSTIFICATION

A. DESCRIBE THE PROJECT RATIONALE AND THE EXPECTED MEASURABLE GLOBAL ENVIRONMENTAL BENEFITS:

The South China Sea large marine ecosystems (LME) lie within the global centre of biodiversity for marine species, with more than 2,500 species of marine fish and 500 species of reef-building corals. The region also

supports some of the world's most diverse mangrove forests and sea grass beds. However, East Asia's rapid economic growth has been accompanied by significant environmental degradation. Land-based pollution, due mainly to coastal development, is one of its most severe environmental problems and is degrading the region's seas, coasts, estuaries, and rivers. Around 270 million people live in the region, and this population is expected to double in the next three decades, which will cause significant ecological stress to coastal and marine areas. These changes, in turn, threaten the livelihood of fishermen and hoteliers, the latter of which contribute significantly to economic growth in Vietnam. Among the primary environmental threats by humans in the South China Sea are increased sediments, nutrient pollution, and sewage pollution. The threats arise from municipal and industrial wastewater discharged virtually untreated into the waterways, with little to no re-use of treated wastewater. Sewage pollution affects biodiversity and fisheries, and has health impacts on the population. Further, only one-third of the original mangrove forests remain, 80% of the coral reefs are threatened, sea grass beds have been reduced or degraded by 20-50%, and many fish nursery areas and breeding grounds are being degraded.

Investments in wastewater treatment and pollution control in urban centers in Vietnam, including coastal cities such as Nha Trang (270,000 inhabitants), Quy Nonh (230,000 inhabitants) and Dong Hoi (95,000 inhabitants), which are being assisted by an IDA investment, have lagged far behind its rapid economic development, which is currently estimated at 7% p.a. To maintain this higher than average growth, much of which is related to tourism, good environmental conditions are paramount. All the larger cities in the country are already undertaking sanitation investments, although none are yet operational. The CCESP cities represent the next tier of cities in Vietnam to tackle environmental sanitation issues, and have been selected based on their size and their specific needs – tourism features as a major economic activity in all three cities.

The IDA project is designed to: (i) improve the environmental sanitation in project cities and thereby enhance the quality of life of city residents. The cities, located on Vietnam's east coast represent pollution hotspots in the South China Sea; and (ii) improve the financial sustainability and capacity of the pollution reduction service delivery entities. At the national level the Government has demonstrated commitment to sector sustainability with its policy of cost recovering tariffs. The cities participating in the IDA project have demonstrated strong commitment and understanding with regard to the needs for an extensive capacity building of the service providers, PMU, and communities in order to guarantee long term sustainability. The borrower has committed to this through a capacity building component included in the IDA operation. On the critical area of tariff reform each city has agreed to phased increases so that operating costs and depreciation of short lived assets is fully funded from user fees by the end of the project. This is included as a project covenant.

The proposed GEF project is an integral part of the IDA financed operation. The additional GEF funds of US\$ 5 million would complement the IDA investment in enhancing the treatment capacity of the city of Quy Nhon, one of the project cities, and increase the efficiency in the removal of nutrients from wastewater through piloting a new technology, with a high demonstration and replication value in Vietnam and throughout the region. The technology consists of a Chemically Enhanced Primary Treatment (CEPT) plant with secondary treatment provided by trickling filters, with a capacity of 7,000 m³/d and serving 60,000 people. The plant will be connected to a sewerage system financed under the IDA Coastal Cities Environmental Sanitation Project (CCESP).

In addition to utilizing the infrastructure financed by IDA, the proposed project will also benefit from the capacity and financial improvements of the service delivery entities envisaged under the baseline operation.

CEPT is a high-efficiency option which is currently not used in Vietnam, and the planned dissemination activities which form part of the GEF project will help educate the public about (i) the importance of protecting the seas and coastal ecosystems and (ii) the value of low maintenance, simple to operate, efficient wastewater treatment systems, like CEPT. The project will also serve as a vehicle for promoting SDS-SEA objectives which would be incorporated into the Vietnam Country Partnership Strategy (CPS), included in the country dialogue, and integrated into the country's lending program. To contribute to and benefit from GEF's International Waters Learning Exchange and Resource Network (IW:LEARN), funding would be provided to officials from Quy Nhon to participate in the IW biennial conferences and projects would participate in IW:LEARN activities. A project website consistent with GEF IW:LEARN guidance would be established and operated, and the project will participate in GEF IW:LEARN and PEMSEA activities in order to share experiences with other countries in East

Asia and promote replication. Papers presented at conferences, summary of workshops and papers published nationally will all be available on the website and they will serve to foster improved understanding of the Project's intentions and allow the public to consider the use of CEPT WWTP for their own applications elsewhere. The website would also include other publications regarding CEPT projects elsewhere. The benefit to the South China Sea would be twofold: directly, in reducing pollution in Vietnam which would benefit the entire system, as waters from the South China Sea flow seasonally into the Sulu Sea and Java Sea and, indirectly, through dissemination and replication efforts.

B. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH NATIONAL PRIORITIES/PLANS:

Progressive local governments in Vietnam, including those supported by the CCESP, have declared pollution reduction a priority and adopted a sub-regional approach to tackling it. The GEF project would support and expand that approach in one project city (Quy Nhon) and have high replication potential not only for other coastal cities in Vietnam, but for all cities that discharge to rivers and thence into the seas off the country's coast.

The current project fits within the Bank / Vietnam Country Partnership Strategy (CPS), which states that the poor are disproportionately affected by pollution, notably water pollution and have substantially less access to clean water and sanitation. Over the last 10 years, service delivery of clean water and sanitation to the poorest groups has grown at a much lower rate compared to non-poor groups.

Furthermore, Vietnam's Socio-Economic Development Plan (SEDP), with which the WB's CPS is fully aligned, contains strong, encouraging references to sustainable development. For environment, it includes targets, for improving wastewater and solid waste treatment in industrial zones and craft villages. The project therefore builds on the government's commitment to sustainable development and will assist the government to achieve its wastewater treatment targets.

Lastly, the project, being under the *GEF/WB Investment Fund for Pollution Reduction in the Large Marine Ecosystems of East Asia* (the IF), managed in cooperation with PEMSEA, is part of the regional implementation plan of the United Nations Environment Program Global Programme of Action (UNEP-GPA) for the Protection of the Marine Environment from Land-based Activities, in which 108 countries have subscribed to protect and preserve the marine environment.

C. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH GEF STRATEGIES AND STRATEGIC PROGRAMS:

The proposed GEF-funded project was initiated under GEF's Contaminant-based Operational Program (OP) 10, which is to demonstrate and encourage replication of innovative and best practice options to overcome the barriers to reducing land-based contamination of international water bodies and is consistent with that program by removing a barrier to the adoption of new technology. Its innovative features include: (i) construction of a non traditional wastewater treatment plant (i.e. the CEPT) which will demonstrate the applicability of the technology within the country; and (ii) promote a broader understanding of key issues related to appropriate wastewater treatment, including upgrading paths that follow each city's economic development, beneficial reuse of biosolids from the process, cost effective nutrient removal, tolerance to saline intrusion (especially important in coastal cities), and limited land requirements. This improved understanding will be fostered by a workshop and study tour.

The project is also consistent with GEF's current Strategic Objective 2, "to catalyze transboundary actions addressing water concerns," specifically to reduce land-based coastal pollution, and with Strategic Program 2, "reducing nutrient over-enrichment and oxygen depletion from land-based pollution of coastal waters in LMEs consistent with the GPA." As noted above regarding nutrient pollution, Vietnam's aquatic environment, including coral reefs, is seriously threatened by human activities, particularly municipal wastewater discharge.

D. OUTLINE THE COORDINATION WITH OTHER RELATED INITIATIVES:

The GEF Vietnam Coastal Cities project is part of two related initiatives: first, the GEF/WB IF, approved by the GEF Council in November 2005. Pollution reduction components of World Bank projects that receive GEF co-financing under the Fund meet the following criteria: (i) demonstrate a new pollution control technology or technique; (ii) “try and test” a pilot where there is low public awareness, limited experience, and where the client is not willing to take on that cost; (iii) are innovative institutional mechanisms or technical solutions to combat land-based water pollution; and (iv) are easily replicable and/or scalable. The Fund focuses mainly on pollution hot-spots in the coastal areas of China, Philippines, Vietnam and Coral Triangle countries. The proposed GEF-funded activities under the Bank Project clearly meet the above criteria. The IF is one part of a related Strategic Partnership for Pollution Reduction, the other part (capacity building, replication and dissemination) to be implemented by PEMSEA. Second, the GEF project is complementary to the IDA-funded CCESP, which aims at improving environmental sanitation in project cities. In addition, the GEF project will work with partners in UNEP, GEF IW:LEARN, and the professional association in Vietnam to disseminate the project findings and share experiences.

E. DESCRIBE THE INCREMENTAL REASONING OF THE PROJECT:

In the worst case scenario, i.e. neither Bank nor GEF project, environmental degradation due to inadequate sanitation will continue. In the baseline scenario, i.e. Bank project but without GEF funding, the project will further develop/consolidate Vietnam’s urban environmental agenda technically (sewerage, wastewater treatment and solid waste management), financially (cost recovering charges), and institutionally (efficient and effective service providers), i.e. the project will establish good sector practice in Vietnam. However, lack of local experience with innovative solutions and client concerns about the use of “untried” technologies will limit the design of treatment facilities to conventional approaches. Maximum wastewater treatment potential would therefore not be achieved.

The CEPT technology, not currently used in Vietnam, is cost effective, highly efficient and technically viable under local conditions. However, the technology would not be adopted under the baseline project because it is new and considered risky. The incremental GEF funds of US\$ 5 million would support a significant enhancement of the IDA operation firstly by increasing the treatment capacity of the city, secondly by increasing the efficiency in the removal of nutrients from wastewater and thirdly, by enhancing the replication potential of the technology in Vietnam and throughout the region. An added value of using CEPT is that the increased efficiency of the primary treatment stage reduces the residence time needed and thereby increases treatment plant flow capacity. Because of decreased organic loading, the size of any subsequent secondary biological unit is reduced in terms of space and cost. Hence, the incremental support from GEF will help Vietnam meet its wastewater treatment requirements through innovative solutions and help bring to market a new technology.

A quantitative evaluation of the reduction of contaminants discharged into the receiving bodies was not possible for the lack of baseline information. No sewerage system exists in the areas targeted by the project and therefore no reliable data on the characteristics of sewage are available at this stage. Collection of information and creation of a project baseline will be one of the objectives of this project while the construction of the sewerage system will be financed under the IDA credit.

F. INDICATE RISKS, INCLUDING CLIMATE CHANGE RISKS, THAT MIGHT PREVENT THE PROJECT OBJECTIVE(S) FROM BEING ACHIEVED AND OUTLINE RISK MANAGEMENT MEASURES:

Risk	Risk Rating	Risk Mitigation Measure
From Outputs to Objective		
Lack of continuing commitment from the Government of Vietnam to the project	M	Regarded as modest because the Government has undertaken significant commitments in the environmental sector and has also some economic interest in the project because it deals with tourist areas.

Improved sanitation behavior by beneficiaries	M	Information, Education and Communication program to promote changed behaviors. Adoption of a Healthy City Partnership under the IDA project.
Customers unwilling to pay for services	M	Public awareness campaign. Collection of waste-water fees through the water bill. Enhanced services.
Province authorities unwilling to charge for services	S	Extensive discussion with authorities during preparation and covenant on cost recovery levels in IDA project.
Inadequate operation of the new facilities	M	Training of operators included in the TA component of IDA project.
Lack of financial capacity to supply chemicals during the early years of operation	S	Supply of chemicals included within IDA project
From Components to Outputs		
Limited willingness to connect to the new systems	M	Public education, access to credit, mandatory universal charging to all customers with water connection and mandatory house connections required to new sewers.
Collusive and corrupt practices during project implementation	M	Low prior review thresholds, enhanced PMU procurement and FM training by IDA prior to effectiveness and hiring of consultants to assist in the procurement process, enforcing procurement complaint-handling and disclosure requirements, and enhanced supervision by IDA during early implementation.
Capacity of the PMUs in project management	M	Extensive training of PMU as part of TA component as well as experience gained under the IDA project
Overall Risk Rating	M	

Risk Rating – H (High), S (Substantial), M (Modest), N (Negligible or Low)

EXPLAIN HOW COST-EFFECTIVENESS IS REFLECTED IN THE PROJECT DESIGN: The CEPT plus trickling filters, not currently used in Vietnam, has been selected among various alternatives as a simple and cost effective component for a multi stage wastewater treatment. The alternatives considered are: facultative ponds, aerated lagoons and oxidation ditches. CEPT proved to be the most cost effective technology for the removal of nutrients from wastewater, with an efficiency ranging between 70 and 90%, whereas for conventional primary + biological treatment only 20—30% of phosphorus is generally removed. Phosphorus and nitrogen are the two most important nutrients in a wastewater effluent and one or the other is usually the limiting nutrient in natural waters. Phosphorus is typically the limiting nutrient in fresh waters and nitrogen is typically the limiting nutrient in seawater. Either may be limiting in brackish water. Both phosphorus and nitrogen stimulate algal growth and the subsequent algal decomposition provides a new source of BOD. Thus CEPT, with its high levels of nutrient removal, is of particular interest as it can help mitigate the potential for harmful algal blooms and help in preventing eutrophication. Considering the above, CEPT was selected as the most appropriate approach to tackle the issue of improving the health and habitat conditions of globally significant marine and coastal ecosystem. Also, the removal of SS is very high if compared with conventional systems and the decrease in BOD is sufficient so as to not impact oxygen concentrations in the ocean. A table summarizing the removal efficiency of CEPT for different contaminants compared with the removal efficiency provided by conventional primary + biological treatment is attached below.

Option	BOD Removal (%)	SS Removal (%)	Nutrient Removal (%)
CEPT + Trickling Filters	95	95	85
Primary + Biological Treatment	85	80	30

PART III: INSTITUTIONAL COORDINATION AND SUPPORT

A. PROJECT IMPLEMENTATION ARRANGEMENT:

Implementation Agencies: At the national level the Ministry of Planning and Investment (MPI) which provides overall guidance on investment policy will supervise and monitor progress. For sector-specific and technical issues, MPI will consult the Ministry of Construction (MoC), which is responsible for urban sector sanitation policy and technical standards, and with Ministry of Natural Resources and Environment (MONRE) which is responsible for environmental standards and policy.

At the provincial level the GEF project will be implemented by the Quy Nhon Project Management Unit (PMU) established under the CCESP. The PMU reports to the Binh Dinh Provincial People Committee (PPC), and is supported by consultants, by provincial and city level departments, and by a Project Steering Committee (PSC) which will include representatives from all relevant departments. The PMU director, or her/his deputy, is experienced staff from the service providers.

During project implementation, the PMU will coordinate and work directly with the related provincial and city departments. However, if there are matters which cannot be resolved then the PMU will seek direction from the PSC.

Financing and Fund Flow: Funds, in Vietnamese Dong, will be on-granted to the Province and service provider from the Ministry of Finance (MoF). A designated account will be established for the PMU. Provincial State Treasury will act as cost verification agent for the project.

Financial Management: No separate financial management will be set up for the project. Instead, the dedicated PMU which has been set up for IDA financed project will be responsible for financial management of this project. The capacity of financial management has been developed satisfactorily in the process of preparation of the IDA financed project. While the project funds and use of funds will be accounted for separately, the internal controls, budgeting, reporting and auditing will be applied for both the IDA financed project and this project which mean that the project financial management must be maintained satisfactorily using the principles and practices acceptable to IDA.

PART IV: EXPLAIN THE ALIGNMENT OF PROJECT DESIGN WITH THE ORIGINAL PIF:

The Project design remains aligned with the original PIF and the project cost is similar to the project cost estimated in the PIF and the GEF grant remains unchanged (below).

. Description	PIF Stage			Project Stage		
	Total Cost	Financing		Total Cost	Financing	
		GEF	Counterpart		GEF	Counterpart
1. Construction of Treatment Plant(s)	13,064,466	4,500,000	8,564,466	7,171,950	4,500,000	2,671,950
2. Dissemination and replication promotion	400,000	350,000	50,000	350,000	350,000	0
3. Monitoring, evaluation, and project management	765,000	150,000	615,000	150,000	150,000	0
4. Wastewater collection and treatment (IDA financed)	12,471,438	0	12,471,438	19,012,938	0	19,012,938
TOTAL	26,700,904	5,000,000	21,700,904	26,684,888	5,000,000	21,684,888

The total cost in the PIF was estimated to be US\$ 26,700,904 compared to the current estimate of US\$ 26,684,888. At the PIF stage, all four components of the project were presented. However, as the IDA

financing for the Quy Nhon area has already started, the proposed GEF project now includes three components. However, as the GEF project is blended with the IDA financed CCESP project, all four components proposed at the PIF stage will be carried out jointly by GEF and IDA - the GEF financing of US\$ 5,000,000 million is fully blended with the financing from IDA and local sources for the project that is estimated to cost US\$ 26,684,888.


The activities proposed in the PIF stage are identical to those at this stage, although there have been some adjustments among the four components:

Component 1 – along with the GEF financed CEPT plant in Nhon Binh, two other IDA financed wastewater treatment plants in Phu Hoa and Bau Lac were planned at the PIF stage. All three wastewater treatment plants and associated sewerage investments will improve the environmental conditions in the Quy Nhon area. As the IDA project has already started, these two wastewater treatment plants have now been included in component 4 and the total cost for component 1 was reduced accordingly. The planned construction of the CEPT remains unchanged;

Components 2 and 3 – the entire cost for dissemination and replication promotion and project monitoring have not been shown in the Project Stage and only the GEF portion is shown. These items would be financed both the GEF and the IDA sources; and

Component 4 – At the PIF stage, this component included the sewerage networks needed to collect and transport the wastewater to the three wastewater treatment plants in the Quy Nhon area. The cost for this component has now been increased due to the addition of the wastewater treatment plants in Phu Hoa and Bau Lac with a corresponding decrease in estimated costs in Component 1 (these two treatment plants were included in Component 1 at the PIF stage). Component 4 will be financed entirely through the IDA project.

PART V: AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF policies and procedures and meets the GEF criteria for CEO Endorsement.	
 Steve Gorman GEF Agency Coordinator	Mahesh Sharma Project Contact Person
Date: <i>March 20, 2009</i>	Tel. 202-458-7339, Email: msharma1@worldbank.org

ANNEX A: PROJECT RESULTS FRAMEWORK

PDO	Project Outcome Indicators	Use of Project Outcome Information
The Project Development Objective (PDO) is to demonstrate an innovative waste water treatment technology to reduce the discharge of pollutants from the city of Quy Nhon in a financially and environmentally sustainable manner.	<ul style="list-style-type: none"> • Quantity of BOD removed by the treatment process • Quantity of SS removed by the treatment process • Quantity of nutrient (N and P) removed by the treatment process • Volume of treated wastewater • Number of HH connected to the CEPT plant 	Track the performance of the wastewater treatment system and confirm the reduction in contaminants loads entering the aquatic environment.
Intermediate Outcomes	Intermediate Outcome Indicators	Use of Intermediate Outcome Monitoring
Component 1 Construct and operate the Chemically Enhanced Primary Treatment Plant (CEPT)	Completion stages of the CEPT plant	Works have been executed and the plant is operating properly
Component 2 Raise public awareness Promote replication of project achievements	Number of recipients of the public communication campaign (including participants in workshops and education programs) <ul style="list-style-type: none"> • Number of papers published in the website and/or disseminated • Number of local city to city learning events to promote replication 	Track understanding of project's benefits and consequent acceptance Track other applications of the project
Component 3 Monitoring and Evaluation	<ul style="list-style-type: none"> • Baseline information established • Monitoring reports on outcome indicators produced • The funds have been disbursed 	Effective M&E has been established and allows PMU to track success and necessary adjustment

Arrangements for results monitoring

Project Outcome Indicators	Baseline	Target Values						Frequency and Reports	Data Collection and Reporting	
		2008	2009	2010	2011	2012	2013		Data Collection Instruments	Responsibility for Data Collection
Quantity of BOD removed by the treatment process	Baseline information to be established in the first year of project implementation	0	0	0	0	95% removal rate	95% removal rate	Semiannual Reports	E&M Plan	Quy Nhon Municipal Sewerage Company
Quantity of SS removed by the treatment process	Baseline information to be established in the first year of project implementation	0	0	0	0	95% removal rate	95% removal rate	Semiannual Reports	E&M Plan	Quy Nhon Municipal Sewerage Company
Quantity of N and P removed by the treatment process	Baseline information to be established in the first year of project implementation	0	0	0	0	85% removal rate	85% removal rate	Semiannual Reports	E&M Plan	Quy Nhon Municipal Sewerage Company
Volumes of treated wastewater	0	0	0	0	0	3,500 m ³ /day	7,000 m ³ /day	Semiannual Reports	E&M Plan	Quy Nhon Municipal Sewerage Company
Number of households connected to the CEPT plant	0	0	0	0	0	6,000	12,000	Semiannual Reports	E&M Plan	PMU

Intermediate Outcome Indicators	Baseline	Target Values.						Frequency and Reports	Data Collection and Reporting	
		2008	2009	2010	2011	2012	2013		Data Collection Instruments	Responsibility for Data Collection
Completion stages of the CEPT plant		Design completed	Site clearance and preparation	Initiate facilities construction	75% completed	100% completed	CEPT Plant in operation	Annual reports and Bank missions	Construction Reports E&M Plan	PMU
Number of workshops	0	0	0	0	0	1	1	Annual reports and Bank missions	E&M Plan	PMU
Number of publications and presentations	0	0	0	tbd	tbd	tbd	1	Annual reports and Bank missions	E&M Plan	PMU
Number of city to city learning events	0	0	0	0	0	1	1	Annual reports and Bank missions	E&M Plan	PMU

ANNEX B: RESPONSES TO PROJECT REVIEWS

(from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF)

NONE

ANNEX C: CONSULTANTS TO BE HIRED FOR THE PROJECT

<i>Position Titles</i>	<i>\$/ person week</i>	<i>Estimated person weeks</i>	<i>Tasks to be performed</i>
For Project Management			
Local Consultant	1,000	180	Project management and monitoring activities
Engineer	3,000	30	Project management and monitoring activities
For Technical Assistance			
Local Consultant	1,000	250	Capacity building, Technical Assistance to the implementation authorities, training, public awareness, and communication
International Consultant	3,000	45	

ANNEX D: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS

A. EXPLAIN IF THE PPG OBJECTIVE HAS BEEN ACHIEVED THROUGH THE PPG ACTIVITIES UNDERTAKEN.

The PDF block B grant was used to prepare the Construction Investment Report (feasibility studies) and engineering designs and bidding documents. The objectives of the grant were met and it was used satisfactorily.

B. DESCRIBE IF ANY FINDINGS THAT MIGHT AFFECT THE PROJECT DESIGN OR ANY CONCERNS ON PROJECT IMPLEMENTATION.

The Task Team identified some critical aspects that are specifically related to the technological choice and that might affect project design and outcomes, namely: (i) the inadequate operation of the new facility; and (ii) the lack of financial capacity to supply chemicals during the early years of operation. Some mitigation measures were identified and actions have been planned to mitigate the risks associated with the above mentioned findings. In particular the parent IDA project will provide under a TA the training for the operators of the new facility while the supply of chemicals during the first years of operations will be guaranteed by the funds of the IDA project

C. PROVIDE DETAILED FUNDING AMOUNT OF THE PPG ACTIVITIES AND THEIR IMPLEMENTATION STATUS IN THE TABLE BELOW:

<i>Project Preparation Activities Approved</i>	<i>Implementation Status</i>	<i>GEF Amount (\$)</i>				<i>Co-financing (\$)</i>
		<i>Amount Approved</i>	<i>Amount Spent To-date</i>	<i>Amount Committed</i>	<i>Uncommitted Amount*</i>	
Preparation of the formulation and construction investment report, detailed engineering design, bidding documents and all other support materials for the Chemically Enhanced Primary Treatment (CEPT) Plant	-Construction investment report completed -Draft detailed engineering designs, and - Bidding documents complete	297,300	244,296	297,300	53,004	
Independent Consultant for preparation of environmental assessment report (EIA) – Mr. Nguyen Phuoc Dan	Completed	2,700	2,700	2,700	0	
Study tour to Australia from September 05 to 14, 2008	Completed	42,562	42,562	42,562	0	
Workshop in Quy Nhon at October 30, 2008	Completed	1,703	1,703	1,703	0	
National Study Tour	Completed	5,735	5,735	5,735	0	
Total		350,000	296,996	350,000	53,004	

* Uncommitted amount should be returned to the GEF Trust Fund. The refund for unused funds is expected to take place by October 30, 2009.

