

## PROJECT BRIEF

### 1. Identifiers

<b>Project Number:</b>	<i>[Implementing Agency Project Number not yet assigned]</i>
<b>Project Title:</b>	<b>Cambodia, China, Indonesia, Malaysia, Philippines, Thailand &amp; Viet Nam: Reversing Environmental Degradation Trends in the South China Sea<sup>1</sup> and Gulf of Thailand<sup>2</sup></b>
<b>Implementing Agency:</b>	United Nations Environment Programme (UNEP)
<b>Executing Agencies:</b>	Secretariat for the Action Plan for the Seas of East Asia (EAS/RCU); Ministries of Environment in each country.
<b>Requesting Countries:</b>	<i>Regional:</i> Cambodia, China, Indonesia, Malaysia, Philippines, Thailand & Viet Nam
<b>Eligibility:</b>	The countries are eligible under paragraph 9(b) of the GEF Instrument. The Strategic Action Programme is consistent with the relevant provisions of regional and global Conventions relating to International Waters to which the countries are signatories and/or contracting parties.
<b>GEF Focal Areas:</b>	International Waters with relevance to Biological Diversity

**GEF Programming Framework:** Waterbody-based Operational Program # 8

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### 2. Summary:

Major outcomes will include an approved Strategic Action Programme including, a targeted and costed programme of action and a recommended framework for improved regional co-operation in the management of the environment of the South China Sea; a series of national and regional management plans for specific habitats and issues; 9 demonstration management activities at sites of regional and global significance; a regional management plan for maintenance of transboundary<sup>3</sup> fish stocks in the Gulf of Thailand; pilot activities relating to alternative remedial actions to address priority transboundary pollutants and adopted water quality objectives and standards. Activities include national level analyses and reviews and management of demonstration activities and regional harmonisation and co-ordination of national level actions.

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### 3. Costs and Financing (Million US \$)

<b>GEF:</b>	Project	:	US\$	16.414
	PDF - B	:	US\$	0.335
	<b>Subtotal GEF</b>	:	<b>US\$</b>	<b>16.749</b>
<b>Co-financing:</b>	PDF-B (all sources)	:	US\$	0.252

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<sup>1</sup> The term "South China Sea" is used in its geographic sense and does not imply recognition of any territorial claims within the area.

<sup>2</sup> No activities shall be undertaken under this project in disputed areas of the South China Sea, nor shall issues of sovereignty be addressed directly or indirectly through project activities.

<sup>3</sup> In the context of GEF, the term "transboundary" refers to the causes of environmental degradation that operate at a distance from the site of impact. For example, the globalisation of trade and world price of shrimp are important causes of loss of mangroves in the South China Sea and the Gulf of Thailand.

UNEP (in cash & kind) <sup>4</sup>	:	US\$	0.630
Governments (in cash & kind) <sup>5</sup>	:	US\$	8.895
Other (estimated <sup>6</sup> )	:	US\$	6.622
<b>Subtotal Co-financing</b>	<b>:</b>	<b>US\$</b>	<b>15.769</b>
<b>Total Project Cost</b>	<b>:</b>	<b>US\$</b>	<b>31.683</b>

#### **4. Associated Financing (Million US \$)<sup>7</sup>**

<b>DANIDA-IOC</b>	<b>:</b>	<b>DKr</b>	<b>2.270</b>
<b>IOC-WESTPAC</b>	<b>:</b>	<b>US\$</b>	<b>1.887</b>
<b>HKUST</b>	<b>:</b>	<b>HK\$</b>	<b>18.000</b>
<b>SWOL</b>	<b>:</b>	<b>US\$</b>	<b>2.000</b>

#### **5. Operational Focal Point Endorsement(s)**

*Mok Mareth*, Honourable Minister, Ministry of Environment, Kingdom of Cambodia, Original received 15 March 1999; 2<sup>nd</sup> endorsement 17 August 2000.