Document of
The World Bank

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Report No: 42211-VN

PROJECT DOCUMENT

ON A

PROPOSED GRANT FROM THE
GLOBAL ENVIRONMENT FACILITY TRUST FUND

IN THE AMOUNT OF USD 5.0 MILLION

TO THE

SOCIALIST REPUBLIC OF VIETNAM

FOR A

VN-GEF-COASTAL CITIES PROJECT

April 3, 2009

Urban Development Sector Unit
Sustainable Development Department
East Asia and Pacific Region

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CURRENCY EQUIVALENTS

(Exchange Rate Effective January 15, 2009)

Currency Unit	Vietnamese Dong (VND)
VND 16,970	US\$ 1

FISCAL YEAR

January 1 – December 31

ABBREVIATIONS AND ACRONYMS

BOD	Biochemical Oxygen Demand
CBA	Cost-Benefit Analysis
CCESP	Coastal Cities Environmental Sanitation Project
CEPT	Chemically Enhanced Primary Treatment
CFAA	Country Financial Accountability Assessment
CMC	Construction Management Consultants
CPS	Country Partnership Strategy
CQ	Consultant's Qualifications
CSO	Central Statistical Office
DO	Dissolved Oxygen
DoC	Department of Construction
DoE	Department of Education
DoF	Department of Finance
DoNRE	Department of Natural Resources and Environment
DP	Displaced People
DPI	Department of Planning and Investment
EA	Environmental Assessment
EIA	Environmental Impact Assessment
EIRR	Economic Internal Rate of Return
EMP	Environmental Management Plan
FIRR	Financial Internal Rate of Return
FM	Financial Management
FMR	Financial Monitoring Report
GEF	Global Environment Facility
GOV	Government of Vietnam
GPA	Global Program of Action
HCMC	HoChiMinh City
IC	Individual Consultant
ICB	International Competitive Bidding
IDA	International Development Association
IF	GEF – World Bank Strategic Partnership Investment Fund
IW	International Waterways
JBIC	Japanese Bank of International Cooperation
LCA	Least-Cost Analysis

LME	East Sea Large Marine Ecosystems
M&E	Monitoring and Evaluation
MoC	Ministry of Construction
MoF	Ministry of Finance
MONRE	Ministry of Natural Resources and Environment
MPC	Municipal People's Committee
MPI	Ministry of Planning and Investment
NCB	National Competitive Bidding
O&M	Operation and Maintenance
OP	Operational Policy
PAH	Project Affected Household
PEMSEA	Partnerships in Environmental Management for the Seas of East Asia
PER-IFA	Public Expenditure Review- Integrated Fiduciary Assessment
PHRD	Japan Policy and Human Resources Development
PMU	Quy Nhon Project Management Unit
PPC	Provincial People's Committee
PSC	Project Steering Committee
QCBS	Quality and Cost Based Selection
RAP	Resettlement Action Plan
RPF	Resettlement Policy Framework
SDS-SEA	Sustainable Development Strategy for the Seas of East Asia
SEDP	Socio-Economic Development Plan
SOE	Statement of Expenditures
TA	Technical Assistance
URENCO	Urban Environmental Companies
VDIC	Vietnam Development Information Center
VLSS	Vietnam Living Standards Survey
VND	Vietnamese Dong
VWSA	Vietnam Water and Sewerage Association
WACC	Weighted-Average Cost of Capital
WWTP	Wastewater Treatment Plants

Vice President:	James W. Adams (EAPVP)
Country Director:	Victoria Kwakwa (EACVF)
Sector Manager:	Hoonae Kim (EASVS)
Task Team Leader:	William D. Kingdom (EASUR)
	Sudipto Sarkar (EASUR)

VIETNAM
VN-GEF-Coastal Cities Project

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VIETNAM
VN-GEF-COASTAL CITIES PROJECT
PROJECT APPRAISAL DOCUMENT
EAST ASIA AND PACIFIC
EASUR

Date: April 3, 2009	Lending Instrument: GEF Grant
Country Director: Victoria Kwakwa	Sectors: Sewerage (100%)
Sector Manager: Hoonae Kim	Themes: Pollution management and environmental health (P); Other environment and natural resources management (S)
Task Team Leader: Sudipto Sarkar William D. Kingdom	Environmental Assessment: Full Assessment
Project ID: P090374	Safeguard Category: A
Focal Area: International waters	

Project Financing Data

[] Loan [] Credit [X] Grant [] Guarantee [] Other:

For Loans/Credits/Others:

Total Bank financing (US\$ million): GEF US\$5 million

Proposed terms: Standard GEF Terms

GEF Financing Plan (US\$m)

Source	Local	Foreign	Total
BORROWER/RECIPIENT	2.50	0.17	2.67
Global Environment Facility (GEF)	3.00	2.00	5.00
Sub Total:	5.50	2.17	7.67
ASSOCIATED IDA FINANCING	11.41	7.60	19.01
Total	17.28	9.40	26.68

Recipient: SOCIALIST REPUBLIC OF VIETNAM

Responsible Agency:

Project Management Unit in Quy Nhon

379 Tran Hung Dao, Quy Nhon City, Binh Dinh Province

Tel: (84) 56 822 859

Fax: (84) 52 817 249

quynhonpmu@gmail.com

Estimated GEF disbursements (Bank FY/US\$m)

FY	2009	2010	2011	2012	2013	2014			
Annual	0.0	0.25	2.00	2.00	0.50	0.25			
Cumulative	0.0	0.25	2.25	4.25	4.75	5.00			

Project implementation period: Start: July 31, 2009 End: June 30, 2014

Expected effectiveness date: July 31, 2009

Expected closing date: December 2014

Does the project depart from the CAS in content or other significant respects? <i>Ref. PAD A.3</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Does the project require any exceptions from Bank policies? <i>Ref. PAD D.7</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Have these been approved by Bank management?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is approval for any policy exception sought from the Board?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Does the project include any critical risks rated “substantial” or “high”? <i>Ref. PAD C.5</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Does the project meet the Regional criteria for readiness for implementation? <i>Ref. PAD D.7</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<p>Project development objective <i>Ref. PAD B.3, Technical Annex 3</i> The Project Development Objective (PDO) is to demonstrate an innovative waste water treatment technology to reduce the discharge of pollutants from the city of Quy Nhon in a financially and environmentally sustainable manner. Currently, pollutant from Quy Nhon is discharged to the Thanh River which flows into the Thi Nai marine lagoon. The project will contribute to improving the health and habitat conditions of the marine and coastal ecosystems of Vietnam.</p>	
<p>Global Environment objective <i>Ref. PAD B.2, Technical Annex 3</i> The global environmental objective is to improve the health and habitat conditions of globally significant marine and coastal ecosystems along the coastline of Vietnam in an integrated manner.</p>	
<p>Project description <i>Ref. PAD B.4, Technical Annex 4</i> The GEF project is an integral part of, and <i>partially blended</i> with, the IDA financed Coastal Cities Environmental Sanitation Project (CCESP) which together will achieve the development objective. The IDA project will finance the construction of drains, sewers and some wastewater treatment in the core urban areas in the city of Quy Nhon, along with project management and service provider capacity building activities. The wastewater plant financed by GEF will treat the household liquid wastes collected by sewers financed by IDA in a part of the city. The total cost of the complementary IDA financed activities is US\$19.01 million. The specific GEF financed activities are summarized below.</p> <p>Component 1: Construction of Chemically Enhanced Treatment Plant (CEPT) (US\$6.61 million). This component represents an innovative aspect of the proposed project and has a high replication value throughout Vietnam and the region. The component consists of the construction of the Chemically Enhanced Primary Treatment (CEPT) plant with secondary treatment provided by trickling filters. The capacity of the plant will be 7,000 m³/d and it will serve about 60,000 people. The plant will be connected to a sewerage system financed under the IDA Coastal Cities Environmental Sanitation Project (CCESP). The component also includes resettlement cost to be fully financed by the Binh Dinh province.</p> <p>Component 2: Public Communication and Replication Strategy (US\$0.35 million). This component makes reference only to those activities of communication and replication that will be developed for the CEPT plant implementation and operation. The communication strategy will consist of two main parts: (i) a public communication program aimed at dialogue between public institutions and citizens and to raise public awareness and understanding of the key issues related to the project; and (ii) a program of dissemination and replication of project</p>	

achievements, including IW: LEARN activities.

Component 3: Project Management, Monitoring and Evaluation (US\$0.15 million). This component will finance only those monitoring activities that are directly related to measuring and evaluating the GEF project outcomes. This includes, in particular, monitoring of the water quality in the Ha Thanh River (the discharge point for the plant); the water quality in the Thi Nai Lagoon into which the Ha Thanh River flows; and the reductions in pollution delivered by the plant. All the other financial and performance monitoring/reporting, construction supervision, and other project management activities will be financed under the IDA project. Contingencies (US\$0.45 million) and taxes (US\$0.57 million) are not included in the above mentioned costs.

Which safeguard policies are triggered, if any? *Ref. PAD D.6, Technical Annex 10*
[Environmental Assessment \(OP/BP 4.01\)](#)
Physical Cultural Resources ([OP/BP 4.11](#))
Involuntary Resettlement ([OP/BP 4.12](#))

Significant, non-standard conditions, **if any**, for:

Ref. PAD C.7

Board presentation: none

Covenants applicable to project implementation:

- Construction Management Consultant in place prior to the award of any GEF construction contract (as required by the IDA project covenants).
- Implementation of actions, as necessary, to achieve cost recovery levels for service provider (as required by the IDA project covenants).

A. STRATEGIC CONTEXT AND RATIONALE

1. Country and sector issues

1. Sanitation in Vietnam is predominantly a private good with households investing in septic tanks or latrines, depending on location. Access to hygienic latrines has been estimated at 76% in urban areas in 2004, but service efficacy is low. There are a limited number of wastewater treatment plants in the country, all in the major cities. As a result, watercourses in cities and in coastal waters are severely polluted by liquid wastes.

2. This situation will be exacerbated by urban growth. The proportion of people living in urban areas in Vietnam is one of the lowest in East Asia, comprising around 23% of the total population, or 19 million people and is anticipated to increase.

3. The country's urban sewerage policy is presented in Decree 88/2007/ND-CP. The policy sets up regulations on drainage/sewerage activities in urban and industrial areas. The decree aims to: a) define the overall framework of responsibilities for drainage/sewerage services. This includes the regulation about planning, establishing, operating and managing drainage/sewerage activities; b) promote market oriented approaches to service provision; c) develop a better awareness of the impact of sanitation on public health, environmental sustainability and economic development; and, d) define and introduce the principles of determination of wastewater tariffs and cost recovery.

4. There are significant investment needs for urban sanitation to cover the rehabilitation of existing systems and the expansion of new systems. The Government of Vietnam (GOV) has estimated these at \$3.8 billion over the period 2000 – 2010. Combined investment in urban water supply and sanitation has totaled \$1 billion over the last decade, mostly for water supplies.

5. The Urban Environmental Companies (URENCOs), normally responsible for drainage, sewerage, solid waste management and other urban activities, are institutionally and financially relatively weak, especially compared with water supply companies. Wastewater fees, typically between VND 400-500/m³ and rising, are charged in cities where sanitation facilities are being developed.

6. *Country Driven-Ness*. Vietnam's "Orientation for the Development of Urban Sewerage and Drainage until 2020" aims to ensure that all urban areas would have suitable wastewater treatment facilities by 2020. In December 2003, the government issued a new environmental strategy that provides an intermediate target of 40% of urban wastewater to be treated by 2010. Thus, policy at the national level is clearly driving towards expanded wastewater treatment.

7. At the municipal level, the importance of tourism to economic development has increased attention to improving the environment, through better management of both solid and liquid wastes. Quy Nhon City, the beneficiary of the proposed Global Environment Facility (GEF) grant, and a participant in the IDA financed Coastal Cities Environmental Sanitation Project (CCESP Cr: 4253-VN) understands the need to make progress on this issue and funded the preparation of initial project pre-feasibility studies using their own resources. In addition, the

City has developed an investment plan for the IDA financed project, under which investments will be made to ensure that secondary and tertiary drainage and sewer networks are constructed, and that barriers to households connecting to the network are minimized. This is crucial, as there are examples where lack of attention to this matter has resulted in treatment plants being built without an adequate sewer network feeding into them.

2. Rationale for Bank/GEF involvement

8. Investments in wastewater treatment and pollution control in urban centers in Vietnam, including coastal cities such as Nha Trang (270,000 inhabitants), Quy Nonh (230,000 inhabitants) and Dong Hoi (95,000 inhabitants), which will be assisted by the IDA investment, have lagged far behind its rapid economic development, which is currently estimated at 7% p.a. To maintain this higher than average growth, much of which is related to tourism, good environmental conditions are paramount. All the larger cities in the country are already undertaking sanitation investments, although few are yet operational. The CCESP cities represent the next tier of cities in Vietnam to tackle environmental sanitation issues, and have been selected for IDA support based on their size and their specific needs – tourism features as a major economic activity in all three cities.

9. This project is a Partially Blended GEF operation and is linked to the IDA investment but due to a different time schedule for the GEF project, the World Bank proceeded with the approval of the IDA credit in advance of the GEF approval. The IDA-supported operation and the GEF-supported project, although technically separated into two projects, are integral parts of a package of activities that work together to achieve the development objective. The IDA project will finance the construction of drains, sewers and some wastewater treatment in the core urban areas in the city of Quy Nhon, along with facilities for solid waste management and school sanitation and a program for service provider capacity building. The wastewater plant financed by GEF will treat the household liquid wastes collected by sewers financed by IDA in a part of the city.

10. The GEF will support the demonstration of a new, and appropriate, treatment technology in Quy Nhon, whilst a Japan Policy and Human Resources Development (PHRD) co-financing grant will build the capacity of service providers and raise public awareness of the project.

11. Progressive local governments in Vietnam, including those in the CCESP, have declared pollution reduction a priority and adopted a sub-regional approach to tackling it. The project would support and expand that approach in Quy Nhon and have high replication potential not only for other coastal cities in Vietnam, but for all cities that discharge to rivers and thence into the seas off the country's coast.

12. On April 18, 2005, the GEF National Focal Point in Vietnam formally endorsed the GEF project proposal.

3. Project Eligibility

13. GEF and the World Bank have established a Strategic Partnership Investment Fund for Pollution Reduction in Large Marine Ecosystems of East Asia (the Investment Fund - IF) under

the GEF's Contaminant-Based Operational Program (OP10). The objective of the IF is to reduce land based pollution discharges that have an impact on the seas of East Asia by leveraging investments in pollution reduction through the removal of technical, institutional and financial barriers. In particular, the IF will finance activities related to the World Bank pollution reduction investment projects that increase investment in activities that reduce the land-based pollution and demonstrate cost-effective pollution reduction techniques for future replication. This project is consistent with the goals and objectives of the IF and would be financed under it.

14. The GEF project is eligible for financing under the IF as it fulfills all seven necessary conditions stipulated in the approved IF Brief, i.e. the project: (i) is located within the coastal watershed of one of the six East Asian large marine ecosystems; (ii) demonstrates an innovative technical mechanism to combat land based water pollution; (iii) has high likelihood of replication in Vietnam and more widely in East Asia; (iv) is unlikely to proceed without grant financing from GEF; (v) has necessary co-financing available; (vi) has been endorsed by the Vietnamese GEF Focal Point; and (vii) meets all relevant World Bank Appraisal criteria.

15. *Country Eligibility.* Vietnam is eligible for GEF assistance under the International Waters Focal Area through the World Bank.

4. Higher level objectives to which the project contributes

16. The World Bank Group Country Partnership Strategy (CPS), which links to the GoV's Socio-Economic Development Plan (SEDP), was completed in February 2007. It lists four key objectives: (i) improve the business environment; (ii) strengthen social inclusion; (iii) strengthen natural resource and environment management; and (iv) improve governance

17. The CPS describes the Bank's support for each objective. The project supports Pillar 3 – Strengthening Natural Resources and Environmental Management - of the CPS. In particular the project contributes to reducing environmental degradation through improved wastewater treatment leading to increased livelihood security for City residents.

18. The proposed GEF funded activity is consistent with the GEF's original Operational Program (OP) 10, the Contaminant-based International Waters OP, in that it will demonstrate and encourage replication of innovative and best practice options to overcome the barriers to reducing land-based contamination of an international water body, the East Sea. It is also consistent with GEF's new Strategic Objective 2 "to catalyze transboundary actions addressing water concerns," specifically to reduce land-based coastal pollution, and with Strategic Program 2, "reducing nutrient over-enrichment and oxygen depletion from land-based pollution of coastal waters in LMEs consistent with the Global Program of Action (GPA)." Its innovative features include: (i) construction of non traditional waste water treatment plant which will demonstrate the applicability of the technology within the country; and (ii) promotion of a broader understanding of key issues related to appropriate waste water treatment, including upgrading paths that follow each city's economic development, beneficial reuse of bio-solids from the process, cost effective nutrient removal, tolerance to saline intrusion (especially important in coastal cities), in addition to low capital and operating costs, and small land requirements. This improved understanding will be fostered through the dissemination of the project's benefits and the lessons learned (from other similar projects). The dissemination strategy will support, among

other activities, national and international conferences, workshops, presentations and technical publications.

B. PROJECT DESCRIPTION

1. Lending instrument

19. This is an investment operation which is financed by the GEF and IDA.

2. Global Environment Objective (GEO)

20. The Global Environmental Objective (GEO) is to pilot and promote the replication of a new, more efficient wastewater treatment technology, which would contribute to improving in an integrated manner the health and habitat conditions of globally significant marine and coastal ecosystems along the coastline of Vietnam and, through global oceanic circulation, other areas of the Pacific Ocean. The objective will be achieved through: (i) reduction of sewage pollution loads through the development and establishment of innovative wastewater treatment technologies producing environmental incremental benefits; and (ii) enhancement of the dialogue between public institutions and citizens through a program of dissemination and replication of project's outcomes to other cities of the region.

3. Project development objective and key indicators

21. The Project Development Objective (PDO) is to demonstrate an innovative waste water treatment technology to reduce the discharge of pollutants from the city of Quy Nhon in a financially and environmentally sustainable manner. Currently, pollutant from Quy Nhon is discharged to the Thanh River which flows into the Thi Nai marine lagoon. The project will contribute to improving the health and habitat conditions of the marine and coastal ecosystems of Vietnam.

22. Key performance indicators include quantified targets for the removal of contaminants from domestic wastewater discharged from the CEPT.

23. The CEPT WWTP project in Quy Nhon City is an integral part of the CCESP, funded by IDA which involves the Cities of Quy Nhon, Nha Trang and Dong Hoi. The development objective of the CCESP is to improve the environmental sanitation conditions in the project cities in a sustainable manner and thereby enhancing the quality of life for city residents.

4. Project description

24. The GEF project is an integral part of the IDA financed Coastal Cities Environmental Sanitation Project. The IDA project will finance the construction of drains, sewers and some wastewater treatment in the core urban areas in the city of Quy Nhon, along with project management and service provider capacity building activities. The wastewater plant financed by GEF will treat the household liquid wastes currently emptying into the marine lagoon being collected by sewers financed by IDA in a part of the city. The total cost of the complementary

IDA financed activities is US\$19.01 million. The specific GEF financed activities are summarized below.

Component 1: Construction of Chemically Enhanced Treatment Plant (CEPT) (US\$6.61 million)

25. This component represents an innovative aspect of the proposed project and has a high replication value throughout Vietnam and the region. The component consists of the construction of the Chemically Enhanced Primary Treatment (CEPT) plant with secondary treatment provided by trickling filters. The capacity of the plant will be 7,000 m³/d and it will serve about 60,000 people. The plant will be connected to a sewerage system financed under the IDA Coastal Cities Environmental Sanitation Project (CCESP).

26. The new technology will introduce a higher efficiency in the removal of BOD and nutrients (N and P) from wastewater while reducing the requirement for space for the secondary treatment and the associated investment costs. Accumulated sludge will be dried and composted in situ every three years. This will introduce a high replication value by demonstrating the applicability of the technology within the Vietnam context and by encouraging the use of the technology for wastewater treatment in other cities in the country.

27. This component is an integral part of the Quy Nhon City overall wastewater collection and treatment system which includes two additional treatment plants with a capacity of about 23,000 m³/day. The IDA project in Quy Nhon will finance the construction of these two additional treatment plants as well as sewerage network rehabilitation and extension and households connections.

Component 2: Public Communication and Replication Strategy (US\$0.35 million)

28. The communication strategy will consist of two main parts: (i) a public communication program aimed at dialogue between public institutions and citizens and to raise public awareness and understanding of the key issues related to the project; and (ii) a program of dissemination and replication of project achievements.

29. This component will include the following activities with the objective of reaching the largest possible number of interested parties: (i) organization of two workshops for practitioners and decision-makers on the technical, economic and environmental benefits of the new wastewater treatment technology; (ii) design and implementation of information campaigns on project goals and benefits of appropriate waste water treatment, as well as on local communities' role and responsibilities, including payment of user fees; (iii) design and implementation of an environmental education program for local communities; (iv) design and implementation of a promotion/dissemination campaign, including technical presentations at regional and national conferences, publishing of papers in national and/or international technical publications, and a project website; (v) technical assistance (TA) to develop a replication strategy, including the identification of methods of information dissemination and of repeatability of projects (e.g. through GEF IW:LEARN and UNEP's best practice database). Collaboration will be carried out periodically with PEMSEA for replication and dissemination activities.

Component 3: Project Management, Monitoring and Evaluation (US\$0.15 million)

30. This component will finance monitoring activities to measure and evaluate the GEF project outcomes. This includes, in particular, monitoring of the water quality in the Ha Thanh River (the discharge point for the plant); the water quality in the Thi Nai Lagoon into which the Ha Thanh River flows; and the reductions in pollution delivered by the plant. All the other financial and performance monitoring/reporting, construction supervision, and other project management activities will be financed under the IDA project.

5. Lessons learned and reflected in the project design

31. The IDA project, of which this GEF project is an integral part, draws on lessons learnt both nationally and internationally. These include:

32. *Enhancing technical and managerial capacity of service providers* - The service providers will significantly increase the scope and extent of their activities as a result of project investments. Efficient and effective service providers are essential for long term sustainability. The project therefore includes extensive capacity building to transform the service providers to meet these new demands.

33. *Financial sustainability is strongly linked to user fees* - Service providers need reliable sources of revenue to pay for operations and maintenance costs, and replace short lived assets. The most reliable source of such revenue is user fees. The project will gradually introduce affordable user fees over the project life to achieve the required levels of cost recovery. This approach was successfully applied in the Three Cities Sanitation Project. The necessity and benefits of user fees will be made clear and supported through the public communication campaign.

34. *Physical investments only deliver part of the benefits* - The benefits from sanitation infrastructure are significantly increased when beneficiaries are exposed to Information, Education and Communication (IEC) on household sanitation practices. Such IEC also generates demand for household sanitation facilities. The IDA-funded project includes activities for improving sanitation behavior and construction of household facilities.

35. *Laying sewer networks does not guarantee connections to households* - House owners have often invested in septic tanks and may not want to connect to the new system. The IDA-financed project addresses this through: i) public awareness campaigns about system benefits; ii) house connections financed under the project; and iii) wastewater fees applied to all households with water connections – thus reducing disincentives to connect to the system once available.

36. *Project management capacity at the sub national level is weak* - Capacity building of the PMU is included as part of the PHRD funded preparation activities under the IDA project, and will be further expanded during implementation. Practical learning is reinforced by workshops, regular meetings of the PMUs, and from visits to the Three Cities Sanitation Project PMUs.

6. Alternatives considered and reasons for rejection

37. In the baseline scenario, i.e. Bank's project (CCESP with IDA financing) but without GEF funding, will establish a good sector practice and further develop Vietnam's urban environmental agenda technically (sewerage, waste water treatment), financially (cost recovering charges), and institutionally (efficient and effective service providers). However, lack of local experience with innovative solutions and client concerns about the use of "untried" technologies, will limit the design of treatment facilities to conventional approaches. The additional GEF funds of US\$ 5 million would support a significant enhancement of the Bank Project's waste water treatment component. With GEF funding, the coastal cities would have the opportunity to "try and test" a pilot chemically enhanced primary waste water treatment plant in Quy Nhon city. This technology has been successfully applied in Latin America, for example in Mexico City and Rio de Janeiro, as well as in Hong Kong, and it is believed that it would be successful under local conditions in Vietnam.

38. Several treatment technology options were considered for the primary and the secondary treatment processes. With regard to the primary treatment, CEPT consists of an addition of chemicals at the sedimentation stage for which three alternatives were considered, namely: (i) conventional primary sedimentation with aerobic digesters; (ii) conventional primary sedimentation with anaerobic sludge ponds; and (iii) anaerobic primary sedimentation ponds. The first two alternatives were rejected because they were more complex, required higher degree of sludge management, would need more skilled workers, and would consume more energy. Among the alternatives considered for the secondary treatment were: (i) facultative ponds; (ii) aerated lagoons; (iii) oxidation ditches; and (iv) trickling filters. The selection process was driven by the: limited land availability; compliance with national standards for effluents; and need for a reliable and low-cost wastewater treatment system. Although the facultative ponds would be the most simple technology, they would not be able to meet the effluent standards. Furthermore, the land requirement for facultative ponds would exceed the available land. The trickling filter technology was chosen, compared to the other technologies, because of its low power consumption and performance reliability.

39. Wastewater services are often seen as part of public works departments, alongside roads or lighting. This institutional arrangement, with limited clarity on resource utilization and financial sustainability, was rejected in favor of combining the wastewater services with the operations of the water companies. The combined water/wastewater model (as implemented under the CCESP/GEF project) will lead to improved technical and financial management and enhance the quality and sustainability of wastewater services.

40. The immediate introduction of higher wastewater tariffs would improve the financial health of the service providers operating the GEF plant. However consumer resistance is likely and a phased approach has been adopted which will meet the needs of both the service providers and the customers. In addition GEF financing allows for the implementation of a public communication campaign aimed to inform the customers about the necessity of higher fees and the benefits they will bring.

C. IMPLEMENTATION

1. Partnership arrangements

41. The GEF project would be financed by the Strategic Partnership Investment Fund for Pollution Reduction in Large Marine Ecosystems of East Asia (the Investment Fund - IF) under the GEF's Contaminant-Based Operational Program (OP10). The GEF project is an integral part of the IDA financed CCESP and the two will be fully coordinated during implementation through the use of the same Project Management Unit (PMU) based in Quy Nhon. In addition, the GEF project will work with partners in PEMSEA, UNEP, GEF IW:LEARN, and the professional association in Vietnam (VWSA) to disseminate the project findings and share experiences.

2. Institutional and implementation arrangements

42. **Implementation Agencies:** At the national level the Ministry of Planning and Investment (MPI) which provides overall guidance on investment policy will supervise and monitor progress. For sector-specific and technical issues, MPI will consult the Ministry of Construction (MoC), which is responsible for urban sector sanitation policy and technical standards, and with Ministry of Natural Resources and Environment (MONRE) which is responsible for environmental standards and policy.

43. At the provincial level the GEF project will be implemented by the Quy Nhon Project Management Unit (PMU) established under the CCESP. The PMU reports to the Binh Dinh Provincial People Committee (PPC), and is supported by consultants, by provincial and city level departments, and by a Project Steering Committee (PSC) which will include representatives from all relevant departments. The PMU director, or her/his deputy, is experienced staff from the service providers.

44. During project implementation, the PMU will coordinate and work directly with the related provincial and city departments. However, if there are matters which cannot be resolved then the PMU will seek direction from the PSC.

45. **Financing and Fund Flow:** Funds, in Vietnamese Dong, will be on-granted to the Province and service provider from the Ministry of Finance (MoF). A Designated Account will be established for the PMU. Provincial State Treasury will act as cost verification agent for the project.

46. **Financial Management:** No separate financial management will be set up for the project. Instead, the dedicated PMU which has been set up for IDA financed project will be responsible for financial management of this project. The capacity of financial management has been developed satisfactorily in the process of preparation of the IDA financed project. While the project funds and use of funds will be accounted for separately, the internal controls, budgeting, reporting and auditing will be applied for both the IDA financed project and this project which mean that the project financial management must be maintained satisfactorily using the principles and practices acceptable to IDA.

3. Monitoring and evaluation of outcomes/results

47. The PMU will compile data and monitor the project performance. The results indicators are straightforward and no capacity constraints are foreseen.

4. Sustainability and Replicability

48. The Government and Quy Nhon City are committed to enhancing wastewater treatment and reducing water borne pollution. The Government policy on this issue is clearly stated, and the city has established a Project Management Unit to prepare and implement the IDA-and GEF-financed projects.

49. Long term operational sustainability will be achieved through the operation and maintenance of the CEPT plant by the Provincial Water and Wastewater Company that is responsible for all sewerage and wastewater treatment in the City. Under CCESP a PHRD capacity building grant has been secured, part of which is allocated to provision of training in the management and operation of the project's wastewater treatment plant, including the CEPT plant.

50. Financial sustainability is a key challenge, especially in the early days of improved wastewater treatment. During this period households are not sure of the benefits arising from such investments, and yet are required to pay wastewater charges. The government and the Bank project team understand this challenge. The Government is promoting cost recovery in the sector, and the Bank team has placed significant emphasis on this point, seeking tariffs that cover O&M costs plus at least depreciation of short lived assets. International experience has shown that securing operating and maintenance costs from user fees are critical to the sustainability of wastewater systems. Critically there is a covenant in the CCESP Development Credit Agreement that requires Quy Nhon to implement cost recovery schedules that will, by the end of the project, collect sufficient user fees to cover their operating costs and the depreciation of short lived assets. In addition, the IDA financed project includes a component on public awareness related to sanitation and payment for services, for it is believed that improved consumer education will allow appropriate tariffs to be adopted.

51. At the current time, whilst no wastewater charges are made in Quy Nhon, progress is being made in other cities in Vietnam that are more advanced in the development of their urban sanitation. The precise method of billing and collection has yet to be agreed with the recently established providers of combined water supply and sanitation services in the City. Normal practice is to have the water supply division collect the wastewater charge (for a fee) and pass it on to the wastewater division.

52. The proposed GEF-supported activities have significant potential for replicability in Vietnam and throughout East Asia. Chemically enhanced primary wastewater treatment offers low capital costs, robust treatment performance, low operating costs, and a number of associated benefits including enhanced nutrient removal, potential for beneficial reuse of bio-solids,

tolerance of influent salinity, and a staged upgrade path to reflect economic development in each city.

53. Currently there are estimated to be 20 million urban residents in Vietnam, and growth forecasts predict this number to double by the year 2020. Successful implementation of a CEPT based treatment plant in one Vietnamese city would provide opportunities for widespread implementation across the country as it starts to address a back log in wastewater treatment investments, and meet the demands of rapid urbanization.

54. Replication will be promoted through a range of routes, including: (i) the demonstration effect of the plant itself; (ii) technical presentations at workshops and conferences; (iii) study visits, (iv) technical publications; (v) website; (vi) improved understanding of the CEPT process by local engineers and process designers; and of actors, including: (i) the professional association (VWSA); and (ii) government, donors and borrowers who will be able to better assess the appropriateness and cost effectiveness of the solution. It will promote International Waters (IW) management by facilitating learning and information sharing among IW projects, partners and stakeholders.

55. The project will fund a workshop in Vietnam to share experiences from the CEPT technology. The workshop material will be both in English and Vietnamese, and representatives from PEMSEA will be invited to attend and help disseminate the experience and workshop documents. Furthermore the project's representatives will participate in conferences sponsored by GEF or PEMSEA, such as the biannual GEF International Waters Congress and the PEMSEA East Asia Seas Congress. Links will also be made to the IW:LEARN website/activities as the project progresses.

5. Critical risks and possible controversial aspects

Risk	Risk Rating	Risk Mitigation Measure
From Outputs to Objective		
Lack of continuing commitment from the Government of Vietnam to the project	M	Regarded as modest because the Government has undertaken significant commitments in the environmental sector and has also some economic interest in the project because it deals with tourist areas.
Improved sanitation behavior by beneficiaries	M	Information, Education and Communication program to promote changed behaviors. Adoption of a Healthy City Partnership under the IDA project.
Customers unwilling to pay for services	M	Public awareness campaign. Collection of waste-water fees through the water bill. Enhanced services.
Province authorities unwilling to charge for services	S	Extensive discussion with authorities during preparation and covenant on cost recovery levels in IDA project.
Inadequate operation of the new facilities	M	Training of operators included in the TA component of IDA project.
Lack of financial capacity to supply chemicals during the early years of operation	S	Supply of chemicals included within IDA project
From Components to Outputs		
Limited willingness to connect to the new systems	M	Public education, access to credit, mandatory universal charging to all customers with water connection and mandatory house connections required to new sewers.
Collusive and corrupt practices during project implementation	M	Low prior review thresholds, enhanced PMU procurement and FM training by IDA prior to effectiveness and hiring of consultants to assist in the procurement process, enforcing procurement complaint-handling and disclosure requirements, and enhanced supervision by IDA during early implementation.
Capacity of the PMUs in project management	M	Extensive training of PMU as part of TA component as well as experience gained under the IDA project
Overall Risk Rating	M	

Risk Rating – H (High), S (Substantial), M (Modest), N (Negligible or Low)

56. The project is not considered controversial, since the proposed intervention has the support from local communities and authorities

6. Loan/credit conditions and covenants

Implementation Covenants

57. The two key covenants, as required under the CCESP project with IDA financing, are:

- Construction Management Consultant in place prior to the award of any GEF construction contract; and
- Implementation of actions, as necessary, to achieve cost recovery levels for service provider.

D. APPRAISAL SUMMARY

1. Economic and financial analyses

Financing Arrangement and Fiscal Impacts

58. Parallel financing to the GEF portion will be provided through the IDA resources under the CCESP. In case additional funds are needed Quy Nhon city will provide such resources as outlined in the General Conditions applicable to the GEF Grant Agreement.

Cost Recovery for Environmental Sanitation Services

59. The project, in line with government policy, will recover from user charges the O&M costs of the wastewater services, depreciation of short lived assets, such as vehicles and equipment, and any loan interest charges. This allows for affordable tariffs and gives sufficient revenue to the service provider to operate the system and finance replacement of short lived assets. This level of cost recovery by the service providers will be achieved by the end of project implementation by gradually increasing tariffs each year coupled with expansions in service coverage and improvements in tariff collection efficiency.

60. The cost recovery schedules for the service providers have been agreed with Quy Nhon government and their implementation is a covenant of the IDA-financed project.

Financial Internal Rates of Return (FIRR)

61. The FIRR for the project was estimated at 28.2% (wastewater) which is higher than the weighted average cost of capital of between 10-12%. The above mentioned financial rate of return is presented in the CCESP project which included the GEF financing for the Quy Nhon analysis. For purposes of this financial analysis, the costs and benefits have not been updated as the analysis of the CCESP is considered as the base case appraisal.

Affordability

62. The assessment of affordability is based on the combined costs of water supply, wastewater and solid waste charges. The monthly water and sanitation cost to households,

including for low income families, remain below the affordability level of 5% of household income.

Willingness to pay monthly sanitation charges

63. Most households are willing to pay for wastewater services. Customers will, however, need to better understand the reason for, and basis of, payments for wastewater services. A public awareness activity is therefore included in the IDA-financed project to improve beneficiaries' understanding about the benefits of improved sanitation and the costs of service provision.

Willingness and affordability to pay for a connection to the new system

64. Nearly all (98%) households expressed their willingness to connect their existing gray water outlets to the new wastewater system. Results from the social assessment survey showed that households were more reluctant to connect their existing black water systems (primarily septic tanks) to the new networks with only 34 % expressing an interest in Quy Nhon. The project design therefore minimizes the risk by making black water connections mandatory and mitigating this arbitrary procedure by: waiving a connection fee; and ensuring house connections as part of the project.

Collection of user fees

65. Wastewater fees will be collected by the new water/ wastewater companies formed under the IDA project. The local governments have allowed the new companies to retain the wastewater revenues for operation and maintenance of the combined drainage/wastewater systems.

Economic Analysis

66. The benefits of the IDA project of which GEF project is a linked component include: (i) reduced flood damage; (ii) health benefits; (iii) savings in installation and desludging of septic tanks; (iv) savings in drainage maintenance; (v) increased tourism due to an improved environment for tourists and potential investors; (vi) improved financial positions of the service providers as tariffs are increased resulting in better management of service provision and the elimination of subsidies from the provincial governments; (vii) enhancement of the development potential of the city especially the areas along canals and previously flooded areas; (viii) creation of new business opportunities such as restaurants, retail stores, and other entertainment activities; and (ix) land value appreciation in the area, the extent of which will largely depend on the new economic activities created by the proposed investments.

67. It is not feasible to quantify all the above benefits, or to evaluate accurately those that are quantifiable. In this analysis, only the first five benefits were assessed. The economic rate of return of the project was estimated at 16 percent, which is higher than the assumed 12 percent discount rate, and highlights the robustness of the project in terms of its contribution to economic growth in the participating cities. The above mentioned economic rate of return is presented in

the CCESP project which included the GEF financing for the Quy Nhon analysis. For purposes of this economic analysis, the costs and benefits have not been updated as the analysis of the CCESP is considered as the base case appraisal.

2. Technical

68. Pre-feasibility and feasibility studies that were conducted in preparation for this project have shown that CEPT would be the most appropriate first stage (primary treatment) treatment of a multi stage wastewater treatment. The removal of pollutants by coagulation and precipitation, in addition to achieving a marked increase in the efficiency of the primary treatment stage, reduces the residence time needed and thereby increases treatment plant flow capacity. Because of decreased organic loading, the size of the subsequent secondary treatment unit is reduced in terms of space and cost. The coastal environment of Quy Nhon city will benefit from the high efficiency of CEPT in removing Suspended Solids and reducing BOD. This will contribute substantially to mitigate the impact on oxygen concentration in Thi Nai lagoon. Also, CEPT effectively removes high amount of phosphorus, which is usually the limiting nutrient in fresh water ecosystems and one of the major causes of eutrophication. The higher levels of nutrient removal are of particular interest as they mitigate the potential for harmful algal blooms and help in preventing eutrophication.

69. The feasibility study has shown that trickling filters are the most feasible secondary treatment option. The trickling filter process is a fixed-film biological treatment that provides both relative simplicity in operation as well as high reliability in performance. They require the least amount of land for implementation as well as minimal mechanical/electrical components, coupled with the lowest electrical power consumption.

70. The studies concluded that CEPT was the optional method of treatment to achieve the required effluent standard within the available space. In the future additional disinfection treatment may be required to reduce coliforms – depending on the outcome of monitoring to be undertaken as part of the GEF project – and the layout of the plant allows for that future construction if needed.

3. Fiduciary

Procurement

71. Procurement under the proposed project would be implemented by the Quy Nhon Project Management Unit (PMU) which had been established and operational under CCESP. The Quy Nhon PMU has been well organized, is staffed with qualified procurement personnel and has good experience with Bank procurement rules and procedures through their work in preparing and implementing CCESP. Therefore, the procurement risk for the proposed project is rated as “low” The PMU has benefited from the specific capacity building/strengthening actions which have been agreed between the IDA and the Borrower and implemented as part of CCESP

72. Procurement for the proposed project would be carried out in accordance with the World Bank’s “Guidelines: Procurement under IBRD Loans and IDA Credits” dated May 2004; and “Guidelines: Selection and Employment of Consultants by World Bank Borrowers” dated May

2004; and the provisions stipulated in the Grant Agreement. The project procurement arrangements and Procurement Plan are detailed in Annex 8.

Financial Management

73. *Financing and Fund Flow:* Funds, in US dollars, will be on-granted to the Province and service provider from the MoF. A Designated Account will be maintained at a commercial bank acceptable to IDA to receive the funds.

74. *Financial reporting and auditing:* The project account will be kept using accounting principles and practices acceptable to IDA. No separate financial statements or audit of the financial statements is required for the Grant. Instead, the financial statements and the financial audit will be consolidated and integrated into the financial statements and financial audit of the IDA Project. The quarterly consolidated financial monitoring reports in the forms and template agreed for the IDA project will be submitted to the Bank within 45 days of the project end. The annual audited consolidated financial statements and the audit reports should be submitted to the Bank within 6 months to the year end. The audit should be done by the auditor with the Terms of Reference acceptable to IDA. To monitor the financial performance of the service provider, and to ensure project assets enter into the balance sheet of the service provider, a financial audit of the service provider will be conducted.

4. Social

75. The wastewater treatment plant will benefit an estimated 60,000 residents living in the north-west part of the city. A small portion of the population served by this project will experience adverse socio-economic impacts even though mitigation measures according to the Bank's safeguard policies have been taken. The adverse impacts are due mainly to the necessity to acquire lands and relocate households in order to accommodate the construction of the wastewater treatment plant. The project will permanently acquire 15.9 ha. of land and a buffer zone would be created from which households will have to relocate. A total of 110 households or about 480 people will be affected because of the project. The affected households comprise: (i) 97 households or 423 people that would be relocated as they currently live in the buffer zone. Residents in these 97 households are mainly hired labor (49.5%), farmers (16.5%) and salaried individuals (14.4%). Consultations with the affected population showed that most of them (91 out of 97 households) would choose to move to the proposed resettlement site; (ii) 7 households as they have land in the core zone; and (iii) 6 households that will be temporarily affected due to the construction of sewerage transmission lines in the vicinity of the plant.

76. As the project will *not* acquire any agricultural lands in the buffer zones, the agricultural related livelihoods of the 97 relocated households will remain intact (unimpeded as prior to project implementation). In order to ensure that owners of these agricultural lands can continue producing, two specific actions have been taken: (i) the Provincial Peoples Committee (PPC) obtained the necessary permissions to ensure that households can continue to access their agricultural lands despite having been relocated elsewhere; (ii) ensuring that the relocation site (Xom Cong resettlement) is physically accessible to relocated households thereby not impacting

their ability to access the agriculture land. This is achieved by relocating households within the same ward (Nhon Binh Ward) as their previous homes. The relocation site is within a 700-900 metres from their agricultural lands. The proximity of the relocation site should also ensure that community relations, customs, kinship ties etc are disrupted to the least extent possible thereby helping mitigate the socio-economic impacts ensuing from displacement.

77. There are shrimp ponds in the core zone which were leased by the government to the local population (3 households or 13 people). Irrespective of the project, the lease will expire in December 2009 and the core zone will be used for the construction of the treatment plant. The yields from the shrimp farms are low and the cultivators have other sources of income and as a result the loss of access to the ponds will not have significant adverse impacts. Further, the project includes compensation for loss of aquaculture land.

78. There are 110 graves located in the core zone that would need to be relocated before the project implementation. The local population has agreed to move the grave sites after they are compensated. There is a small shrine (area around 2m²) located in the buffer zone which is of significance to the immediate and wider community and which is used for ceremonial offerings three times a year. Since the shrine would be impacted due to its location in the buffer zone, consultations were carried out with the community. The results of these were that 86 households (out of 97) requested the shrine not be moved. Public access all year-round to the shrine will be ensured. Trees are expected to be planted near the shrine so that the treatment plant will be less conspicuous from the shrine.

79. A Resettlement Action Plan (RAP) was prepared, based on the approved Resettlement Policy Framework (RPF) for the CCESP. Its objective is to ensure that all displaced people (DPs) will be compensated for their losses at replacement cost and will be provided with rehabilitation measures to assist them to improve, or at least maintain, their pre-project living standards. The RAP was prepared on the basis of a detailed impact inventory, a socioeconomic survey and an extensive consultation process with the affected population as well as within relevant government agencies. The RAP was disclosed in Vietnam and at the InfoShop in May 2008.

80. There are no ethnic minority communities in the project areas as determined through the socio-economic assessment carried out as part of project preparation.

5. Environment

81. *Environmental Assessment Policy (OP 4.01)*: The project is considered a category A for Environmental Assessment (EA). The Borrower prepared an EIA report consisting of Environmental Assessment (EA) and Environmental Management Plan (EMP), acceptable to the Bank for the investment. The project is expected to have significant positive benefits for the environment, public health and the tourism-based economy due to improved water quality in the Ha Thanh River, the Thi Nai lagoon and subsequently the beach and marine environment.

Impact

82. The investment will have limited environmental impacts due to construction and operation of the WWTP which is located in proximity to residential areas and agricultural land. The construction impacts would be due to earthworks, transportation of construction materials, and landfilling for foundation and facility construction. During operations of the WWTP, the impacts would be due to sludge disposal from the plant, septage collection and treatment at the plant site, and potential effects from application of disinfection. Also, immediately around the WWTP, the air quality would be affected due to the odor arising from the operations of the plant.

83. Wastewater treatment is new for the city, but the CEPT technology has been chosen under the GEF grant to meet the national environmental standards at acceptable costs. Given the projected population and economic growth in Quy Nhon city, and considering the sensitive area where the WWTP will be located, secondary treatment technology has been designed. The Vietnamese wastewater effluent standard (TCVN 7222-2002) will be met through the proposed treatment as the wastewater is discharged in the Ha Thanh River.

84. Hydraulic modeling of the quality of the receiving water body has been conducted for all three technology options considered for secondary treatment (facultative pond, trickling filter, and oxidation ditch). The modeling outcomes have been compared with the Vietnamese Standards TCVN 5942-1995, which is the standard that specifies parameters limits and maximum allowable concentrations of contaminants in surface waters. While the wastewater treatment effluent standards will be met, the result of water quality modeling shows that coliform standards in surface water – under low tide conditions - will be met at a distance of 3 km from the CEPT discharge point. Provisions for a future disinfection facility should be included in the design of the WWTP based on the results of coliform monitoring included within the GEF project design.

Mitigation

85. The potential negative impacts will be mitigated through an environmental management plan (EMP) prepared in compliance with OP 4.01 on EA, approved by the Bank and disclosed in country and at the InfoShop in May 2008. The EMP includes mitigation measures, monitoring plan and institutional responsibilities for its implementation, and a capacity building program for environmental management. Mitigation measures will be included in construction contracts, and construction management consultants (CMC) will be required to supervise the implementation of mitigation measures by the contractors and reports to the PMU.

86. PMU will arrange for the monitoring of EMP implementation and will prepare environmental compliance progress reports submitted to IDA and copied to DONRE. An independent environmental monitoring consultant will be hired to assist the PMU in this task. During the operation stage of the WWTP, the Water Supply and Drainage Company will be responsible for implementing the EMP.

87. *OP4.04, Natural Habitats.* The project will not involve any conversion of natural habitats. Calculation of the WWTP effluent dispersion shows that the project will not have adverse impact on the Thi Nai lagoon because the quality of the WWTP effluents in all options including operational failure and maintenance will not be exceeding the baseline quality of the lagoon, although exceeding the national standards in some cases. Nevertheless, the EMP includes a monitoring requirement for water quality in the Lagoon near the river mouth. Thi Nai lagoon is a wetland with intensive aquaculture and fisheries. The lagoon is being proposed for a marine protected area.

88. *OP4.11, Cultural Resources.* Cultural property exists in the project site as graves and a shrine. The graves will be moved and the shrine will remain in the buffer zone as agreed with the local communities. Compensation will be paid to households for the removal of the graves. For the shrine, construction will be avoided during the festival season and trees will be planted to make the wastewater treatment plant less conspicuous.

6. Safeguard policies

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment (OP/BP 4.01)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Natural Habitats (OP/BP 4.04)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pest Management (OP 4.09)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Physical Cultural Resources (OP/BP 4.11)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Involuntary Resettlement (OP/BP 4.12)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Indigenous Peoples (OP/BP 4.10)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Forests (OP/BP 4.36)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Safety of Dams (OP/BP 4.37)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Projects in Disputed Areas (OP/BP 7.60)*	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Projects on International Waterways (OP/BP 7.50)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

89. *Public consultation.* Public consultation was conducted during the preparation of the CCESP and later, separately for the CEPT project. Three public meetings and one workshop were held during June and September 2006 to discuss environmental and resettlement issues. Both the Project-Affected Households (PAHs), the Nhon Binh ward People's Committee and the Fatherland Front had no further environmental concerns, other than the ones covered in the EIA report, and expressed full support to the project.

90. *Public disclosure (BP 17.50).* The Bank's disclosure requirements have been followed. All drafts of the EIA, and RAPs, were disclosed in Washington DC and in Vietnam Development Information Center (VDIC) in Hanoi before January 15, 2008. The Vietnamese translations were disclosed from January 14, 2008 at Nhon Binh ward People Committee and the PMU office accessible to local NGOs and project affected people. All final versions were disclosed by May 21, 2008.

* By supporting the proposed project, the Bank does not intend to prejudice the final determination of the parties' claims on the disputed areas

7. Policy Exceptions and Readiness

91. The project has not required any exceptions from Bank policies. All readiness criteria have been met: fiduciary (financial management and procurement) arrangements are in place; project staff and consultants are mobilized; counterpart funds have been budgeted; tender documents for first year procurement are under preparation; disclosure requirements have been met; and a resettlement plan is in place.

Annex 1: Country and Sector or Program Background
VIETNAM: VN-GEF-Coastal Cities Project

Country Partnership Strategy (CPS)

1. The new World Bank Group Country Partnership Strategy (CPS), which was discussed by the Board in February 2007, is fully aligned to Vietnam's 10th Socio-Economic Development Plan (SEDP). The SEDP sets out four broad objectives, which in turn are the organizing principles of the CPS:

- a) Improve the business environment;
- b) Strengthen social inclusion;
- c) Strengthen natural resource and environment management; and
- d) Improve governance.

2. The CPS describes the Bank's support for each objective. The project supports Pillar 3 – Strengthening Natural Resources and Environmental Management - of the CPS. In particular the project contributes to reducing environmental degradation for livelihood security through improved wastewater treatment.

Background

A. General

3. Sanitation in Vietnam is predominantly a private good with the majority of households investing in septic tanks or latrines, depending on location. There are currently a limited number of wastewater treatment plants in the country, all of them in the major cities. As a result, the watercourses are severely polluted by liquid wastes.

4. This situation will be further exacerbated by urban growth in the country. The proportion of people living in urban areas in Vietnam is one of the lowest in East Asia, comprising around 23% of the total population, or 19 million people and this is anticipated to increase due to migration from rural areas and the higher incomes available in urban areas.

B. Current Situation - Sanitation

5. The country's urban sewerage policy is presented in the Decree 88 approved by Vietnamese Prime Minister on May 28, 2007. The policy is to: a) provide the guiding principles, rights and obligations of organizations and individuals and households involved in sewerage activities in Vietnam; b) define sector accountabilities; c) provide planning principles, directions and indications on standards; d) regulate investments and selection of operations and management entities; and e) provide the principles of determination of wastewater tariffs by introducing the principle of full cost recovery to ensure operation and maintenance of sewerage services. The policy aims to ensure that all urban areas should have suitable water drainage

systems and wastewater treatment facilities that guarantee environmental hygiene and address flooding issues.

6. Various targets for wastewater treatment have been promulgated by the Government, including through the Vietnam Development Goals and the 2010 environmental strategy, issued in December 2003. Whilst not always consistent in their target values, they do indicate a keen awareness in Government about the importance of improved sanitation.

7. Based on the Vietnam Living Standards Survey (VLSS) the Central Statistical Office (CSO) estimated the following levels of urban sanitation coverage:

Access to hygienic latrines	Year 1993	Year 2004	Year 2010
Urban coverage	45	76	100

8. Environmentally acceptable sanitation facilities in urban areas are generally unavailable. Under existing regulations, human waste should be treated in septic tanks before being discharged to the sewer. While around 40% of households in provincial towns have septic tanks, only a small portion of these septic tanks is connected to sewers or drains. In many urban areas, septic tank effluent or seepage contaminates the groundwater. For example, less than 65% of the Ho Chi Minh City's (HCMC) population has septic tanks and "gray" domestic water is not treated. Only 50% of the existing septic tanks in HCMC are reportedly designed and constructed properly and most of them have not been regularly subjected to solids removal. This situation is likely to be replicated in other cities.

9. Whilst the provision of latrines and sanitation infrastructure brings improved outcomes, these are significantly increased when beneficiaries are exposed to IEC on household sanitation practices. Such IEC also generates demand for household sanitation facilities and should be considered as complementary to any physical sanitation investments.

10. Urban wastewater and storm waters are typically discharged through combined systems to nearby watercourses, without treatment. Large sections of these combined networks, constructed decades ago, need rehabilitation due to lack of maintenance and flooding is common in urban centers. Many drains were constructed without adequate grades for self-cleansing and there are often no design provisions for odor control or dry weather flow. The untreated sewage and industrial wastewater is discharged directly into water bodies and streams in the surrounding areas and pose high risks to aquatic ecosystems.

11. Most of the government attention is being given to sewerage and drainage investments. Consequently, the coverage of wastewater treatment is virtually zero. However, the government is taking action and the biggest cities Hanoi, HCMC, Haiphong, Danang, and Halong have, or will have sewerage and sewage treatment facilities in place in the next few years. The project

city is in the next tier of government focused activity being relatively large and, importantly, is a tourist destination for both national and, increasingly, international visitors.

C. Institutions

12. As part of the IDA funded CCESP the wastewater services in Quy Nhon are provided by a new combined water and wastewater company. The institutional development of the new company is being supported through a significant capacity building grant provided by the Japanese Government. Management of the GEF financed plant will benefit from this complementary activity.

D. Cost recovery and investment

13. Local governments understand the need to recover costs through user fees. For example Hanoi and Haiphong levy a drainage and wastewater surcharge of 15% of the water bill which results in fees ranging from VND 450 to VND 1,275 per cubic meter for domestic and commercial consumers respectively. Da Nang charges between VND 300 per cubic meter (domestic) and 500 VND per cubic meter (commercial/tourism) and Ha Long and Cam Pha have a tariff based on customer category ranging from VND250 to VND500 per cubic meter. HCMC has wastewater tariffs of between VND300 and VND950 per cubic meter depending on consumption level and customer category. All these cities plan to increase wastewater charges gradually to achieve recovery of O&M costs, and depreciation of short lived assets, by 2006 – 2009.

14. There are significant investment needs for the sector to cover both the rehabilitation of existing systems and the expansion of new systems for sanitation. The government has estimated that to address the investment needs for urban sanitation about US\$ 3.8 billion would need to be spent between 2000 and 2010. Combined investment in the urban water supply and sanitation sector has totaled some \$1billion over the last 10 years, most of which has been used for water supplies, indicating the large shortfall in investment funding in the sanitation sector.

Annex 2: Major Related Projects Financed by the Bank and/or other Agencies

VIETNAM: VN-GEF-Coastal Cities Project

Sector Issue	Project	Latest Supervision (ISR) Ratings (Bank-financed projects only)	
		Implementation Progress (IP)	Development Objective (DO)
Bank-Financed			
Deterioration of water supply systems and institutional weakness (completed)	Water Supply Project (Cr. N0260)	S	S
Deterioration of sanitation systems and institutional weakness (ongoing)	Three Cities Sanitation Project (Cr. 3211)	S	MS
Deterioration of sanitation systems and institutional weakness (ongoing)	Ho Chi Minh City Environmental Sanitation Project (Cr. 3475)	MS	MS
Lack of access to infrastructure and tenure insecurity in urban poor areas	Urban Upgrading Project (Cr.3887)	MS	MS
Lack of access to water supplies, deterioration of water supply systems and institutional weakness (ongoing)	Water Supply Development Project (Cr.4028)	U	U
	Red River Delta Rural Water Supply and Sanitation Project (Cr. 4115)	MS	MS
Pollution in urban environment and deterioration of river and coastal ecosystems	Coastal Cities Environmental Sanitation Project (Cr 4253)	S	S
Other Development Agencies			
Deterioration of infrastructure and institutional weakness	ADB: Credit to improve water supply in seven medium cities (ongoing) and eight towns and medium cities (planned).	n/a	n/a
	SDC: Grant to enhance development of Dong Hoi City, including SWM and drainage activities (ongoing)	n/a	n/a
	GTZ/KfW: Financial assistance for	n/a	n/a

	wastewater collection and treatment in six cities, including TA for institutional strengthening (ongoing)		
	AusAID: Grant to improve water supply in three small towns (ongoing); Grant for five Mekong Delta provinces rural water supply and sanitation	n/a	n/a
	DANIDA: Grant for sanitation in two provincial towns (ongoing). Co-financing with World Bank on water and sanitation projects in Quang Ninh (ongoing)	n/a	n/a
	Finnida: Co-financing for sanitation project in HaiPhong (ongoing); Grant for small town water supply and sanitation program in four provinces (on-going)	n/a	n/a
	JBIC: Soft loans for drainage and sewerage in Hanoi and HCMC (ongoing)	n/a	n/a
	French Government: small rehab projects in several cities and provinces (mostly completed)	n/a	n/a
	GTZ: Grants for sanitation in Viet Tri town (on going)	n/a	n/a

IP/DO Ratings: HS (Highly Satisfactory), S (Satisfactory), U (Unsatisfactory), HU (Highly Unsatisfactory)
n/a – not applicable

Annex 3: Results Framework and Monitoring
VIETNAM: VN-GEF-Coastal Cities Project

Results Framework

PDO	Project Outcome Indicators	Use of Project Outcome Information
The Project Development Objective (PDO) is to demonstrate an innovative waste water treatment technology to reduce the discharge of pollutants from the city of Quy Nhon in a financially and environmentally sustainable manner.	<ul style="list-style-type: none"> • Quantity of BOD removed by the treatment process • Quantity of SS removed by the treatment process • Quantity of nutrient (N and P) removed by the treatment process • Volume of treated wastewater • Number of HH connected to the CEPT plant 	Track the performance of the wastewater treatment system and confirm the reduction in contaminants loads entering the aquatic environment.
Intermediate Outcomes	Intermediate Outcome Indicators	Use of Intermediate Outcome Monitoring
Component 1 Construct and operate the Chemically Enhanced Primary Treatment Plant (CEPT)	Completion stages of the CEPT plant	Works have been executed and the plant is operating properly
Component 2 Raise public awareness Promote replication of project achievements	Number of recipients of the public communication campaign (including participants in workshops and education programs) <ul style="list-style-type: none"> • Number of papers published in the website and/or disseminated • Number of local city to city learning events to promote replication 	Track understanding of project's benefits and consequent acceptance Track other applications of the project
Component 3 Monitoring and Evaluation	<ul style="list-style-type: none"> • Baseline information established • Monitoring reports on outcome indicators produced • The funds have been disbursed 	Effective M&E has been established and allows PMU to track success and necessary adjustment

Arrangements for results monitoring

Project Outcome Indicators	Baseline	Target Values						Frequency and Reports	Data Collection and Reporting	
		2008	2009	2010	2011	2012	2013		Data Collection Instruments	Responsibility for Data Collection
Quantity of BOD removed by the treatment process	Baseline information to be established in the first year of project implementation	0	0	0	0	95% removal rate	95% removal rate	Semiannual Reports	E&M Plan	Quy Nhon Municipal Sewerage Company
Quantity of SS removed by the treatment process	Baseline information to be established in the first year of project implementation	0	0	0	0	95% removal rate	95% removal rate	Semiannual Reports	E&M Plan	Quy Nhon Municipal Sewerage Company
Quantity of N and P removed by the treatment process	Baseline information to be established in the first year of project implementation	0	0	0	0	85% removal rate	85% removal rate	Semiannual Reports	E&M Plan	Quy Nhon Municipal Sewerage Company
Volumes of treated wastewater	0	0	0	0	0	3,500 m3/day	7,000 m3/day	Semiannual Reports	E&M Plan	Quy Nhon Municipal Sewerage Company
Number of households connected to the CEPT plant	0	0	0	0	0	6,000	12,000	Semiannual Reports	E&M Plan	PMU

Intermediate Outcome Indicators										
Completion stages of the CEPT plant		Design completed	Site clearance and preparation	Initiate facilities construction	75% completed	100% completed	CEPT Plant in operation	Annual reports and Bank missions	Construction Reports E&M Plan	PMU
Number of workshops	0	0	0	0	0	1	1	Annual reports and Bank missions	E&M Plan	PMU
Number of publications and presentations	0	0	0	tbd	tbd	tbd	1	Annual reports and Bank missions	E&M Plan	PMU
Number of city to city learning events	0	0	0	0	0	1	1	Annual reports and Bank missions	E&M Plan	PMU

Annex 4: Detailed Project Description
VIETNAM: VN-GEF-Coastal Cities Project

1. The project will assist the Government of Vietnam to introduce pollution control measures in the City of Quy Nhon and to demonstrate, test and promote replication of innovative ways to reduce land based marine pollution. The GEF project is an integral part of, and partially blended with, the IDA financed Coastal Cities Environmental Sanitation Project (CCESP) which together will achieve the development objective. The IDA project will finance the construction of drains, sewers and some wastewater treatment in the core urban areas in the city of Quy Nhon, along with project management and service provider capacity building activities. The wastewater plant financed by GEF will treat the household liquid wastes collected by sewers financed by IDA in a part of the city. The total cost of the complementary IDA financed activities is US\$19.01 million and is described in detail in the Project Appraisal Document (Report No: 34507-VN). The specific GEF financed activities are summarized below.

Component 1: Construction of Chemically Enhanced Primary Treatment Plant (CEPT).

2. The GEF funds will support the establishment of a Chemically Enhanced Primary Treatment (CEPT) plant with a trickling filters secondary treatment. The treatment facility will be created through a phased investment of which GEF funds cover the first sub-phase. A modular design has been adopted in order to facilitate future expansions of capacity. Both designed layout and land made available for the treatment facility are considering the future expansion of the capacity. The first sub-phase funded through GEF financing will cover about 12,000 households (60,000 people) with a capacity of 7,000 m³/day.

3. The selection of CEPT plus trickling filters has been the result of a feasibility study which carried out a comparative analysis of various alternatives for the secondary treatment. Among the alternatives considered were facultative ponds, aerated lagoons and oxidation ditches. The study has showed that CEPT is the most effective technology for the removal of nutrients from wastewater with an efficiency ranging between 70 and 90%, whereas for conventional primary + biological treatment only 20—30% phosphorus is generally removed. Phosphorus is typically the limiting nutrient in fresh waters and nitrogen is typically the limiting nutrient in seawater. Either may be limiting in brackish water. Both phosphorus and nitrogen stimulate algal growth and the subsequent algal decomposition provides a new source of BOD. Considering the above CEPT was selected as the most appropriate approach to tackle the issue of improving the health and habitat conditions of globally significant marine and coastal ecosystem.

4. The above-mentioned secondary treatment alternatives were evaluated on the basis of both qualitative and quantitative criteria, seeking to select the most reliable and simple technology, which operates at the lowest O&M cost. Of particular concern was the ability of the selected alternative to achieve the Standard TCVN 7222 wastewater discharge requirement. Although the facultative ponds are acknowledged to be the simplest technology, appropriate for use in Vietnam, this technology can not achieve the mandated TCVN 7222 discharge limitation. In addition, the space requirement for facultative ponds exceeded the available land. Among the alternatives considered, Trickling Filter secondary treatment technology was ranked the highest

in terms of meeting the overall evaluation criteria. While requiring the least amount of land area for implementation, it also had the lowest calculated electrical power consumption. It provides both relative simplicity in operation as well as high reliability in performance. The recommended trickling filter secondary treatment technology will require minimal mechanical/electrical components, coupled with the lowest electrical power consumption of the feasible secondary treatment being considered.

5. The site for the CEPT has been carefully selected through a process of public consultation that involved local authorities, local communities and civil society. In consultation with the City of Quy Nhon specific criteria were established and each alternative site weighed according to those criteria. Criteria included: land availability, distance from built-up areas, adequacy of the site in terms of present and future needs, absence of physical constraints and proximity to sites for discharging treated water. Other sites, initially considered to be included in the project, were not selected due to the conflicts over land use or technical implementation difficulties.

Primary Treatment Process

6. The Chemically Enhanced Primary Treatment make use of anaerobic primary sedimentation ponds, which will carry out several key primary treatment and sludge management functions within the same process. In addition to providing a quiescent environment for settling of the chemically enhanced wastewater, the anaerobic primary sedimentation ponds will provide anaerobic digestion of volatile content of the settled sludge, creating a more stabilized (and less odorous) material. On a frequency of every two to four years, one of the two anaerobic primary sedimentation ponds will be drained during the dry season to depth of one meter, with the resulting settled sludge then dewatered/dried in-situ, and finally composted in-situ on the concrete floor bottom of the pond, before being removed for use as an agricultural soil amendment. The long-term storage of the sludge in the anaerobic primary sedimentation pond ensures a high-degree of stabilization of the sludge. Most importantly, the entire primary treatment process, inclusive of sedimentation, sludge stabilization, sludge dewatering and sludge composting require no power, chemical and minimal manpower to achieve, which is consistent with the expressed needs of the end-user.

Secondary Treatment Process

7. Cascade aeration (mechanical), trickling filters and (mechanical) secondary sedimentation tanks. Cascade aeration is utilized in conjunction with the primary treatment alternative of Anaerobic Primary Sedimentation Ponds to pre-aerate the effluent wastewater from the anaerobic ponds, prior to entering the trickling filters. This pre-aeration minimizes odor problems which can occur when septic or low dissolved oxygen content wastewater enters the trickling filter system. Cascade aeration operates on the basis of surface air transfer by means of mixing created from water falling down a series of step (cascades). The cascade aerator would utilize available hydraulic head between the primary and secondary treatment system, thus would provide aeration without power cost. The effluent from the cascade aerator would enter the trickling filter system, first being pumped to the top of the trickling filter, falling through the plastic filter media and eventually entering the secondary clarifier tank, where the clear treated water is separated from the organic sludge, which settles to the bottom of the secondary

sedimentation tank. A mechanical scraper mechanism pushes the settled sludge to a hopper in the bottom of the secondary sedimentation tank, from which it is withdrawn by pumping to the inlet receiving structure, where it is blended with the raw influent wastewater and is co-settled in the primary sedimentation tanks. Most importantly, this solution requires no chemical, minimal power and average skilled manpower to operate, which is generally consistent with the expressed needs of the end-user.

Description of Disinfection

8. Although not envisaged by the current regulation the project has included an analysis for the future provision of disinfection facilities. The technology selected makes use of chemical agents. Specifically, the sodium hypochlorite (NaOCl) has been recommended as disinfectant for the CEPT facility since it minimizes safety issues regarding handling. Sodium hypochlorite (NaOCl) is produced in Vietnam and delivered in liquid form. Coliforms will be monitored under the GEF project. Space is provided on the treatment plant site for additional disinfection treatment if found necessary. Design criteria are summarized in the table below:

Description	Unit	Phases		
		Phase 1A 2013	Phase 1B 2018	Phase 2 2023
Design Population	number	58,000	117,000	175,000
Per capita flow	lpcd	120	120	160
Design flow	m ³ /day	7,000	14,000	28,000
Peak flow	m ³ /day	14,000	28,000	56,000
Per capita load BOD5	gpcd	40	40	50
Design total organic load BOD5	kg/day	2,320	4,680	8,750

Component 2: Public Communication and Replication Strategy.

9. The communication strategy aims to broaden the public consensus and support to the project and to promote dialogue within the management units and between institutions and citizens.

Technical Conferences

10. Technical presentations of papers and project's achievements at national and regional conferences provide an excellent means for efficient dissemination of information to a potentially large group of people sharing a common interest. The choice of conference type and venue is important in terms of targeting the desired audience, both in terms of size and interest level. In Vietnam several conferences are held which would be appropriate for dissemination of CEPT WWTP Project information, most notably the Vietnam Water and Sewerage Association (VWSA) conference, which is held annually.

Workshops

11. Conducting workshops to present findings of the CEPT WWTP to interested invited attendees will be another means to disseminate Project information in a meaningful way. Workshops are particularly effective if the attendees actively participate in the proceedings and have common interests in the findings presented, such as the intention to implement wastewater schemes in other locations in Vietnam or the region.

Publishing Papers in Technical Publications

12. Publishing papers in technical publications will facilitate the dissemination of Project information to a wide audience. A technical publication could potentially reach multiple recipients, further enlarging the base of dissemination. Technical publications closely focus on their target audience, giving the writer the opportunity to communicate with a highly technical and receptive audience. At least one technical paper regarding technical features of the CEPT WWTP Project will be published in a national (or international) publication. The content of the two papers will include: first, an overview during implementation; and second, the working experience with the actual operation of the CEPT WWTP.

Establishing Project Website

13. An internet website on which relevant Project data are posted, along with appropriate GEF links will be designed and implemented. Papers presented at conferences, summary of workshops and papers published on national publications will all be included within the website, as they will serve to foster improved understanding of the Project's intentions and allow the public to consider the use of CEPT WWTP for their own applications in other locations. The website should also include other publications regarding CEPT projects elsewhere.

Replication Strategy

14. The replication strategy will target potential candidates for which the CEPT WWTP is able to provide similar benefits in terms of reduction of land-based pollutant contaminants to international waters. The potential candidates for replication in Vietnam include all coastal cities, as well as inland cities that discharge to rivers flowing into international waters. In order to be eligible to replicate the project, these cities should have a potential for connected service population of at least 100,000 people, as this is the population base that allows an economy of scale suitable for efficiently operating and maintaining the CEPT WWTP, once implemented.

15. The replication strategy will also include the GEF IW:LEARN program and its objective of strengthening the International Waters (IW) management by creating a IW community and facilitating learning and information sharing among IW projects, partners and stakeholders. The program achieves such goal by: facilitating access to information about transboundary water resources; offering structured learning; organizing biennial International Waters Conferences; testing innovative approaches to IW implementation; fostering partnerships. This project will be included in the GEF IW:LEARN network and UNEP best practice database as routes to increase the success of its replicability.

Component 3: Project Management, Monitoring and Evaluation

16. The GEF project M&E system will complement and feed the M&E and the MIS mechanisms already established by the IDA project. These mechanisms will focus on collecting and monitoring specific information related to inputs, outputs and outcomes of the CEPT plant. The M&E will cover the cost of the baseline data collection, of the periodic measurements, and the feeding of this data into the IDA project MIS. The types of costs covered are: (i) cost of consultants, (ii) equipment and (iii) operational cost of the CEPT M&E. Most of the functions to implement this component are already in place within the PMU, which has been functioning for over a year.

17. Sampling, data collection, and data elaboration will be outsourced in one TA contract. The PMU will coordinate with the consulting firm the site specific indicators needed for monitoring the performance of the CEPT plant. The project will use the current Coastal Cities Environmental Sanitation Project PMU, which is already successfully implementing that project. Likewise construction supervision, auditing, independent safeguards monitoring and all other aspects of project management for the GEF project will be provided by consultants hired under CCESP by the PMU.

Annex 5: Project Costs

VIETNAM: VN-GEF-Coastal Cities Project

1. The project costs and financing are shown below with the following breakdown: cost and financing by components; and cost as per the expenditure category of the Grant Agreement for GEF financing. Contingencies have been included in the project and they apply only to civil works.

Project Cost and Financing by Components					
Component Description	Cost			Financing	
	Local	Foreign	Total	GEF	Co-financing
Component 1 Construction of a chemically enhanced treatment plant (CEPT)	3,001,393	2,000,929	5,002,322	4,500,000	502,322
Resettlement and Site Clearance	1,602,678	0	1,602,678	0	1,602,678
Component 2 Public Communication and Replication Strategy	350,000 ¹	0	350,000	350,000	0*
Component 3 Project Implementing Support	150,000	0	150,000	150,000	0*
Taxes	395,421	171,529	566,950	0	566,950
Total for GEF Project	5,499,492	2,172,458	7,671,950	5,000,000	2,671,950

*Co-financing will be provided through the project Management expenditures to (\$603,000) to be incurred through the CCESP, which is blended with GEF operation.

Expenditure Category as per Grant Agreement		
Expenditure Category	Amount of GEF Grant Allocated	Percentage of Expenditure to be financed (inclusive of taxes)
Works: for construction of CEPT	4,500,000	90%
Workshop and training: for activities to be carried out for Component 2	150,000	100%
Consulting services: consultants required for Components 2 and 3	350,000	100%
Total	5,000,000	

2. The GEF project (US\$ 7,671,950) is integrated with the IDA financed CCESP project which for the Quy Nhon area is expected to cost \$ 19,012,938. Thus, the combined cost of the integrated project is US\$ 26,684,888. The breakdown for the CCESP project in the Quy Nhon area is shown the following table.

¹ Including consulting services estimated to cost \$ 200,000

**IDA financed CCESP
Project Cost (US\$)**

Project Management	603,000
Wastewater Collection System	9,471,438
Secondary Lines	3,000,000
Phu Hoa wastewater treatment plant	3,776,250
Bau lac wastewater treatment plant	2,162,250
Total:	19,012,938

Annex 6: Implementation Arrangements
VIETNAM: VN-GEF-Coastal Cities Project

1. The implementation of the GEF project will rely on the arrangements established for the implementation of the IDA financed Coastal Cities Environmental Sanitation Project. The following implementation arrangements were put in place:

Overall Implementation Arrangements:

2. At the national level the Ministry of Planning and Investment (MPI) which provides overall guidance on investment policy will supervise and monitor progress. For sector-specific and technical issues, MPI will consult the Ministry of Construction (MoC), which is responsible for urban sector sanitation policy and technical standards, and with Ministry of Natural Resources and Environment (MONRE) which is responsible for environmental standards and policy.

3. The project will be implemented by the Quy Nhon Project Management Unit (PMU) established under the IDA project. The PMU report to the Provincial Peoples Committee (PPC), and are supported by consultants, by provincial and city level departments, and by a Project Steering Committee (PSC). The PMU structure includes one director, deputy director and relevant professionals.

4. During project implementation, the Quy Nhon PMU should coordinate and work directly with the related departments. However, if there are matters which cannot be resolved then the PMU will seek direction from the PSC. The PSC is led by the Chairman (being the Chairman or Vice Chairman of the Provincial PC) with assistance from the related departments: DPI, DoF, DoNRE, DoC, DoE and the City PC. The service providers will have representatives in the PSC to help the PMU implement the project components relating to their technical expertise. PSC is generally in charge of solving problems in project implementation.

5. The more specific roles of the various agencies are summarized as follows:

(a) *Provincial People's Committee (PPC)* approves the project documents after consulting relevant departments including the investment project, resettlement plan, technical design file and total estimate, bidding plan, bidding documents and bid results.

(b) *Department of Planning and Investment (DPI)* cooperates with the departments concerned to advise the PPC on the implementation plan, project funding structure, and plan for annual funding requirements according to project progress. It also supports the PMU in assessing technical reports, bidding documents, bid results and submissions to PPC for approval.

(c) *Department of Construction (DoC)* supports the PMU and evaluates the technical design file, construction estimate and total estimate to be submitted to PPC. It also supports the PMU in managing the construction quality.

(d) *Department of Finance (DoF)* cooperates with DPI to balance and allocate annual budget to the project for PPC approval. It also assesses the compensation price for site clearance and submits to PPC for approval.

(e) *Department of Natural Resources and Environment (DoNRE)* support the PMU on legal procedures and the processes of evaluating and approving environmental impact assessment, and managing environmental impacts. They also advise PPC on granting land and clearing site for the project.

(f) *Department of Education (DoE)* supports the PMU in the implementation of the school sanitation activities to ensure demand from the schools, and that the proposed facilities meet with DoE standards.

(g) *Municipal People's Committee (MPC)* advises PPC on allocating land, clearing site and resettlement for the project and directs the compensation, site clearance and resettlement activities of the project.

(h) *Service providers* provide information to the PMU on current technical and financial arrangements, and coordinate with the PMU and its consultants on all issues related to planning and implementation of the project.

(i) *Quy Nhon Project Management Unit (PMU)*: will manage all issues related to project implementation for activities for which they are responsible. Their activities will include, but not be limited to, the following:

- financial management of the sub projects;
- addressing issues related to sub project planning and implementation;
- preparing activities for land acquisition;
- reporting on progress on all aspects of project implementation – physical progress, financial, environmental, social, and institutional;
- co-ordination with other sectors and departments of the Province or city;
- management of the bidding process and selection of contractors or consultants, including bid invitation, bid evaluation and contract drafting;
- organizing annual financial audits of the special accounts and service providers, as appropriate; and
- organizing the monitoring of implementation of EMPs and RAPs.

Annex 7: Financial Management and Disbursement Arrangements
VIETNAM: VN-GEF-Coastal Cities Project

A. Country Issues

1. The 2007 CFAA assessed the financial management risk to proper use, control and reporting of funds that are managed through the Vietnam public financial management (PFM) systems is Moderate. The public accounting system and financial management arrangements are well-documented and regulated, but financial management risks arise from gaps and overlaps in the systems, and more particularly risks arise from weaknesses in implementation and compliance gaps. The CFAA found that key challenges in the PFM systems remain in the areas of: (i) expanding budget coverage in line with internationally accepted norms; (ii) implementing the new government Chart of Accounts and the Treasury and Budget Management Information System with strengthened internal controls (including internal audit) and streamlined business processes; (iii) implementing more comprehensive accounting and timely financial reporting based on internationally recognized standards and practices; and (iv) expanding audit coverage and quality, and legislative oversight of PFM. Strengthening strategies and implementing action plans to enhance capacity and accountability for public financial management in line ministries and agencies at all levels of government is a priority area for action.

2. Many developments and reforms in public financial management such as streamlining of business processes, strengthening of expenditure and revenue internal controls, and enhancing monitoring and oversight of budget development and execution are in progress, and a gradual strengthening of PFM is taking place. The implementation of the 2004 PER-IFA and 2007 CFAA recommendations are being supported by the PRSC program and grant funds. The reforms are having a positive impact on the overall PFM environment, but specific improvements in systems have not yet led to full integration of Overseas Development Assistance into the overall PFM framework. The priority is for substantive implementation of the improvements and enhancements that have been and are being progressively introduced through legislative reforms and development work in recent years.

B. Risk Assessment and Mitigation

3. The inherent risk to the project from the financial environment is assessed **moderate**. The project specific control risk taking into account the risk mitigation measures that are to be implemented for the project is assessed as **moderate**. Overall FM risk is **moderate**.

Risk	Risk Rating	Risk Mitigation Measures Incorporated into Project Design	Risk After Mitigation Condition of Negotiation, Board or Effectiveness
Inherent Risk			
Country level: Overall Fiscal Environment	Moderate	Capacity building in Medium Term Expenditure Framework (MTEF), and Public Financial Management reform with focus on planning and budgeting, implementation and monitoring, commitment control and debt management.	Moderate
Entity and Project level: Funds may not be used efficiently and economically and for purposes intended	Moderate	(i) Annual financial audit by external auditor, (ii) verification of project expenditure by the State Treasury	Moderate
Overall Inherent Risk	Moderate		Moderate
Control Risk			
1. Budgeting	Moderate	Funds are disbursed to a Designated Account opened at a Commercial Bank acceptable to the Bank whose signatories are PMU and MOF Further training to update FM personnel on new IDA requirements (if any) The project will use the same accounting system and policies which have been set up for IDA project The project will use the same accounting and reporting system which have been set up for IDA project The project will use the same accounting software which has been set up for IDA project	Moderate
2. Funds Flow	Moderate		Low
3. Staffing	Moderate		Moderate
4. Accounting Policy & Procedures	Moderate		Moderate
5. External Audit	Low		Low
6. Reporting & Monitoring	Moderate		Moderate
7. Information Systems	Moderate		Moderate
Overall Control Risk	Moderate		Moderate

C. Implementation Arrangements

Overall

4. The project will be implemented by Quy Nhon Project Management Unit (PMU) established under the IDA project. The PMU will be responsible for implementation of the project and will report to the PPC (represented by a Project Steering Committee (PSC) which is led by senior management of PPC with participated of the provincial department heads).

Staffing

5. A dedicated financial management function of the PMU has been established with financial staff having qualifications acceptable to IDA. Training of these staff has been carried out during the preparation of the IDA project. Financial management staffs also participated in the workshops relating to disbursement and financial management organized during 2006 and 2007 by the Bank. It is concluded that the financial management staffs have adequate capacity for Financial Management of the project.

Budgeting

6. For the project, the annual disbursement plan is prepared by the FM function which is linked with the physical work plan and procurement plan completed by the PMU. This plan will be approved by PPC and consolidated in the Province's budget. The procedures of budgeting have been adequately documented in the FM Manual of the project which has been established for the IDA project. It is assessed that the budgeting procedures and practices are adequate for the purpose of the project FM.

Accounting system and Internal Controls

7. The accounting system adopted in the PMU is the Accounting system based on Decision 214 of the MOF for Investment Projects which has been detailed by having additional sub-account codes for monitoring of expenses by components, categories and sources of funds. The policies of accounting and the internal controls have been adequately documented in the FM Manual which has been developed for the IDA project. The FM Manual will be frequently updated by the PMU to reflect changes in local and Bank regulations.

D. Fund flow and disbursement arrangement

8. The table below details the allocation of GEF grants as per the Grant Agreement.

<i>Expenditure Category</i>	<i>Amount In US\$ millions</i>	<i>Financing Percentage (inclusive of taxes)</i>
Works	4.500	90% of expenditures
Workshops and Training	0.150	100% of expenditures
Consulting Services	0.350	100% of expenditures
Total Costs	5.000	

Disbursement Methods

9. The project will use the following disbursement methods:

- *Reimbursement* - The Bank may reimburse the borrower for expenditures eligible for financing pursuant to the Grant Agreement (“eligible expenditures”) that the borrower has pre-financed from its own resources.
- *Advance* - The Bank may advance loan proceeds into a Designated Account of the borrower to finance eligible expenditures as they are incurred and for which supporting documents will be provided at a later date
- *Direct Payment* - The Bank may make payments, at the borrower’s request, directly to a third party (e.g., supplier, contractor, and consultant) for eligible expenditures.
- *Special Commitment*: The Bank may pay amounts to a third party for eligible expenditures under special commitments entered into, in writing, at the borrower’s request and on terms and conditions agreed between the Bank and the borrower.

The *Disbursement Deadline Date* will be four months after the Closing Date of the project.

Designated Account

10. A Designated Account is held in US dollar currency at commercial bank specified by the Government in terms and conditions acceptable to IDA. Payments out of the Designated Account are to be made for eligible expenditures in accordance with the Grant Agreement and Bank guidelines. The authorized allocation for Designated Account is US\$900,000. Replenishment applications from the PMU would be submitted monthly or when the account is drawn by 50% of the authorized allocation, whichever comes first. For withdrawal outside the Designated Account (application for direct payment or for issuance of special commitments), a minimum application value of 20% of the authorized allocation of the Designated Account will be observed.

Reporting on Eligible expenditure

11. Use of statements of expenditures (SOEs): for works costing less than US\$300,000 equivalent per contract; goods costing less than US\$100,000 equivalent per contract; services provided by consulting firms costing less than US\$100,000 equivalent per contract; services provided by individual consultants costing less than US\$50,000 equivalent per contract; withdrawals from the Credit Agreement would be made on the basis of statements of expenditures. These documents will be made available for the required audits, as well as to the Bank supervision missions upon request. All other expenditures above the SOE thresholds will be submitted on the basis of full documentation.

12. Application for direct payment: Contract and purchase records evidencing the eligible expenditure will be submitted together with Withdrawal application.

13. Application for reimbursement: Withdrawal applications for reimbursement of eligible expenditures will be submitted to the Bank with the same documentation as required for reporting of eligible expenditure paid from the Designated Accounts.

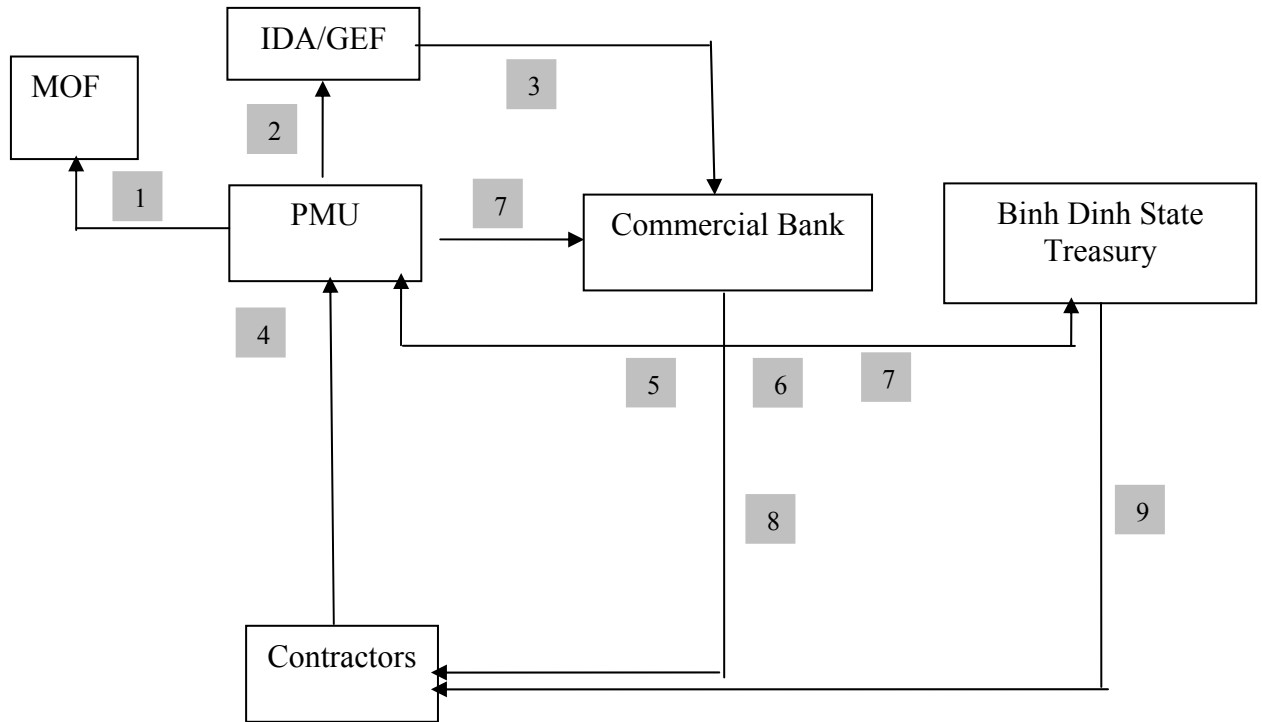
14. Special Commitments: the concerned commercial bank will provide its confirmation directly to the Bank that conditions for release of payments committed for withdrawal have been met.

Counterpart Funds

15. The budget for counterpart fund will be prepared by the PMU and sent to PPC for budget allocation. The counterpart funds will be made available for the Project at the Binh Dinh State Treasury.

Fund flows

Fund flow will follow the arrangement as for the IDA project



1. PMU prepares the withdrawing application and sends to MOF for co-signature
2. PMU sends application to IDA
3. IDA (on behalf of GEF) disbursed monies to the Designated Accounts of the PMU at commercial bank
4. Contractor submit certificates, invoices to PMU
5. PMU reviews, certifies and then submit to Binh Dinh State Treasury
6. Binh Dinh State Treasury checks, approves and send back to PMU
7. PMU sends the request for payments to the Binh Dinh State Treasury and commercial bank
8. The commercial bank makes payment to the Contractors (GEF funds)
9. Binh Dinh State Treasury makes payment to Contractors (Counterpart funds)

E. Reporting, Auditing and Supervision

Financial Monitoring Reports

16. No separate Financial Monitoring Reports (FMRs) are required for the Grant. In stead, the financial reporting will be incorporated in the quarterly FMRs which will be prepared and submitted to the Bank for the IDA project within 45 days of the quarter end with the contents and format agreed for the IDA

External Audit

17. No separate audit is required for the Grant. In stead the audit of the Grant will be incorporated into the audit of the IDA project with the arrangement agreed for the IDA project.

Supervision

18. The supervision will be done at the same time of the supervision for the IDA project which include review the project's financial management system, operations of Designated Account, internal controls, reporting and follow up of audit findings and mission's findings. The financial management supervision will be conducted by IDA's financial management specialist staff.

F. Strengths, weaknesses and risks

19. The strengths are:

- PMU was established with competent financial management personnel who have accounting background;
- The Accounting system (accounting policies, procedures and software) has been set up which is based on the accounting system under the Decision 214 of MoF; the Chart of Accounts are adequately structure to reflect the disbursement by sources, category, components; and
- The internal control procedures are in place and adequately documented.

20. The weakness is that since the IDA project has only recently started, the Financial Management staff may not have sufficient relevant experiences and familiarity with the Bank requirements on Financial Management and disbursement.

Annex 8: Procurement Arrangements
VIETNAM: VN-GEF-Coastal Cities Project

A. General

1. Procurement for the proposed project would be carried out in accordance with the World Bank's "Guidelines: Procurement Under IBRD Loans and IDA Credits" dated May 2004; and "Guidelines: Selection and Employment of Consultants by World Bank Borrowers" dated May 2004, and the provisions stipulated in the Legal Agreement. The various items under different expenditure categories are described in general below. For each contract to be financed by the GEF Grant, the different procurement methods or consultant selection methods, the need for pre-qualification, estimated costs, prior review requirements, and time frame are agreed between the Borrower and the Bank in the Procurement Plan. The Procurement Plan will be updated at least annually or as required to reflect the actual project implementation needs.

2. **Procurement of Works:** Works procured under this project would include site filling and consolidation of sub grade for the CEPT plant, construction and installation of the CEPT plant. In principle, works contracts estimated to cost equivalent to US\$2 million or above per contract would be procured through International Competitive Bidding (ICB) and below this threshold would be procured through National Competitive Bidding (NCB). For ICB contracts, either the Bank's Standard Bidding Documents for Works or for Supply and Installation of Plant and Equipment will be used depending on finalized technical nature of the contract. For NCB contracts, the procedures to be followed shall be those set forth in the national Procurement Law dated November 29, 2005 subject to further modifications and waivers in accordance with the provisions stipulated in an Annex to the Legal Agreement. Bidding documents for those NCB contracts shall follow the Model NCB Documents prepared by the World Bank Vietnam Office.

3. **Procurement of Goods:** At preparation stage, no goods contracts are envisaged. However, if need for goods arises during implementation stage, those goods would be procured based on the following procurement methods: goods contracts estimated to cost the equivalent of US\$150,000 or above would be procured through ICB; goods contracts below US\$150,000 each would be procured through NCB and very small valued goods would be procured through shopping provided the contract value does not exceed US\$30,000.

4. **Procurement of non-consulting services:** training and capacity building on project management and operation of CEPT plant, if self-organized by the PMU and will be included in the contract of the correspondent activity carried out under the IDA project. Other non consulting services related to the organization and/or participation in conferences, workshops and IW:LEARN activities would be procured using the procedures acceptable to the Bank on the basis of quality, efficiency and cost-effectiveness.

5. **Selection of Consultants:** Consulting services to be procured under this project would include construction supervision, monitoring and evaluation, replication strategy, environmental monitoring, training, capacity building, financial audit and dissemination activities. In general, consulting services would primarily be procured through Quality and Cost Based Selection

(QCBS). However, smaller consulting contracts which are estimated to cost below US\$100,000 per contract may be procured through either Selection Based on Consultants' Qualifications (CQS) (in case of consultant firms) or Individual Consultants (IC) (in case of individual consultants) depending on value, nature and complexity of assignments. Short lists of consultants for services estimated to cost less than US\$200,000 equivalent per contract may be composed entirely of national consultants. Requests for Proposals for consulting services will follow the Bank's Standard Request for Proposals.

B. Assessment of the agency's capacity to implement procurement

6. The Quy Nhon Project Management Unit (PMU) would be responsible for implementing procurement under the proposed project. This PMU has been established for a number of years for preparation and now implementation of the IDA-financed CCESP. The Quy Nhon PMU has good organization, qualified procurement staff, good knowledge and experience with Bank procurement rules and procedures (including complex methods such as ICB, NCB, QCBS). Accordingly, the procurement risk for the proposed project is rated as "medium". During preparation and implementation of the CCESP, the Bank and the Borrower had agreed on a number of specific actions to build up and strengthen the PMU's procurement capacity and performance and these actions have substantially completed. Since the PMU has benefited from these specific capacity building/strengthening actions, the only further action recommended for the proposed project is training and capacity building on project management and operation of CEPT plant, which is to be financed by the PHRD capacity building grant.

C. Procurement Plan

7. The Borrower has developed a Procurement Plan for the entire project implementation which provides the basis for the procurement methods. This plan (see the attachment) has been agreed with the Bank team during the appraisal. The agreed Procurement Plan will be made available in the Project's database and in the Bank's external website. The Procurement Plan will be updated in agreement with the Project Team annually or as required to reflect the actual project implementation needs.

D. Bank Review and Frequency of Procurement Supervision

8. The following contracts are subject to prior review by the Bank:
- all ICB contracts;
 - the first NCB contracts for goods and works;
 - all Terms of Reference for consulting services;
 - consulting contracts with firms estimated to cost equivalent US\$100,000 and above per contract;
 - consulting contracts with individuals estimated to cost the equivalent of US\$ 50,000 and above; and
 - consulting contracts procured using Single-Source Selection Procedures.

9. All other contracts shall be subject to post review by the Bank. It is also recommended to undertake one supervision mission per year to visit the field to carry out post review of procurement actions with a minimum coverage of 20%.

E. Details of the Procurement Arrangements Involving International Competition

1. Goods, Works, and Non Consulting Services

a) List of contract packages to be procured following ICB and direct contracting:

Ref. No.	Contract (Description)	Estimated Cost	Proc. Method	P-Q	Domestic Preference (yes/no)	Review by Bank (Prior / Post)	Expected Bid-Opening Date
CEPT 1	Construction and Installation of Equipment of the CEPT plant	US\$5,002,322	ICB	No	Yes	Prior	October 2010

* *Estimated cost doesn't include taxes*

b) ICB contracts for works estimated to cost above US\$2 million per contract and for goods contracts estimated to cost above US\$150,000 per contract will be subject to prior review by the Bank. All contracts procured through direct contracting will be subject to prior review by the Bank.

2. Consulting Services

a) Consultancy services to be carried out by firms estimated to cost US\$100,000 or above per contract, services to be provided by individual consultants estimated to cost US\$ 50,000 or above and all consultancy services procured using Single-Source Selection procedures, irrespective of value, will be subject to prior review by the Bank.

b) Short lists of consultants for services estimated to cost less than US\$200,000 equivalent per contract may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.

PROCUREMENT PLAN
GEF - CHEMICALLY ENHANCED PRIMARY WASTE WATER TREATMENT PLANT (CEPT)

Number of contract	Name of package	Nature of contract	Procurement Method	Estimated Cost USD	Bank review	Preparation, Approval of bidding document / RFP	Issue of bidding document/ RFP	Submission of bids	Evaluation of bids	Approval of bidding results	Signing of contract	Start of contract	End of contract	Source of funds
Civil Works														
CEPT 1	Construction and Installation of Equipment of the CEPT plant	Civil Works	ICB	5,002,322	Prior	06/10	07/10	09/10	11/10	01/11	02/11	04/11	04/14	GEF /Counterpart
Consulting Services														
CEPT 2	Monitoring and Evaluation	Consulting Services	QCBS	150,000	Prior	09/11	10/11	12/11	02/12	03/12	03/12	04/12	12/14	GEF
CEPT 3*	Replication strategy	Consulting Services	QCBS/ CQ	100,000	Post	07/10	08/10	09/10	10/10	12/10	02/11	03/11	04/12	GEF
CEPT 4*	Development and delivery of media materials and products	Consulting Services	QCBS/ CQ	100,000	Post	08/11	09/11	10/11	11/11	01/12	02/12	03/12	12/14	GEF
CEPT 5**	Conferences, workshops and services (e.g. IW:LEARN)	Consulting Services/ Workshops	CQS/ SOE	150,000	Post	12/11	01/12	02/12	03/12	05/12	06/12	07/12	12/14	GEF
CEPT 6	Supervision of construction and installation of CEPT plant	Consulting Services	Will be included in the contract of the correspondent activity carried out under the IDA project											IDA
CEPT 7	Technical and managerial training for the operation and maintenance of the CEPT plant	Consulting Services	Will be included in the contract of the correspondent activity carried out under the IDA project											IDA/PHRD
CEPT 8	Independent supervision – resettlement	Consulting Services	Will be included in the contract of the correspondent activity carried out under the IDA project											IDA
CEPT 9	Independent supervision – environmental safeguards	Consulting Services	Will be included in the contract of the correspondent activity carried out under the IDA project											IDA
CEPT 10	Independent auditing	Consulting Services	Will be included in the contract of the correspondent activity carried out under the IDA project											IDA
CEPT 11	Preparation of TORs for CEPT 2, 3, 4 and 5	Consulting Services	Will be included in the contract of the correspondent activity carried out under the IDA project											PHRD

* Final selection method will be confirmed in the updated procurement plan when TOR/cost estimates are finalized.

** This package includes various activities. Final packaging and procurement method will be confirmed in the updated procurement plan when TOR/cost estimates are finalized.

***Costs do not include taxes

Annex 9: Economic and Financial Analysis
VIETNAM: VN-GEF-Coastal Cities Project

1. The GEF Coastal Cities Project is an integral part of the CCESP and the analysis for Quy Nhon was already included in the CCESP. The following text and reported numbers are therefore identical to the relevant parts of the economic and financial analyses carried out for the IDA project. For purposes of the economic and financial analysis, presented below, the costs and benefits have not been updated as the analysis of the CCESP is considered as the base case appraisal. Full information is available in the project and background documents of the CCESP.

Financial Analysis:

2. The financial analysis assumes that wastewater tariffs will recover operating and maintenance costs, depreciation of short lived assets, such as vehicles and equipment, and any loan interest charges, by the end of the project. Currently tariffs do not cover these costs and they will therefore be increased gradually to allow the service providers to achieve the required levels of cost recovery before project implementation completion in 2014. The cost recovery schedule for the service provider has been agreed with local government and its implementation is a covenant of the IDA project.

Financing Arrangement and Fiscal Impacts:

3. The total counterpart funding requirements for the CCESP project is estimated at USD 38 million representing 22% of the total project cost. The total counterpart funding requirement for the project in Quy Nhon is US\$ 12 million. The counterpart financing will be provided by the provincial budget. Assessment of the financial performance of the provincial budget showed that they have the necessary counterpart funds for their project. The average annual counterpart fund required from Quy Nhon will be about VND 30 billion or about 5-6% of the current provincial total annual capital expenditure. During peak implementation periods counterpart funds will not exceed a manageable level 9% of the provincial capital expenditure budget.

Cost Recovery and Tariffs

4. The project, in line with government policy, will recover from user charges the O&M costs of the wastewater and depreciation of short lived assets, such as equipment. This allows for affordable tariffs and gives sufficient revenue to the service provider to operate the system and finance replacement of short lived assets. The wastewater tariffs will be levied as an amount for each cubic meter of water consumed. The wastewater tariffs will be increased annually during the implementation period so that subsidies to the Water Supply and Drainage Company can be eliminated before the project completion. In addition, the service coverage and tariff collection efficiency will be gradually improved to increase revenues to the service providers. The sanitation charges are set higher for commercial and industrial consumers to help ensuring affordability for domestic users, especially for low-income households.

5. The detailed financial projections demonstrate the possibility of eliminating subsidies during the project implementation period while keeping the charges affordable to households including poor families. The following table shows the proposed cost recovery tariffs for sanitation services for the city of Quy Nhon.

Calendar Year	2006	2007	2008	2009	2010	2011	2012	2013
Average wastewater tariff VND/m ³	126	258	462	776	1128	1514	1966	2260
Quy Nhon cost recovery (%)	NA	41	45	59	71	81	92	100

Affordability

6. The assessment of affordability is based on the combined costs of water supply, wastewater and solid waste charges using the above cost recovering tariffs. The monthly water and sanitation cost to households, including for low income families, still remain below the affordability level of 5% of low income households. The table below shows the affordability assessment (for combined water supply and sanitation services) for low income households.

Calendar Year	2006	2007	2008	2009	2010	2011	2012	2013
Quy Nhon water and sanitation cost as % monthly income of low-income households	2.3	2.4	2.4	2.5	3.1	3.2	3.2	3.1

Financial Internal Rate of Return (FIRR)

7. The FIRR for Quy Nhon project is 28.2% (wastewater) which is higher than the weighted average cost of capital of between 10-12%. The sensitivity analysis shows the FIRR of Quy Nhon City is sensitive to an increase in both O&M and capital costs and decrease in water demand. The impact of an increase in both O&M and capital costs for the wastewater reduces the FIRR to a value close to the weighted-average cost of capital (WACC). The service provider needs to strictly monitor construction and keep tight control of operating expenses during project implementation. The table below shows the results of the sensitivity analysis.

Scenario	Quy Nhon FIRR (%)
Base Case	28.2
10% increase in O&M cost	23.4
10% decrease in water consumption	18.5
10% increase in capital cost	23.8
10% increase in both O&M and	21.2
10% decrease in O&M cost	35.3
10% increase in water demand	32.8

Economic Analysis:

8. The economic analysis of the CCESP project is based both on least-cost analysis (LCA) and a cost-benefit analysis (CBA). A combination of these two approaches is necessary because of the uncertainties with CBA, particularly the difficulties with quantifying accurately some of the environmental benefits and local economic development benefits. These uncertainties arise either because of a lack of empirical data. As is the case in many environmental projects, it is very difficult to place a monetary value on environmental improvement, the general

improvement in public amenity, and the impact on local development. LCA has therefore been conducted throughout component selection and preliminary design, to ensure that the selected investments are the most economical interventions.

Least Cost Analysis:

9. The proposed investments under CCESP/GEF are the least cost solutions to achieve the project development objectives, whilst keeping tariffs affordable.

10. *Flood control, drainage and wastewater collection network.* To mitigate flooding, priority was given to: (i) the rehabilitation of the rivers and lakes that have a buffer function for the floodplains and serve as the main drainage channels for the city core area and new development areas; (ii) the construction of drains at the base of the mountains to capture run-off; and (iii) the construction of tide gates to prevent backflow in the drainage system during high tides and salt intrusion from the rivers. This approach addresses the major sources of flooding in the cities which arise from the mountain run-off during heavy rainfall and ocean or sea backflow into the drainage systems during periods of high tide.

11. In the drainage network, existing combined sewers will be rehabilitated and expanded to ensure sufficient capacities to service the catchments area and design rainfall values, while utilizing ponds and lakes wherever possible to buffer the flow. Using combined sewers in the city core and in the highly dense areas, maximizes efficiency of investments and addresses constraints on land availability. In less dense areas, and where a drainage system is not yet in place, separate storm water drains and wastewater sewers will be considered. Priority catchment areas are the city core and major flooding areas of the cities.

12. In line with good engineering practice the combined sewers will include the installation of combined sewer overflows to spill excess storm flows to nearby water courses. This ensures that the interceptor pipes and pump stations, which transfer sewage to the wastewater plants, can be designed for cost effective operations.

13. *Wastewater treatment plants (WWTPs).* The number, location and size of the WWTPs were based on considerations of (i) proximity and convenience of effluent discharge points to a sea or river outfall; (ii) the absence of any planned settlement in the future, including minimal resettlement, and (iii) land availability including provision of land for possible expansion in the future. WWTPs were designed to meet government standards on effluent discharge.

Cost-Benefit Analysis

14. The IDA project is expected to benefit in Quy Nhon about 110,000 people by 2013. The benefits of the project include: (i) reduced flood damage; (ii) health benefits; (iii) savings in installation and desludging of septic tanks; (iv) savings in drainage maintenance; (v) increased tourism due to an improved environment for tourists and potential investors; (vi) improved financial positions of the Water Supply and Drainage Company as tariffs are increased resulting in better management in the provision of services. This will eventually eliminate subsidies from the provincial government; (vii) enhancement of the development potential of the city especially the areas along canals and previously flooded areas; (viii) creation of new business opportunities such as restaurants, retail stores, and other entertainment activities; and (ix) land value

appreciation in the area, the extent of which will largely depend on the new economic activities that will be created arising from the proposed investments. It is not feasible to quantify all the above benefits, or to evaluate accurately those that are quantifiable. In this analysis, only the first five benefits were assessed.

15. *Reduced flood damages.* Damages due to floods include direct and indirect damages. Direct damages result when houses, buildings and other structures, household goods, shop merchandise, roads and vehicles get in contact with floodwaters. Indirect damages are the consequential losses including loss of trade, loss of income for employers and employees, restrictions on traveling, costs of evacuation and reinstatement and costs of cleaning-up operations. Flood control and drainage improvement projects primarily stabilize land and infrastructure, which otherwise are at risk of destruction and loss from floods. Benefits have been measured as the avoided costs of damaged structures and the additional maintenance costs that would have been incurred on inundated major roads. Although in principle the costs of delays in economic activities and disruption to traffic should be included among the benefits, these costs are difficult to estimate and therefore were not accounted for. Reduced flood damages have been estimated at VND 193 billion annually.

16. *Health benefits.* An improved hygienic environment will directly benefit the populace of each of the cities. It is anticipated that the construction of new wastewater treatment plants will improve the quality of receiving waters by reducing the pollution load to rivers, beaches and seashores. Drainage improvement will also significantly reduce stagnant water, thereby reducing the breeding grounds of mosquitoes and other disease-bearing insect vectors. Construction of new sewers will decrease the amount of wastewater discharged into open drainage channels, thereby reducing the risk of water related health problems. The solid waste subprojects will promote safe and hygienic disposal of solid waste, reduce blockages of sewers and drains and also reduce air-borne particulate concentration arising from burning garbage and wind-blown dust. Also, garbage piles will be reduced and hence improve the environmental condition of the cities. All these are expected to translate into a reduction in risks of diseases and illnesses associated with an unhygienic environment as well as water related diseases such as diarrhea, dysentery, cholera, typhoid, etc. Health benefits were measured from expected savings in medical care and loss in income due to illness and death, estimated at VND 32 billion annually.

17. *Savings in installation and desludging of septic tanks.* All new construction in the participating cities are required to have a septic tank to avoid direct discharge of wastewater into the drainage system and for these tanks to be deslugged at least once a year. Constructing interceptor sewers means that the septic tanks will no longer be necessary resulting in savings in construction of septic tanks and desludging costs, estimated at VND 36 billion annually.

18. *Savings in drainage maintenance.* The drainage operating costs are expected to be reduced with the improvement of the solid waste management system, due to a reduction in need to clean waste from open drains. The benefits from savings in drainage maintenance are estimated at VND 3 billion annually.

19. *Increase in Tourism Income.* Tourism is an emerging industry in the participating cities. The project will play an important role in accelerating the development of tourism in these cities. For the analysis, the benefits are measured by the increase in tourist arrivals due to an improved environment for the tourists and an increase in expenditures per tourist primarily because of

longer duration of visits. The current annual growth rate of 5% in tourism arrival for the participating cities was adopted in the “without” project case. Implementation of the project is assumed to increase the growth rate to 5.5%. It is projected that with the implementation of the project about 26,821 additional tourists would arrive in the area annually. Income from tourism in Quy Nhon City amounted to VND 175 billion in the year 2005. Average expenditure per tourist for Quy Nhon would be expected to increase from VND 0.70 million to VND 0.74 million primarily because of the longer duration of visits.

20. For the whole IDA project, the benefits mainly arise from economic growth through reduced flood damage (60% of total annual benefits) and increases in tourism income (18%). Savings from installation costs of septic tanks and desludging account for 11% and health benefits, 10%. The health benefit is underestimated as it excludes benefits from the likely reduction in mortality and morbidity, especially for infants and the elderly, a reduction in the probability of a major outbreak of epidemic disease, and individual willingness to pay more than the medical expense to avoid being sick. Further benefits that could not be readily quantified include: the financial sustainability of the service providers, enhancement of the development potential of the cities in general, creation of new economic opportunities, and land value appreciation in the area.

Summary of the CBA:

21. The IDA project has an economic rate of return of 16 percent, which is higher than the 12 percent discount rate that was assumed. This is notwithstanding the fact that other benefits relating to health, environment and local economic development could not be realistically quantified and therefore have not been accounted for. The analysis highlights the robustness of the project in terms of its contribution to economic growth in the participating cities.

Summary of Cost Benefit Analysis	
Annual Benefits (in VND millions)	Quy Nhon
<i>Reduced flood damage</i>	53,745
<i>Health benefits</i>	10,398
<i>Savings in installation and desludging of septic tanks</i>	14,754
<i>Savings in drainage maintenance</i>	976
<i>Increase in Income from Tourism</i>	20,426
Total Benefits (in VND millions)	643,393
Total Costs – investments and operations (in VND millions)	535,999
Net Present Value (in VND millions)	94,587
EIRR (%)	16.0

Sensitivity Analysis:

22. The sensitivity analysis shows the EIRR of Quy Nhon City to be more sensitive to a decrease in benefits rather than to an increase in costs, noting however that not all benefits have been fully accounted for. The economic rate of return is most sensitive to a combined scenario of an increase in costs and a decrease in benefits.

Results of Sensitivity Analysis		
Scenario	Quy Nhon	
	Net Present Value (VND mil)	EIRR (%)
<i>Scenario 1: 10% Increase in Costs</i>	26,204	13.0
<i>Scenario 2: 10% Decrease in Benefits</i>	18,224	12.8
<i>Scenario 3: Combination of Scenarios 1 and 2</i>	(35,376)	10.7

Annex 10: Safeguard Policy Issues
VIETNAM: VN-GEF-Coastal Cities Project

1. The GEF Project is an integral part of the IDA financed CCESP and was included in the appraisal of the IDA operation. The following assessment is, however, specific to the GEF investments, using CCESP policy documents where relevant.

Social Issues

2. The project will benefit an estimated 60,000 residents living in the north-west part of the city through improved health outcomes (from improved water quality and hygienic conditions); reduced flood damages (due to flood control and drainage improvement supported under CCESP); and increased tourism income (due to an improved environment) among other benefits. A small portion of the population served by this project will experience adverse socio-economic impacts even though mitigation measures according to the Bank’s safeguard policies have been taken. The adverse impacts are due mainly to the necessity to acquire lands and relocate households for the project.

3. **Land acquisition and relocation of households.** The project will permanently acquire 15.9 total ha of land and will affect 110 households or about 480 people. The project will temporarily acquire 0.12 ha of land which will affect 6 households or about 26 people during the construction. A more specific breakdown of land acquisition types is provided in the table below.

Scope of land acquisition and households impacted			
	Item	Unit	Quantity
Land acquired in core zone	Residential land	m ²	785
	Garden	m ²	81
	Agricultural land	m ²	15,737
	Aquaculture land	m ²	102,997
	Total land acquired in core zone	m ²	119,600
Land acquired in buffer zone	Residential land	m ²	17,345
	Garden	m ²	21,930
Affected households	Total households affected of which:	number	110
	- households that would be relocated	number	97
	- households want to move into resettlement site	number	91
	- households that want to be self-relocated	number	6
	- households whose business will be affected	number	3
	- households that would be temporarily affected	number	6
	- households that are poor	number	16
	- households that have wounded soldiers or martyrs	number	14

4. A total of ninety-seven households or 423 persons will relocate as a result of this project. Residents in these 97 households are mainly hired labor (49.5%), farmers (16.5%) and salaried individuals (14.4%). These households have been living as an integrated community for several decades and since their relocation is unavoidable due to the project, extensive community consultations were carried out to elicit their viewpoints for the design of the relocation. A resettlement site will be developed under CCESP and the consultations with the affected households showed that most of them (91 out of 97) would choose to move to the proposed resettlement site.

5. ***Income and livelihoods impacts.*** The main livelihood adverse impact would be for 3 households or about 13 people who will lose access to their shrimp ponds in the core zone. The shrimp ponds were leased from the government and irrespective of the project, the lease will expire in December 2009. The yields from the shrimp farms are low and the cultivators have other sources of income and as a result the loss of access to the ponds will not have significant adverse impacts. Further, the project includes compensation for loss of aquaculture land.

6. The project will *not* acquire any agricultural lands in the buffer zones and hence the agricultural related livelihoods of the 97 relocated households will remain intact. In order to ensure that owners of these agricultural lands can continue producing, two specific actions have been taken: (i) the Provincial Peoples Committee (PPC) obtained the necessary waivers from DONRE ensuring the households can continue to access their agricultural lands despite having been relocated elsewhere; (ii) ensuring that the relocation site (Xom Cong resettlement) is physically accessible to relocated households thereby not impacting their ability to access the farm. This is achieved by relocating households within 900 meters from their agricultural lands. The proximity of the relocation site should also ensure that community relations, customs, kinship ties etc are disrupted to the least extent possible thereby helping to mitigate the socio-economic impacts ensuing from displacement.

7. ***Location of shrines and graves.*** There is 110 graves located in the core zone that would need to be relocated before the project implementation. The local population agreed to move the grave sites after they are compensated. There is a small shrine (area around 2 m²) located in the buffer zone. The shrine is of significance to the immediate and wider community and used for ceremonial offerings three times a year. Since the shrine would have been impacted due to its location in the buffer zone, communities were consulted. The results of these were that 86 households requested that the shrine be not moved. Public access all year-round to the shrine will be ensured. Trees are expected to be planted near the shrine so that the treatment plant will be less conspicuous from the shrine.

8. ***Ethnic Minorities.*** There are no ethnic minorities residing in the project area. This was confirmed through a survey carried out during the preparation of the project.

9. ***Preparation of land acquisition and relocation instruments.*** Because of the land-related adverse impacts, a Resettlement Action Plan (RAP) has been prepared based on the approved Resettlement Policy Framework (RPF) of the CCESP which includes the GEF project. The RAP details how the provisions of the Bank's OP 4.12 will be applied by outlining impacts, mitigation measures including compensating affected people. All displaced persons (DPs) will be compensated for their losses at replacement cost. They will be provided with rehabilitation measures to assist, improve or minimally maintain, their pre-project living standards. The RAP was based on a detailed impact inventory, a socioeconomic survey and on extensive

consultations with the affected population as well as within relevant government agencies. The PMUs, supported by independent monitoring consultants, will be responsible for monitoring social outcomes and managing the RAP.

10. **Public disclosure.** The Bank's disclosure requirements have been followed. All drafts of the RAPs were disclosed in Washington DC and in the VDIC in Hanoi before January 15, 2008. The Vietnamese translations were disclosed from January 14, 2008 at Nhon Binh ward People Committee and the PMU office accessible to local NGOs and project affected people. The final versions of the RAP were disclosed by May 21, 2008.

11. **Public consultation.** Three public meetings and one workshop were held during June and September 2006. Household surveys confirmed that the project responds to beneficiary demand. The two most serious problems identified by residents in the City were flooding and the lack of a proper drainage and sewer system. Improving sanitation outcomes requires continued interaction with a range of stakeholders during implementation. The consultations with the project affected people were conducted and the mechanisms for further consultations as well as grievances redress procedures were developed in the prepared RAP.

Environmental Issues

12. Design and treatment technology for the WWTPs has been selected to meet national environmental standards at least cost. Hydraulic modeling of receiving water quality has been conducted for three technology options of the secondary treatment. The Bank's policy on Environmental Assessment (OP 4.01) will be applicable and the project is considered a category A based on the potential environmental impact from the large scale construction of the WWTP and the impacts of effluents to the water resources. The Bank's Cultural Resources Policy (OP 4.11) will also be applicable as there are graves and a shrine located in the project area. These impacts are assessed and addressed as part of the EA and RAP.

13. An Environmental Impact Assessment report has been prepared to meet the requirements of the World Bank's policies on environmental safeguards and the Vietnamese requirements on Environmental Assessment. Based on the EIA report prepared for the CCESP in Quy Nhon and past experience on similar Bank projects in Vietnam, the project is expected to have mostly positive environmental and public health impacts as it will reduce pollution to water resources in Quy Nhon city. The EIA report was reviewed by the Binh Dinh DONRE and approval was provided on July 28, 2008. However considering the location and the activities of the wastewater treatment plant (WWTP) adverse impacts could arise through:

- (i) Temporary pollution (air, noise, vibration, surface run-off) from the excavation work, demolition and earth filling;
- (ii) Disturbance to local transport during construction work;
- (iii) Chance of flooding regime that could occur during construction in the project site, an agriculture and aquaculture land near a river estuary;
- (iv) Disposal of sludge from the WWTP;
- (v) Discharge of treated effluents from the WWTP to the Ha Thanh river and Thi Nai lagoon;
- (vi) Usage of chemicals for CEPT and possible disinfection; and
- (vii) Environment risks due to accidents, flooding or plant failures.

14. A site-specific EIA, acceptable to IDA, has identified the major impacts for these works and their mitigation measures. The Environmental Management Plan (EMP), prepared as part of the EIA, outlines the mitigation measures to be undertaken during construction and operation of the treatment plant. The EMP includes institutional responsibilities to address environmental matters, capacity building program for environmental management for PMU staff and other related stakeholders and the public, and identification of adequate funding for its implementation. The capacity building program will be implemented together with the CCESP for Quy Nhon.

15. The PMU is the same for the CCESP in Quy Nhon and thus will gain improved capacity by the time of the start-up of the CEPT project. The PMU will arrange for EMP as well as for RAP implementation and will report compliance as part of the semi-annual progress reports submitted to IDA, copied to DONRE. Independent environmental and resettlement monitoring consultants will be hired to assist the PMU in this task. During the operation stage of the WWTP, the Water supply and Drainage Company will be responsible for implementing the EMP.

Project activity	Impacts	Mitigation measures	Monitoring
Preconstruction phase			
Land acquisition and compensation		Implement RAP in full consultation with the PAHs	ISMC
Construction phase			
Earth work excavation and land filling	- Increased dust and noise levels	Water spray affected areas Cover all the materials on site Prevent the leakage of materials on the transporting route. Establish the temporary fence, if necessary Cover all trucks and avoid overloading materials Clean the trucks periodically	Air monitoring Noise (24h sampling) Dust, NO _x , SO _x , CO, THC
	Impacts on graves and shrine remaining in the buffer zone	Apply proper operational techniques and avoid festival timing	CMC
	Impacts on cultural resources	Appropriate clauses should be included in all construction contracts regarding the procedures to be followed in the event of chance finds of cultural significant artefacts or sites	CMC
Transportation of construction material and equipment	- Increased noise and air emission from vehicles	Avoid night work shift and announce working schedule to all people in the affected area Use equipments satisfying the TCVN 5948:1998 and TCVN 6962:2001 Have an appropriate schedule of maintenance and check certificate for using machines and equipments with low gas emission in accordance with TCVN 6438:2001, TCVN 5939:2005 and TCVN 5940:2005	Air monitoring Noise (24h sampling) Dust, NO _x , SO _x , CO, THC
	- Increased traffic flow	Design the working route in order to prevent traffic jam. Coordinate with local government to manage transportation route and schedule. Establish the temporary route for households.	CMC
	- Damage to road surface/ other utilities	Contractors must be responsible for repairing and rehabilitation.	Road surface quality

Project activity	Impacts	Mitigation measures	Monitoring
Mud dredging and disposal	Spillage and dust during transportation Disposal for backfilling	Use appropriate dredging techniques (dry) and machines Identify appropriate disposal site	ISMC/CMC
		Cover all trucks and avoid overloading materials Clean the trucks periodically	ISMC/CMC
Worker camps and workplace	- Generated domestic wastewater	Rent mobile toilets or construct temporary sanitation facility	Sanitation conditions
	- Generated solid waste	Provide sanitary bins for collecting waste Sign a contract with URENCO to collect solid waste daily	Sanitation conditions
	- Risk of accidents	All workers must follow the rules and safety program	Safety measures
Temporary storage of materials and excavated soil	- obstacle to public and traffic	The storage site could be constructed temporarily or hired from the nearby houses. Construction waste will be collected and stored in the separated areas and disposed appropriately. Sign a contract with URENCO to collect solids waste	Housekeeping
Operation of vehicles and equipment	- Oil spillage and hazardous waste	In case of spillage, it must be removed safely to treatment site. Do not repair pumps and machines on site. They must be sent to specific area.	Sanitation conditions
Operation phase			
Effluent discharge	- Impacts on surface water: Ha Thanh river and Thi Nai lagoon	- Strictly follow WWTP Operational Manual - Timely notify the local communities of operational incidents - Regularly dredge river outlet (every 6 months or annually) to open the flow. - Increase the amount of coagulants in case of operational failures. - Warning signboards for not using water from Ha Thanh river for water supply purpose during low tides and for not using water near the outlet for recreational purposes.	Surface water monitoring: pH, BOD, COD, SS, TKN, total nitrogen, total phosphorus, Total Coliform and residual chlorine
Without disinfection	Impacts on surface waters	- Monitor Coliform number for one year - Put warning signs	Total coliform number
Chlorine leaks (if disinfection installed in future)	Impacts on employees and corrosion	- Wear SCBA - Repair all leaks immediately - Use automatic leak detection equipment - Notify emergency response teams if required.	Ambient Chlorine concentration
Excess chlorine residual (if disinfection installed in future)	Toxic to fish, aquatic life. Potential to form (THM) due to chlorine residuals	Check and reduce Chlorine dose at disinfection facility Increase retention time	Residual chlorine concentrations.
Operation of equipment and chemical handling	Noise, fume, leakage of oil, grease and chemicals	Regular equipment maintenance Good housekeeping	Sanitation conditions
Risk of leakage from tank, pond and drying bed	- Impacts on groundwater	Lining the bottom with HDPE	Sanitation conditions
Sludge handling	- Impacts of solid	Sign contract with URENCO	Sludge

Project activity	Impacts	Mitigation measures	Monitoring
	waste and sludge		monitoring: Pb, Cu, Zn, Cd, Hg, Cr ⁶⁺ , total P, total N
	- Impacts on the cultural resources	Establish tree bells Raise the sign to inform people about the potential adverse impacts of the plant on their health	-
Workers	- Impacts on worker's health due to contact with micro-organism	Provide training on labor safety and health	-
Plant operation activities	- odor	Adequate operation.	Air monitoring: NH ₃ , H ₂ S, VOC, dust, noise

16. Hydraulic modeling of receiving water quality has been conducted for three technology options of the secondary treatment. The proposed technology options are facultative pond, trickling filter, and oxidation ditch. The alternatives analyzed for effluent dispersion of no treatment, only primary treatment with CEPT, start-up period at 20% of capacity, maintenance period at 50% of capacity, and full capacity. Each alternative has its own advantages and disadvantages in terms of land demand, investment costs, O&M costs, technical skills, and potential environmental impacts and risks. The following table is the summary of the advantages and disadvantages of the three treatment options

Item	Facultative Pond	Tricking Filter	Oxidation ditch
Land area (ha)	157.6	91.1	91.1
Budget			
Investment cost (USD)	8,209,969	6,941,262	8,142,574
O&M cost (VND/m ³) ⁽⁺⁾	712	1,220	1,580
Operation and maintenance	Simplest	Medium	Complicated
Technical skills	Simple	Normal	Skilled
Landscape	Eco-friendly	Compacted	Compacted
Negative impacts on environment:			
Construction phase:			
Amount of excavated soil (m ³)	150,000	242,500	263,000
Operation phase:			
- Start-up stage:			
+ Time (weeks)	None	8 weeks	2 – 4 weeks
+ Effluent concentration:			
SS (mg/l)	0 ^(*)	75	75
BOD ₅ (mg/l)	0 ^(*)	130	110
TKN (mg/l)	0 ^(*)	30	30
Pathogen (MPN/100ml)	0 ^(*)	2.0x10 ⁷	2.0x10 ⁷ MPN/day
- Operational stage:			
+ Effluent concentration:			
SS (mg/l)	20	25	20
BOD ₅ (mg/l)	15 ⁽¹⁾	25 ⁽²⁾	15 ⁽²⁾

TKN (mg/l)	4.0 ⁽¹⁾	7.0 ⁽²⁾	5.0 ⁽²⁾
Pathogen (MPN/100ml)	6	2.5 x 10 ⁵	2.5 x 10 ⁵
Full capacity			
Recovery zone of BOD ₅ , DO, and total coliform against TCVN 5942-1995 (class B) in the dry season (distance, km):			
+ Low tide:			
BOD ₅ , DO, total coliform	0,0,0 ^(**)	0,0 ^(**) , 3.0	0,0 ^(**) , 3.0
+ High tide:			
BOD ₅ , DO, total coliform	0,0,0 ^(**)	0,0,0 ^(**)	0,0,0 ^(**)
Recovery zone of BOD ₅ , DO, and total coliform against baseline of Ha Thanh river in the dry season (distance, km):			
+ Low tide:			
BOD ₅ , DO, total coliform	9.1, 7.3, 0 ^(***)	9.5, 7.7, 8	9.5, 7.7, 8
+ High tide:			
BOD ₅ , DO, total coliform	6.6, 15.6, 0 ^(***)	7.1, 16.2, 7	7.1, 16.2, 7
Values of BOD ₅ (mg/L), DO (mg/L), and total coliform (MPN/100 mL) against baseline of Ha Thanh river outfall in dry season:			
BOD ₅ , DO, total coliform	7, 3.9, 2.2E+03	8, 3.8, 1.2E+04	8, 3.8, 1.3E+04
Sludge production (tons of dried solids/day)	4,677	5,274	5,434
(m ³ /day)	11,692	13,185	13,585
Potential operation problems	Algal blooming, mosquito, insects, scum, groundwater pollution	High SS, BOD in effluent, insects, odor	Sludge bulking, foaming, high SS and BOD in effluent

Note: (*) No discharge of effluent into Ha Thanh river.

(**) Meet TCVN5942-1995 values at any distance

(***) The effluent does not affect the receiving water in term of total coliform

(+): The detailed calculation for O&M cost is presented in Appendix O.

17. When the WWTP runs at full capacity, effluent would meet the national effluent standards TCVN 7222-2002. In the worst case (at low tide in the dry season), BOD₅ and DO of river water at the river mouth would meet TCVN 5942-1995 for all alternatives. However, in the cases of the oxidation ditch and trickling filter alternatives, level of coliform will fall to the standard level only at a distance of 3 km from the outlet. This is beyond the river mouth flowing into Thi Nai lagoon. As the trickling filter option was selected, the provision of a disinfection facility at the WWTP would be considered and there would be extensive monitoring of coliform levels in Ha Thanh River.

Natural Habitats (OP4.04)

18. The project will not involve any conversion of natural habitats, which is the Thi Nai lagoon - a wetland with intensive aquaculture and fisheries and it is being proposed for a marine protected area. The Bank's Natural Habitats Policy (OP 4.04) will not be triggered. However, a natural habitat, the Thi Nai lagoon, exists in the project area and receives flows from Ha Thanh river, to which the WWTP will discharge effluents. The lagoon serves as a wetland for intensive aquaculture and fishing and is a proposed marine protected area. Calculation of the WWTP

effluent dispersion shows that the project will not have adverse impact on the Thi Nai lagoon, except for coliforms. Modeling of the dispersion of the wastewater effluent showed that the level of total coliform for both the trickling filter and oxidation ditch alternatives would be higher than that of the lagoon baseline. As there are other sources of discharge of untreated wastewater in the catchment, it is not possible at this stage to make a conclusion on potential adverse impacts caused by the project to the Thi Nai lagoon. As a result, a regular monitoring of water quality in the lagoon is recommended and will be carried out as part of the GEF project. Provisions for disinfection to reduce coliforms will also be included in the project.

Physical Cultural Resources

19. The Bank's policy on Physical Cultural Resources (OP 4.11) will apply as the project site includes graves and a shrine. Both will remain in the buffer zone as agreed with the local communities. The EIA report suggested careful construction technique and appropriate arrangement during festival time, as well as tree plantation as mitigation measures.

Public Consultation and Disclosure

20. **Public consultation:** Public consultation was conducted during the preparation of the CCESP and later, separately for the CEPT project. Three public meetings and one workshop were held during June and September 2006 to discuss environmental and resettlement issues. Both the PAHs, the Nhon Binh ward people Committee and the Fatherland front had no further environmental concerns, rather than the ones covered in the EIA report, and expressed full support to the project. The consultations with the project affected people, including the ones to be resettled on resettlement options and rehabilitation measures were conducted and the mechanism for further consultations as well as grievances redress procedures were developed in the prepared RAP.

21. **Public disclosure (BP 17.50).** The Bank's disclosure requirements have been followed. All drafts of the EIA, RAPs, were disclosed in Washington DC and in VDIC in Hanoi by January 15, 2008. The Vietnamese translations were disclosed from January 14, 2008 at Nhon Binh ward People Committee and the PMU office accessible to local NGOs and project affected people. All final versions were disclosed by May 21, 2008.

Annex 11: Project Preparation and Supervision
VIETNAM: VN-GEF-Coastal Cities Project

	Planned	Actual
PCN review		May 7, 2004
Initial PID to PIC		March 20, 2007
Initial ISDS to PIC		March 20, 2007
Appraisal	June 2008	June 11, 2008
Negotiations	October 2008	November 13, 2008
Board/RVP approval	June 2009	
Planned date of effectiveness	July 2009	
Planned date of mid-term review	January 2011	
Planned closing date	December 2014	

Key institutions responsible for preparation of the project:

Project Management Unit in Quy Nhon
379 Tran Hung Dao, Quy Nhon City, Binh Dinh Province
Tel: (84) 56 822 859; Fax: (84) 52 817 249; E-mail: quynhonpmu@gmail.com

Bank staff and consultants who worked on the project includes:

Name	Title	Unit
William D. Kingdom	Lead Water and Sanitation Specialist – Task Team Leader (TTL) until negotiations	EASUR
Hung Duy Le	Sr. Operations Officer	EASVS
Claudio Purificato	Water and Sanitation Specialist	EASUR
Phuong Thi Thanh Tran	Sr. Environmental Specialist	EASVS
Hoa Thi Mong Pham	Sr. Social Development Specialist	EASVS
Hoi-Chang Nguyen	Senior Counsel	LEGES
Giang Thi Huong Nguyen	Program Assistant	EACVF
Kien Trung Tran	Procurement Specialist	EAPCO
Cung Van Pham	Financial Management Specialist	EAPCO
Eliana Esposito	Communications Specialist	EXTCD
Michele Bruni	Communications Officer	EXTCD
Nicolas Kotschoubey	GEF Investment Fund	EASUR
Isabel Mutambe	Program Assistant	EASUR
Nina Bhatt	Social Development Specialist	EASSO
Hiromi Yamaguchi	Consultant	EASUR
Yoonhee Kim	Young Professional	EASUR
Sudipto Sarkar	Lead Specialist, TTL after negotiations	EASUR
Alexander Bakalian	Peer Reviewer	MNSSD
Jonathan Kamkwala	Peer Reviewer	ECSSD

Annex 12: Documents in the Project File
VIETNAM: VN-GEF-Coastal Cities Project

1. Project Appraisal Document and related appraisal documents of CCSEP which includes the GEF Project. The appraisal of the CCESP included: procurement capacity assessment, financial management capacity assessment, financial assessment, and economic assessment.
2. Project Implementation Plan and Procurement Plan.
3. Other documents:
 - Environmental Impact Assessment
 - Resettlement Action Plan

Annex 13: Statement of Loans and Credits
VIETNAM: VN-GEF-Coastal Cities Project

Project ID	FY	Purpose	Original Amount in US\$ Millions				Cancel.	Undisb.	Difference between expected and actual disbursements	
			IBRD	IDA	SF	GEF			Orig.	Frm. Rev'd
P108885	2009	VN - Agriculture Competitiveness Project	0.00	59.80	0.00	0.00	0.00	57.74	0.00	0.00
P088759	2009	Fin Sector Modern and Info Mgmt System	0.00	60.00	0.00	0.00	0.00	56.92	0.00	0.00
P082672	2008	VN-Northern Upland Health Support Proje	0.00	60.00	0.00	0.00	0.00	54.73	-2.42	0.00
P083581	2008	VN-HANOI URBAN TRANSPORT	0.00	155.21	0.00	0.00	0.00	148.57	10.50	0.00
P086508	2008	VN-Priority Infra Investment	0.00	152.44	0.00	0.00	0.00	141.06	0.00	0.00
P095129	2008	VN-Northern Delta Transport Dev	0.00	170.00	0.00	0.00	0.00	153.69	0.00	0.00
P096418	2008	VN Land Administration Project	0.00	75.00	0.00	0.00	0.00	68.08	-2.07	0.00
P099211	2008	VN-Rural Distribution Project	0.00	150.00	0.00	0.00	0.00	135.39	0.00	0.00
P099376	2008	Tax Administration Modernization Project	0.00	80.00	0.00	0.00	0.00	82.26	0.00	0.00
P100916	2008	VN-Third Rural Finance Project	0.00	200.00	0.00	0.00	0.00	188.00	0.00	0.00
P101608	2007	VN-Avian & Human Influenza Control &Prep	0.00	20.00	0.00	0.00	0.00	18.61	5.49	0.00
P083588	2007	VN-MKG DELTA TRANSPORT INFRA DEV	0.00	207.70	0.00	0.00	0.00	221.29	7.86	0.00
P104848	2007	VN-HIFU DEVELOPMENT	0.00	50.00	0.00	0.00	0.00	40.77	-5.46	0.00
P082295	2007	VN-COASTAL CITIES ENVMT SANIT.	0.00	124.70	0.00	0.00	0.00	115.88	-4.94	0.00
P079665	2007	VN-2ND HIGHER EDUCATION	0.00	59.40	0.00	0.00	0.00	51.10	2.36	0.00
P085071	2006	Customs Modernization	0.00	65.90	0.00	0.00	0.00	67.36	35.28	0.00
P084871	2006	VN-TRANS & DISTRIB 2	0.00	200.00	0.00	0.00	0.00	165.10	48.49	-4.01
P073361	2006	VN -Natural Disaster Risk Mngt Project	0.00	86.00	0.00	0.00	0.00	72.35	4.93	0.00
P079663	2006	VN-Mekong Regional Health Support Proj	0.00	70.00	0.00	0.00	0.00	66.02	-3.18	0.00
P079344	2006	VN -ICT Development	0.00	93.72	0.00	0.00	0.00	85.23	23.55	0.00
P075407	2006	VN-Rural Transport 3	0.00	106.25	0.00	0.00	0.00	106.34	38.51	0.35
P077287	2006	VN-RRD RWSS	0.00	45.87	0.00	0.00	0.00	40.30	5.64	0.00
P066051	2005	VN - Forest Sector Development Project	0.00	39.50	0.00	0.00	0.00	30.31	19.74	12.04
P085260	2005	VN-EFA Support Program	0.00	50.00	0.00	0.00	0.00	15.87	15.00	0.00
P085080	2005	VN-ROAD SAFETY	0.00	31.73	0.00	0.00	0.00	29.36	21.45	0.00
P073763	2005	VN-WATER SUPPLY DEV.	0.00	112.64	0.00	0.00	0.00	99.73	28.96	0.00
P082627	2005	Payment System and Bank Modernization 2	0.00	105.00	0.00	0.00	0.00	84.16	65.34	65.84
P082604	2005	VN-HIV/AIDS Prevention Project	0.00	35.00	0.00	0.00	0.00	16.24	-1.88	0.00
P074688	2005	VN-RURAL ENERGY 2	0.00	220.00	0.00	0.00	0.00	143.29	72.96	0.00
P059663	2004	VN-ROAD NETWORK IMPROVEMT	0.00	225.26	0.00	0.00	0.00	176.86	159.15	0.00
P065898	2004	VIETNAM WATER RESOURCES ASSISTANCE	0.00	157.80	0.00	0.00	0.00	135.28	66.69	0.00
P070197	2004	VN-URBAN UPGRADING	0.00	222.47	0.00	0.00	0.00	175.86	24.12	0.00
P044803	2003	VN-PRIMARY EDUC FOR DISADVANTAGED CHILRE	0.00	138.76	0.00	0.00	0.00	76.55	38.00	32.80
P075399	2003	Public Financial Management Reform Proj.	0.00	54.33	0.00	0.00	0.00	43.70	38.49	13.70
P066396	2002	VN-SYSTEM ENERGY, EQUITIZATION & RENEWAB	0.00	225.00	0.00	0.00	0.00	82.83	34.70	34.70
P072601	2002	VN - Rural Finance II Project	0.00	200.00	0.00	0.00	0.00	0.00	-40.73	0.00
P073305	2002	VN-Regional Blood Transfusion Centers	0.00	38.20	0.00	0.00	0.00	27.27	18.35	-5.24
P062748	2001	VN - COMMUNITY BASED RURAL INFRA.	0.00	102.78	0.00	0.00	0.00	14.17	-5.60	0.00

P052037	2001	VN-HCMC ENVMTL SANIT.	0.00	166.34	0.00	0.00	0.00	99.26	74.17	74.17
P042927	2001	VN-Mkg Transp & Flood Protection	0.00	135.00	0.00	0.00	0.00	54.22	9.76	-5.65
Total:			0.00	4,551.80	0.00	0.00	0.00	3,441.75	803.21	218.70

VIETNAM
STATEMENT OF IFC's
Held and Disbursed Portfolio
In Millions of US Dollars

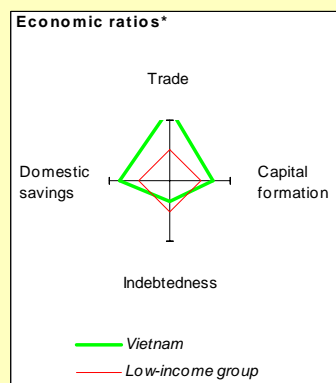
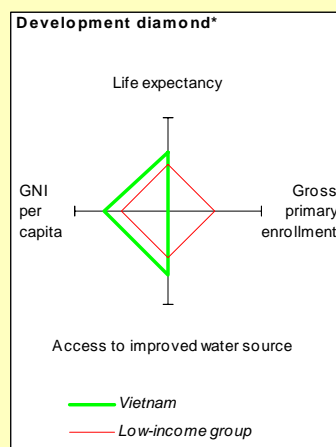
FY Approval	Company	Committed				Disbursed			
		IFC				IFC			
		Loan	Equity	Quasi	Partic.	Loan	Equity	Quasi	Partic.
2003	ACB-Vietnam	0.00	5.02	0.00	0.00	0.00	5.02	0.00	0.00
2002	CyberSoft	0.00	0.06	0.00	0.00	0.00	0.06	0.00	0.00
2002	Dragon Capital	0.00	0.00	1.05	0.00	0.00	0.00	1.05	0.00
2002	F-V Hospital	5.00	0.00	3.00	0.00	5.00	0.00	3.00	0.00
2005	Khai Vy	6.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1998	MFL Vinh Phat	0.13	0.00	0.00	0.00	0.13	0.00	0.00	0.00
1997	Nghi Son Cement	10.09	0.00	0.00	1.88	10.09	0.00	0.00	1.88
2004	Olam	20.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00
2005	Paul Maitland	7.20	0.00	0.00	0.00	7.20	0.00	0.00	0.00
2001	RMIT Vietnam	7.25	0.00	0.00	0.00	3.50	0.00	0.00	0.00
2006	SABCO	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	Sacombank	0.00	2.77	0.00	0.00	0.00	2.77	0.00	0.00
2004	Sacombank	0.00	2.31	0.00	0.00	0.00	2.31	0.00	0.00
2005	Sacombank	0.00	2.05	0.00	0.00	0.00	2.05	0.00	0.00
2006	Sacombank	0.00	3.05	0.00	0.00	0.00	3.05	0.00	0.00
2002	VEIL	0.00	0.00	2.00	0.00	0.00	0.00	2.00	0.00
2003	VEIL	0.00	7.41	0.00	0.00	0.00	7.41	0.00	0.00
2007	VEIL	0.00	6.15	0.00	0.00	0.00	6.15	0.00	0.00
Total portfolio:		75.67	28.82	6.05	1.88	45.92	28.82	6.05	1.88

FY Approval	Company	Approvals Pending Commitment			
		Loan	Equity	Quasi	Partic.
2000	MFL-AA	0.00	0.00	0.00	0.00
2006	CCS-Asia	0.02	0.00	0.00	0.00
2000	Interflour	0.01	0.00	0.00	0.01
2006	CII-Vietnam	0.00	0.00	0.00	0.00
2000	MFL Mondial	0.00	0.00	0.00	0.00
2002	F-V Hospital	0.00	0.00	0.00	0.00
1999	MFL Minh Minh	0.00	0.00	0.00	0.00
1999	MFL Chau Giang	0.00	0.00	0.00	0.00
Total pending commitment:		0.03	0.00	0.00	0.01

Annex 14: Country at a Glance

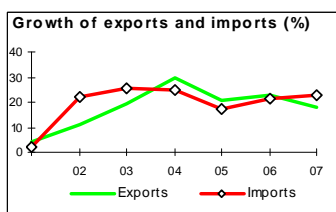
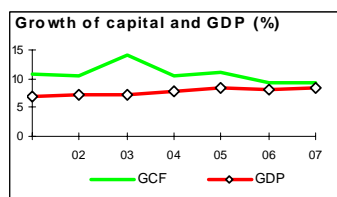
VIETNAM: VN-GEF-Coastal Cities Project

POVERTY and SOCIAL	East				
	Vietnam	Asia & Pacific	Low-income		
2007					
Population, mid-year (<i>millions</i>)	85.1	1,914	1,296		
GNI per capita (<i>Atlas method, US\$</i>)	790	2,180	578		
GNI (<i>Atlas method, US\$ billions</i>)	67.2	4,174	749		
Average annual growth, 2001-07					
Population (%)	13	0.8	2.2		
Labor force (%)	2.2	12	2.7		
Most recent estimate (latest year available, 2001-07)					
Poverty (% of population below national poverty line)	29		
Urban population (% of total population)	27	43	32		
Life expectancy at birth (<i>years</i>)	71	71	57		
Infant mortality (<i>per 1,000 live births</i>)	15	24	85		
Child malnutrition (% of children under 5)	20	13	29		
Access to an improved water source (% of population)	92	87	68		
Literacy (% of population age 15+)	..	91	61		
Gross primary enrollment (% of school-age population)	..	110	94		
Male	..	111	100		
Female	..	109	89		
KEY ECONOMIC RATIOS and LONG-TERM TRENDS					
	1987	1997	2006	2007	
GDP (<i>US\$ billions</i>)	36.7	26.8	610	712	
Gross capital formation/GDP	13.6	28.3	35.7	35.3	
Exports of goods and services/GDP	6.0	43.1	73.5	75.7	
Gross domestic savings/GDP	4.8	20.2	32.4	27.4	
Gross national savings/GDP	..	21.6	36.9	32.8	
Current account balance/GDP	-1.6	-6.2	-0.3	-3.1	
Interest payments/GDP	0.0	1.0	0.5	..	
Total debt/GDP	0.5	81.1	33.1	..	
Total debt service/exports	..	7.7	2.0	..	
Present value of debt/GDP	27.9	..	
Present value of debt/exports	37.3	..	
	1987-97	1997-07	2006	2007	2007-11
(<i>average annual growth</i>)					
GDP	7.7	7.2	8.2	8.5	8.1
GDP per capita	5.6	5.9	6.9	7.2	6.9
Exports of goods and services	27.3	17.9	22.7	17.9	17.9



STRUCTURE of the ECONOMY

	1987	1997	2006	2007
(% of GDP)				
Agriculture	40.6	25.8	20.4	..
Industry	28.4	32.1	41.6	..
Manufacturing	22.4	16.5	21.3	..
Services	31.1	42.2	38.1	..
Household final consumption expenditure	..	71.7	61.7	67.1
General gov't final consumption expenditure	..	8.1	5.9	5.5
Imports of goods and services	14.8	51.2	76.8	83.6
	1987-97	1997-07	2006	2007
(<i>average annual growth</i>)				
Agriculture	4.0	4.0	3.4	..
Industry	9.5	9.9	10.4	..
Manufacturing	6.5	11.2	12.4	..
Services	9.1	6.2	8.3	..
Household final consumption expenditure	..	10.8	12.9	20.3
General gov't final consumption expenditure	..	5.7	8.5	8.5
Gross capital formation	23.8	10.2	9.3	9.2
Imports of goods and services	29.6	18.1	21.5	22.6



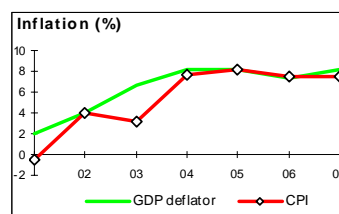
Note: 2007 data are preliminary estimates.

This table was produced from the Development Economics LDB database.

* The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will be incomplete.

PRICES and GOVERNMENT FINANCE

	1987	1997	2006	2007
Domestic prices				
<i>(% change)</i>				
Consumer prices	..	3.2	7.5	7.5
Implicit GDP deflator	362.6	6.6	7.3	8.2
Government finance				
<i>(% of GDP, includes current grants)</i>				
Current revenue	13.2	20.9	27.1	25.5
Current budget balance	-0.6	4.5	8.5	5.8
Overall surplus/deficit	..	-14	-0.3	-3.4



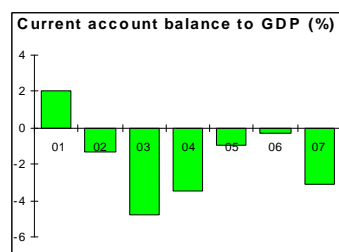
TRADE

	1987	1997	2006	2007
<i>(US\$ millions)</i>				
Total exports (fob)	610	9,185	39,826	..
Rice	..	926	1,276	..
Fuel	..	1,443	8,265	..
Manufactures	..	4,401	19,360	..
Total imports (cif)	1,184	11,592	44,891	..
Food	..	6
Fuel and energy	..	1,194	5,970	..
Capital goods	..	3,512	10,800	..
Export price index (2000=100)	..	119	100	..
Import price index (2000=100)	..	120	103	..
Terms of trade (2000=100)	..	99	97	..



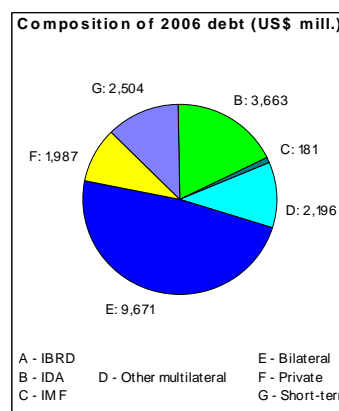
BALANCE of PAYMENTS

	1987	1997	2006	2007
<i>(US\$ millions)</i>				
Exports of goods and services	..	11,678	44,926	52,964
Imports of goods and services	..	13,618	47,710	58,502
Resource balance	..	-1,940	-2,784	-5,538
Net income	-94	-614	-1,430	-1,887
Net current transfers	27	887	4,049	5,227
Current account balance	-592	-1,667	-165	-2,198
Financing items (net)	..	56	3,093	..
Changes in net reserves	..	1,611	-2,928	..
Memo:				
Reserves including gold (US\$ millions)	..	186	11,485	..
Conversion rate (DEC, local/US\$)	78.3	11,683.3	16,963.9	16,056.0



EXTERNAL DEBT and RESOURCE FLOWS

	1987	1997	2006	2007
<i>(US\$ millions)</i>				
Total debt outstanding and disbursed	191	21,777	20,202	..
IBRD	0	0	0	0
IDA	60	569	3,663	4,549
Total debt service	2	914	918	..
IBRD	0	0	0	0
IDA	0	4	56	64
Composition of net resource flows				
Official grants	41	254	543	..
Official creditors	-1	378	863	..
Private creditors	0	292	-66	..
Foreign direct investment (net inflows)	10	2,220	2,315	..
Portfolio equity (net inflows)	0	0	0	..
World Bank program				
Commitments	0	444	656	973
Disbursements	0	181	340	748
Principal repayments	0	1	23	30
Net flows	0	180	317	718
Interest payments	0	3	33	34
Net transfers	0	177	284	684



Note: This table was produced from the Development Economics LDB database.

9/24/08

Annex 15: Incremental Cost Analysis

VIETNAM: VN-GEF-Coastal Cities Project

Environmental Degradation in Vietnam and “business as-usual” scenario

1. The East Sea Large Marine Ecosystems (LME) lies within the global centre of biodiversity for marine species, with more than 2,500 species of marine fishes and 500 species of reef-building corals present.² The region also supports some of the world’s most diverse mangrove forests and sea grass beds.

2. However, rapid economic growth in Vietnam is putting a strain on existing drainage and sewerage infrastructure in the cities. Sanitation infrastructure is in poor condition, and is deteriorating as a result of prolonged under-investment, rapid urbanization, expanded tourism, and increased wastewater loads. Traditionally, in Vietnam, no treatment facilities exist in manufacturing plants, factories and sewer systems before wastes are discharged into water bodies and municipal and industrial wastewater is discharged virtually untreated into the waterways, with little to no re-use of treated wastewater. Pollution is one of its most severe environmental problems and is degrading the region’s large marine ecosystems.

3. Furthermore, the service providers that are responsible for providing these services are semi-autonomous government-owned public service enterprises that generally have weak institutional capacity. At the same time, wastewater and solid waste charges are not adequate to cover the necessary investments. This has resulted in significant environmental degradation of the region’s seas, coasts, estuaries and rivers through increased sediments, nutrient pollution, and sewage pollution. Sewage pollution has health impacts on the population and affects biodiversity and fisheries. As a result, only one-third of the original mangrove forests remain, 80% of the coral reefs are threatened, sea grass beds have been reduced or degraded by 20-50%, and many fish nursery areas and breeding grounds are being degraded.

GEF Response

4. Three scenarios to address the above issues of increased growth, inadequate sanitation conditions, coastal degradation, and lack of investments to address environmental issues are discussed below:

5. In the worst case scenario – no intervention – the issues would not be addressed and the situation will be exacerbated. The marine environment will continue to be degraded, and biodiversity will continue to be lost, at an increasing rate, in Vietnam’s waters and, through the effect of global oceanic circulation, in other areas of the Pacific Ocean.

6. In the “business-as-usual” scenario, i.e. CCESP project but without GEF funding, the project will further develop and consolidate Vietnam’s urban environmental agenda technically (sewerage, waste water treatment and solid waste management), financially (cost recovering

² Technical information in this section from: South China Sea, GIWA Regional Assessment №54. Wilkinson, C., deVantier, L., Talaue-McManus, L., and Lawrence, D.

charges), and institutionally (efficient and effective service providers). However, lack of local experience with innovative solutions and client concerns about the use of “untried” technologies, will limit the design of treatment facilities to conventional approaches. Under this scenario, the environment in the LMEs would improve, but not as much, and at higher cost, than with additional GEF funding. Specifically, in the absence of the GEF project the demonstration effect of newer technologies will be absent. As Vietnam starts to develop its wastewater facilities, it would be important to consider both conventional and innovative (like the CEPT) technologies for further replication in the country.

Global environmental benefits (GEB) resulting from “GEF Scenario”

7. The “GEF scenario” proposed (CCESP with GEF financing), includes demonstration of a wastewater treatment plant using novel technology, which has higher treatment efficiency compared to conventional technology. The scenario proposed also promotes capacity development, institutional strengthening, and dissemination of good practices.

8. Under this scenario, the amount of pollutants removed (particularly nutrients) would be greater than in the other scenarios, and the environment in the LMEs would consequently benefit more than in the baseline scenario. Considering the future advantages of disseminating the technology and having it replicated on a large scale within the country and within the region, the benefits to water quality would be even greater and would be farther-reaching, and for a longer time period.

9. Under the GEF scenario, the project is consistent with GEF’s Contaminant-Based Operational Program 10 (OP10), which aimed to demonstrate ways of overcoming barriers to the adoption of best practices that limit contamination of International Waters. The project contributes to GEF's current Strategic Objective 2, “to catalyze transboundary actions addressing water concerns,” specifically to reduce land-based marine pollution, in the context of the WB/GEF Strategic Partnership for Pollution Reduction in the Large Marine Ecosystems of East Asia, executed in partnership with UNDP/IMO.³ Finally, the project supports GEF’s Strategic Program 2, “reducing nutrient over-enrichment and oxygen depletion from land-based pollution of coastal waters in LMEs consistent with the GPA.”⁴ The aquatic environment adjacent to Vietnam’s coastline is degraded owing to land-based pollution (oxygen depletion and over-enrichment), and the project would address this problem. The amount of oxygen-depleting substances and nutrients reduced (BOD, N and P) would be closely monitored in the areas of intervention.

Incremental reasoning and GEF’s role

10. Additional GEF funds of US\$ 5 million would support a significant enhancement of the Bank Project’s waste water treatment component. With GEF funding, the coastal cities would have the opportunity to “try and test” a pilot chemically enhanced primary waste water treatment (CEPT) plant, with trickling filters to be constructed in Quy Nhon. The GEF incremental funding will allow the piloting of CEPT in Vietnam, leveraging the funds of IDA both in terms of

³ Partnerships in Environmental Management of the Seas of East Asia – PEMSEA

⁴ GPA: Global Program of Action for the Protection of the Marine Environment from Land-based Activities: UNEP’s project to protect and preserve the marine environment from the adverse environmental impacts of land-based activities. Subscribed to by 108 countries.

provision of wastewater treatment of sewage collected through sewerage networks financed by IDA and in terms of the demonstration effect of the new technology. This technology has been successfully applied in Latin America, for example in Mexico City and Rio de Janeiro, as well as in Hong Kong, and it is believed that it would be successful under local conditions in Vietnam.

11. The feasibility study carried for the preparation of the project has showed that CEPT is the most effective technology for the removal of nutrients from wastewater with an efficiency ranging between 70 and 90%, whereas for conventional primary + biological treatment only 20—30% phosphorus is generally removed. Phosphorus is typically the limiting nutrient in fresh waters and nitrogen is typically the limiting nutrient in seawater. Either may be limiting in brackish water. Both phosphorus and nitrogen stimulate algal growth and the subsequent algal decomposition provides a new source of BOD. Their removal through CEPT would therefore greatly improve effluent quality. Considering the above CEPT was selected as the most appropriate approach to tackle the issue of improving the health and habitat conditions of globally significant marine and coastal ecosystem.

12. The higher levels of nutrient removal are of particular interest as they mitigate the potential for harmful algal blooms and help in preventing eutrophication. It is critical to test a range of processes in Vietnam as it embarks on the implementation of wastewater treatment facilities around the country. Failure to do so will lock the country into the application of developed country technologies where alternatives, such as CEPT, might be more appropriate.

13. Without GEF funding, a wastewater treatment plant of lower efficiency for the amount invested would be constructed, which would allow comparatively greater levels of pollution into the water bodies. GEF funding allows for the demonstration of technology that improves treatment efficiency per investment level and therefore for greater global benefits (water quality).

Role of Co-Financing

14. Activities that are essential to the GEF project that are co financed by the CCESP consist of activities that are (i) in the same locality and (ii) in the same field of intervention. The CCESP will finance wastewater treatment plants in Phu Hoa and Beau Lac and also finance wastewater collection systems to transport the wastewater to the various treatment plants in the area. In this regard, the GEF grant of US\$ 5.00 million has played an important role in co-financing with the other related investments for the project: US\$ 19.01 million for CCESP and US\$ 2.67 million as co-financing under the wastewater treatment in Quy Nhon.

Annex 16: Communication and Replication Program

VIETNAM: VN-GEF-Coastal Cities Project

PUBLIC COMMUNICATION STRATEGY

1. The communication strategy aims to broaden the public consensus and support to the project and to promote dialogue within the management units and between institutions and citizens.
2. Dissemination of project information is the essential first step to promote replication of appropriate technology. For a project such as the CEPT WWTP to be considered successful from a demonstration perspective, the information must be disseminated over a wide range of media and fora and contacts with as many interested parties as possible must be sought. This component will cover the implementation of and/or participation in national and/or regional conferences, workshops, presentations and technical publications all aimed to facilitate spreading and sharing of information on lessons learned.

Technical Conferences

3. Technical presentations of papers and project's achievements at national and regional conferences provide an excellent means for efficient dissemination of information to a potentially large group of people sharing a common interest. The choice of conference type and venue is important in terms of targeting the desired audience, both in terms of size and interest level. In Vietnam, several conferences are held which would be appropriate for dissemination of CEPT WWTP Project information.
4. The CEPT WWTP Project demonstrates an innovative and potentially viable technology, which could be replicated in various locations within Vietnam and the region. The CEPT technology is particularly significant and useful in applications in which nutrient removal is required to protect aquatic environments, such as streams, rivers and marine estuaries. The high nutrient removal efficiencies which can be achieved through use of CEPT can be effective in controlling the discharge of land-based pollutant contaminants to the East Sea (International Waters). Dissemination of information with respect to the CEPT WWTP Project is an important aspect of this project, so as to demonstrate benefits for replication in other locations.
5. It is recommended that the CEPT WWTP Project be presented in at least one national conferences in Vietnam, initially during the implementation stage and following completion, when there is proof of the effectiveness of the treatment process and the actual costs incurred. The Project information should be presented formally as a technical paper in a group forum. This will encourage dissemination of Project information to the widest group of recipients.

Workshops

6. Conducting workshops to present findings of the CEPT WWTP to interested invited attendees will be another means to disseminate project information in a meaningful way. Workshops are particularly effective if the attendees actively participate in the proceedings and have common interests to the findings presently, such as the intention to implement wastewater schemes in other locations in Vietnam or the region.

7. The invitation of appropriate attendees will make a significant difference in terms of the utility and benefit gained from the workshop. The workshop will be structured in an interactive format, to allow the attendees to actively share ideas and experiences with the group. In this way, critical questions are asked and potential solutions addressed. Replication of the CEPT WWTP will be encouraged by this interactive approach. Workshops will address different audiences and will include: decision-makers; practitioners; local communities' representatives; and service providers.

8. It is recommended that the PMU hold workshops during at least two stages of the project implementation. Following the acceptance by GEF for funding, the PMU should conduct the first half day workshop in Quy Nhon City, providing a forum for discussion and interaction of Project issues. The workshop will inform the attendees of the approved project, schedule, costs, goals and objectives. Attendees will be encouraged to follow the progress of the project over the next years of implementation. Following commissioning and during the active operation of the CEPT WWTP, the PMU should offer a second workshop to disseminate information in terms of lessons learned during implementation of the project, as well as operational experiences. Such specific project experiences would be most useful to those attendees who face technical choices in terms of implementation of a similar project in their own community.

9. The lead project representative, the PMU, shall organize and conduct a minimum of two technical workshops, which disseminate information relative to two periods of project development, namely post GEF approval and during the operation stage.

Publishing Papers in Technical Publications

10. Publishing papers in technical publications will facilitate the dissemination of project information to a wide audience, perhaps even with greater efficiency than the presentation of papers at national conferences. From a strictly numbers standpoint, a national conference may have a limited audience, whereas a technical publication could potentially reach multiple recipients, further enlarging the base of dissemination. Technical publications closely focus on their target audience, giving the writer the opportunity to communicate with a highly technical and receptive audience. At least one technical paper regarding technical features of the CEPT WWTP will be published in a national or international publication. The content of the paper will include: first, an overview during implementation; and second, the working experience with the actual operation of the CEPT WWTP.

Establishing Project Website

11. An internet website on which relevant project data are posted, along with appropriate GEF links will be designed and implemented. Papers presented at conferences, summary of workshops and papers published on national publications will all be included within the website, as they will serve to foster improved understanding of the project's intentions and allow the public to consider the use of CEPT WWTP for their own applications elsewhere. The website should also include other publications regarding CEPT projects elsewhere.

REPLICATION STRATEGY

12. Replication of the CEPT WWTP is entirely dependent upon how well the project information has been disseminated and, more specifically, the target audience for that dissemination effort has been reached. Needless to say that the project will be replicable upon achievement of some basic criteria: it must be cost effective, have a positive benefit to cost ratio, and most importantly, have affordable annual operation and maintenance costs. In order to achieve eligibility for replication, the CEPT WWTP must be able to perform a function which makes it a unique and attractive solution to wastewater issues, that is offering the best possible benefits with the lowest possible operation and maintenance costs.

13. The replication strategy will target potential candidates for which the CEPT WWTP is able to provide similar benefits in terms of reduction of land-based pollutant contaminants to water bodies. The potential candidates for replication in Vietnam include all coastal cities, as well as inland cities that discharge to rivers flowing into marine habitats. In order to be eligible to replicate the project, these cities should have a potential for connected service population of approximately 100,000 people, as this is the population base that allows an economy of scale suitable for efficiently operating and maintaining the CEPT WWTP, once implemented.

14. The replication strategy will also include the GEF IW:LEARN program and its objective of strengthening the International Waters (IW) management by creating a IW community and facilitating learning and information sharing among IW projects, partners and stakeholders. The program achieves such a goal by: facilitating access to information about transboundary water resources; offering structured learning; organizing biennial International Waters Conferences; testing innovative approaches to IW implementation; and fostering partnerships. This project will be included in the GEF IW:LEARN network and will benefit from it for the success of its replicability.

Annex 17: Strategic Partnership Investment Fund (IF)

VIETNAM: VN-GEF-Coastal Cities Project

1. In 1995, 12 East Asian countries came together with a common vision to ensure the sustainable development of their shared waters.⁵ This partnership of governments, with the support of the GEF, UNDP, and IMO, created the *Partnerships in Environmental Management for the Seas of East Asia* (PEMSEA). One of the main achievements of the countries through their contribution to PEMSEA has been the development and adoption of the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA), which was endorsed by each of the twelve countries in December 2003. The SDS-SEA is significant as it is the first, and the broadest, partnership agreement in the region to address the management of the regional seas. One of the highest priorities for action in the SDS-SEA is the reduction of land-based pollution that has an impact on the marine environment.
2. The countries of East Asia have recognized that a coordinated and innovative approach with a strong focus on scaling up investment is urgently needed to implement the SDS-SEA. GEF's new operational modality – the Strategic Partnership – has provided East Asia with an opportunity to undertake the necessary actions with coordinated support from GEF and the World Bank. The *WB/GEF Strategic Partnership Investment Fund for Pollution Reduction in the Large Marine Ecosystems of East Asia* (IF), an US\$80 million grant financing facility managed by the World Bank, was approved by GEF in November 2005. The IF forms the key financing arm of the East Asia Seas Strategic Partnership.
3. The objective of the IF is to scale up investments in coastal land-based pollution reduction in East Asia through co-financing of projects that remove technical, institutional, and financial barriers which currently limit efficient investment in pollution reduction. The US\$80 million grant financing provided by GEF is expected to leverage between US\$800 million and US\$1.5 billion in counterpart financing from the World Bank and other sources, including the public and private sectors. The IF has adopted a coordinated approach to monitoring such that the contribution of all projects to the overall objectives of the IF can be measured. Tables 1 and 2 below show the overall IF indicators and the expected contribution of the project.
4. Existing Projects Under the IF: The GEF - Ningbo Water and Environment Project (GEF-NWEP) was the first project to be financed by the IF. This project provided a significant environmental enhancement to the IBRD-financed NWEP, which was approved by the World Bank in March 2005. Under NWEP, Cixi City, located on the coast of Hangzhou Bay and the East China Sea, would construct two wastewater treatment plants with a total treatment capacity of 150,000 m³/d. The GEF-NWEP would enhance Cixi's wastewater treatment strategy and coastal management through the provision of a constructed wetland to provide tertiary treatment at the largest of the two wastewater treatment plants. This pilot was expected to prove the technical and economic viability and increased environmental benefits of wetland treatment compared with the chemical tertiary treatment process more conventionally used in China. In addition, the project would support innovations in coastal management in China through the conservation of a natural coastal wetland for non-point source pollution control, establishment of

⁵ The original 12 countries included Brunei Darassalam, Cambodia, China, Indonesia, Japan, DPR Korea, R.O. Korea, Malaysia, Philippines, Singapore, Thailand and Vietnam. Three additional countries joined in 2005 (Lao PDR, Myanmar and Timor-Leste) making a current total of 15.

a wetland education center, and policy reform to support coastal wetland conservation and management.

5. The GEF – Second Shandong Environmental Project (SDEP2), the second project to be financed under the IF, was approved by the World Bank in February 2007. The GEF co-financing takes place within the Yantai wastewater component of SDEP2. GEF support would initiate and facilitate implementation of the proposed major institutional and technological task to demonstrate to Chinese municipalities the rationale of proper management of wastewater facilities. The key objectives are: to (a) demonstrate in the *pilot-size septic-tank project* the feasibility of institutional and technical arrangements ensuring improvement of local environment status, and (b) disseminate among Bohai Declaration signatories and beyond the feasibility of positive impact on reduction of pollution load annually discharged in the Bohai and Yellow Seas.

6. The GEF-Liaoning Medium Cities Infrastructure Project (LMC-2) was approved by the World Bank in June 2007 and is the third project financed under the IF. The LMC-2 project financed four wastewater projects and three solid waste leachate projects and will have a significant impact on reducing pollution into the Bohai Sea. GEF co-financing would be provided to promote institutional innovations to ensure the sustainability of environmental infrastructure. The key objectives are: (a) to improve public utility regulation and management, including a province-wide utility performance benchmarking system; (b) formulate strategic solid waste sector plans in three cities to ensure sustainable services including leachate minimization and treatment; and (c) develop strategic wastewater sector plans in three cities to ensure sustainable municipal wastewater management including industrial pollution control. The LMC-2 project will also help disseminate experiences, and provide examples, of innovative approaches to reducing land-based sources of marine pollution.

7. The GEF – Manila Third Sewerage Project (MTSP), approved by the World Bank in June 2007, is the fourth project financed under the IF. It builds on the IBRD Manila Third Sewerage Project, which supports wastewater collection and treatment in Metro Manila (MM). The GEF project is designed to remove barriers to investment in sewerage and sanitation and to pilot cheaper treatment technology for disposal of septage. Identifying roles of different agencies in the wastewater sector and gaps and overlaps in their responsibilities is also an important task of the GEF project. MM has seventeen local government units (LGUs), which need to coordinate their efforts in improving sanitation services with many government agencies and the private sector, such as the Department of Environment and Natural Resources, the Laguna Lake Development Authority, the Pasig River Rehabilitation Commission, and the Metropolitan Waterworks and Sewerage System and its two concessionaires. The GEF project will also enhance the capacity of LGUs to raise money to finance municipal wastewater collection and treatment.

8. The proposed GEF – Vietnam Coastal Cities Project is the fifth project to be financed under the IF. It builds on the IDA Coastal Cities Environmental Sanitation Project, which contributes to improving the environmental sanitation and to enhance the quality of life for residents in the project cities. The GEF project is designed to pilot and promote the replication of a new and more efficient wastewater treatment technology, which would contribute to improving the health and habitat conditions of globally significant marine and coastal ecosystems along the coastline of Vietnam and, through global oceanic circulation, other areas of the Pacific Ocean. The key actions to achieve the aims of the project will be: (i) reduction of sewage pollution loads through the development and establishment of low cost wastewater treatment technologies producing environmental incremental benefits; (ii) improvement of the management of service providers; and (iii) enhancement of the dialogue between public institutions and citizens through a program of dissemination and replication of project outcomes to other cities of the region.

**Table 1. Arrangements for results monitoring at the level of the Fund
(extracted from Fund Brief approved by GEF Council in November 2005)**

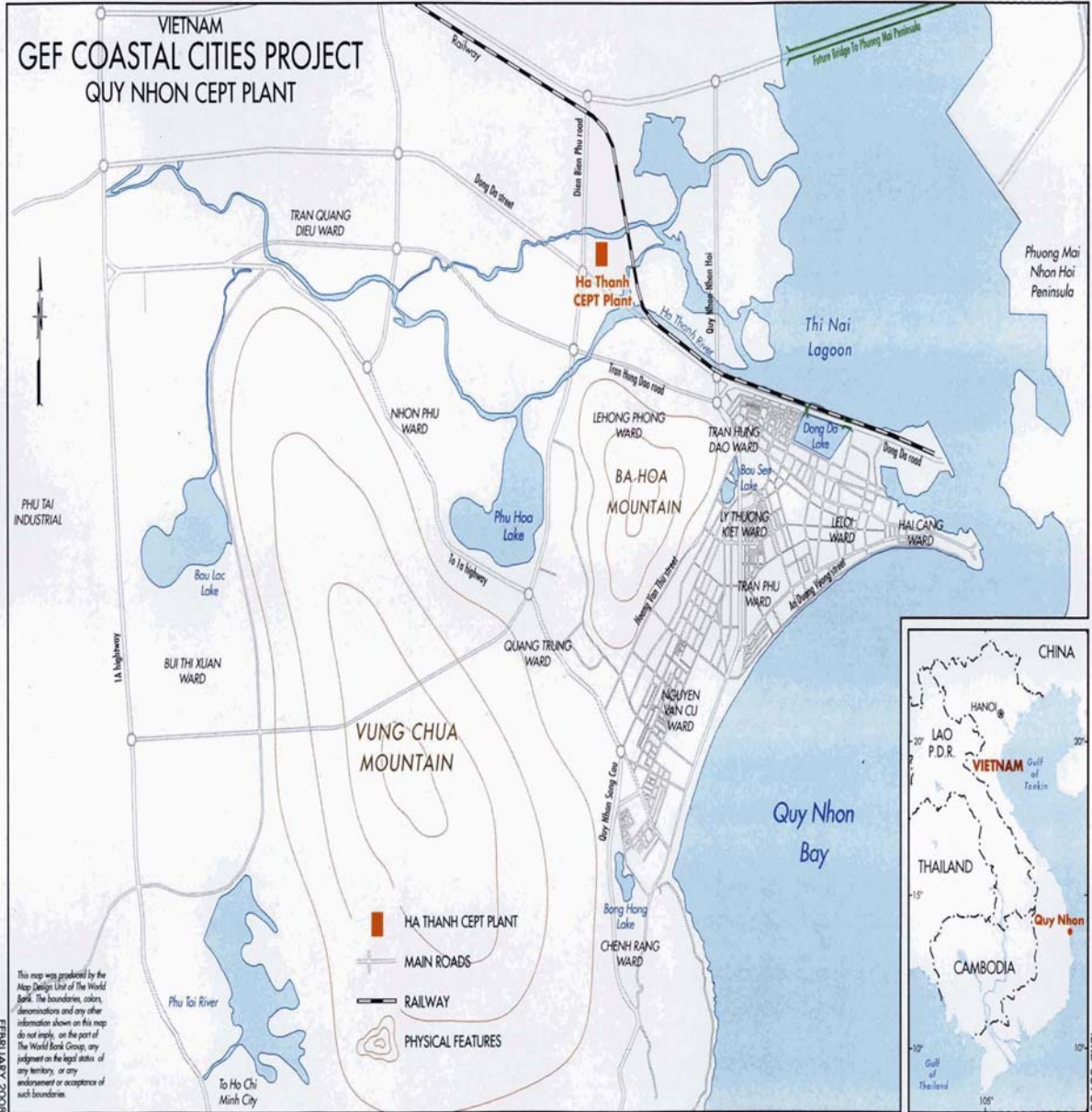
Outcome Indicators	Target indicators		Project reporting to Fund			Fund reporting to GEF			
	2010	2015	Frequency and Reports	Data Collection Instruments	Responsibility for Data Collection	Frequency and Reports	Responsibility for Data Collection		
Increased investment in pollution reduction (\$ million)	350 to 500	800 to 1,500	Annual project progress report (PPR) and Bank disbursement reports	PMO project implementation records, Bank disbursement data	PMO; Bank task team	Report annually to GEFSEC; Report to GEF Council at time of request for subsequent tranche	Fund Mgmt Team with data derived from World Bank project task team reporting		
Reduction in discharge of BOD to seas of East Asia (tons)	150,000	300,000	Annual PPR	Measurements by project implementing units, government statistics	PMO; Bank task team				
Result Indicators									
Removal of barriers to pollution reduction:									
Number of cost-effective technologies/ techniques demonstrated in specific country contexts	5	12	Annual PPR	Commissioning reports on investments	PMO; Bank task team				
Number of institutional and/or regulatory reforms approved and implemented	4	10	Annual PPR	Register of government regulations/decrees	Government agencies, PMO, Bank task team				
Financing through revolving funds:									
Number of countries that have established a revolving fund	1	4	Annual PPR	PMO project implementation records	PMO; Bank task team				
Minimum amount of capital invested in revolving funds (\$ million)	15	60							
Dissemination and replication of demonstrated technologies, techniques and mechanisms:									
Products: Number of publications	6	12	Annual PPR	PMO project implementation records	PMO; Bank task team				
Products: Number of project websites	6	12							
Events: Number of country workshops	6	12							
Events: Number of regional conferences/workshops participated in	2	5							
Mainstreaming of SDS-SEA in World Bank EAP operations:									
Number of Strategic Partnership Council meetings participated in by World Bank staff (events/year)	2	2	N/A	N/A	N/A				
Number of World Bank CAS which include Fund	3	5							

Table 2. GEF-Vietnam Coastal Cities Contribution to Fund targets

	Target Indicators	Explanation
Outcome Indicators		
2015		
Increased investment in pollution reduction (\$ million)	26.7 million	Estimated investment for wastewater infrastructure in Vietnam GEF Coastal Cities Project.
Reduction in discharge of BOD to seas of East Asia (tons)	Cumulative tons from 2012-2015: tbd	See PAD Annex 3 for details.
Result Indicators		
Removal of barriers to pollution reduction:		
Number of cost-effective technologies/ techniques demonstrated in specific country contexts	1	See PAD Annex 3 for details.
Number of institutional and/or regulatory reforms approved and implemented	-	Not applicable to this project.
Financing through revolving funds:		
Number of countries that have established a revolving fund	-	Not applicable to this project.
Minimum amount of capital invested in revolving funds (\$ million)	-	Not applicable to this project.
Dissemination and replication of demonstrated technologies, techniques and mechanisms:		
Products: Number of publications	1	See PAD Annex 3 for details.
Products: Number of project websites	1	Establish project website
Events: Number of country workshops	2	Participate in domestic workshops Organize one domestic workshop
Events: Number of regional conferences/workshops participated in	2	Participate in one international workshops
Mainstreaming of SDS-SEA in World Bank EAP operations:		
Number of Strategic Partnership Council meetings participated in by World Bank staff (events/year)	-	Fund level indicator, not applicable to individual projects.
Number of World Bank CAS which include Fund	-	Fund level indicator, not applicable to individual projects.

tbd: to be defined

Annex 18: Maps IBRD 35949 and IBRD 35950
VIETNAM: VN-GEF-Coastal Cities Project



VIETNAM GEF COASTAL CITIES PROJECT

- PROJECT CITY
- PROVINCE CAPITALS
- ⊕ NATIONAL CAPITAL
- RIVERS
- MAIN ROADS
- RAILROADS
- PROVINCE BOUNDARIES
- - - INTERNATIONAL BOUNDARIES

- PROVINCES:**
- | | |
|----------------|---------------------|
| 1 Lai Chau | 32 Thua Thien Hue |
| 2 Dien Bien | 33 Da Nang |
| 3 Lao Cai | 34 Quang Nam |
| 4 Ha Giang | 35 Quang Ngai |
| 5 Cao Bang | 36 Kon Tum |
| 6 Son La | 37 Gia Lai |
| 7 Yen Bai | 38 Binh Dinh |
| 8 Tu Yen Quang | 39 Phu Yen |
| 9 Bac Can | 40 Dak Lac |
| 10 Lang Son | 41 Dak Nong |
| 11 Phu Tho | 42 Khanh Hoa |
| 12 Vinh Phuc | 43 Binh Phuoc |
| 13 Thai Nguyen | 44 Lam Dong |
| 14 Bac Giang | 45 Ninh Thuan |
| 15 Quang Ninh | 46 Tay Ninh |
| 16 Ha Noi | 47 Binh Duong |
| 17 Bac Ninh | 48 Dong Nai |
| 18 Ha Tay | 49 Binh Thuan |
| 19 Hung Yen | 50 T.P. Ho Chi Minh |
| 20 Hai Duong | 51 Ba Ria-Vung Tau |
| 21 Hai Phong | 52 Long An |
| 22 Hoa Binh | 53 Tien Giang |
| 23 Ho Nam | 54 Dong Thap |
| 24 Thai Binh | 55 Ben Tre |
| 25 Ninh Binh | 56 An Giang |
| 26 Nam Dinh | 57 Vinh Long |
| 27 Thanh Hoa | 58 Tra Vinh |
| 28 Nghe An | 59 Kien Giang |
| 29 Ha Tinh | 60 Can Tho |
| 30 Quang Binh | 61 Hau Giang |
| 31 Quang Tri | 62 Soc Trang |
| | 63 Bac Lieu |
| | 64 Ca Mau |



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For detail, see IBRD 35950