*Jinlin Yang*, GEF Operational Focal Point for China, International Department, Ministry of Finance, Beijing, China. Endorsement received 21<sup>st</sup> September 2000

*Sudarsono*, Executive Secretary, State Ministry of the Environment, Jakarta, Indonesia 16 March 1999; 2<sup>nd</sup> endorsement *Effendi A. Sumardja*, Assistant to the Minister, State Ministry of the Environment, Jakarta, Indonesia. 29/8/2000.

*K. Nagulendran*, pp Secretary General, Ministry of Science, Technology & Environment, Malaysia. Original endorsement received 25 March 1999, 2<sup>nd</sup> endorsement *Nadzri Yahaya* pp Secretary General, 18 September 2000.

*Ramon J.P. Paje*, Undersecretary for Environment & Programs Development, Department of Environment & Natural Resources, Manila, Philippines, 23 March 1999.

*Chartree Chueyprasit*, Secretary General, Office of Environmental Policy & Planning, Bangkok, Thailand 19 March 1999; 2<sup>nd</sup> endorsement *Saksit Tridech*, Secretary General, Office of Environmental Policy and Planning, Bangkok, Thailand, 28 August 2000.

*Nguyen Ngoo Sinh*, Director general, Viet Nam National Environment Agency, Hanoi, Viet Nam. 23 March 1999.

**6. IA Contact:** Mr Ahmed Djoghlaif, Executive Co-ordinator, UNEP/GEF Co-ordination Office, UNEP, Nairobi, Tel: 254-2-624166; Fax: 254-2-624041; Email: Ahmed.Djoghlaif@unep.org

<sup>4</sup> Cash contribution is for the convening of COBSEA (210,000 US \$) meetings & is derived from the EAS Regional Trust Fund. The in-kind contribution is the estimated staff time for EAS/RCU professional and support staff to project co-ordination.

<sup>5</sup> This figure represents an estimate of the costs of national participation in the various project components and activities.

<sup>6</sup> This figure represents an in principle commitment to co-financing by the various collaborating entities, subject to detailed analysis during the appraisal phase.

<sup>7</sup> The present entries represent agreements in principle to co-ordinate the activities of these projects with those proposed in this document. It is anticipated that during the appraisal phase linkages will be established with other ongoing projects and that arrangements will be made to co-ordinate actions, hence this list is expected to be substantially increased by the time of final clearance.

## **LIST OF ACRONYMS**

ASEAN	Association of South East Asian Nations
EA	Executing Agency (for a GEF Project)
EAS/RCU	Secretariat (Regional Co-ordinating Unit) for the Action Plan for the Seas of East Asia
CBD	The United Nations Convention on Biological Diversity
COBSEA	Coordinating Body for the Seas of East Asia
FAO	Food & Agriculture Organization of the United Nations (Regional Office for Asia and the Pacific)
GDP	Gross Domestic Product
GEF	Global Environment Facility
GPA	Global Programme of Action for the Protection of the Marine Environment from Land Based Activities.
HKUST	Hong Kong University of Science and Technology
IA	Implementing Agency (of the GEF)
IMO	International Maritime Organization
IOC/WESTPAC	Intergovernmental Oceanographic Commission (Regional Secretariat for the Western Pacific)
LOICZ	Land Ocean Interactions in the Coastal Zone (Core Project of the IGBP)
MARPOL	International Convention for the Prevention of Pollution from Ships.
PDF-B	Project Preparation and Development Facility Grant Block-B
PEMSEA	Partnerships in Environmental Management for the Seas of East Asia
SAP	Strategic Action Programme
SARCS	Southeast Asian Regional Committee for START
START	System for Analysis, Research and Training (for global change)
SWOL	SARCS, WOTRO, LOICZ
TDA	Transboundary Diagnostic Analysis
UNDP	United Nations Development Programme
UNCLOS	United Nations Convention on the Law of the Sea
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WOTRO	Netherlands Foundation for Tropical Research

## PROJECT<sup>8</sup> DESCRIPTION

### BACKGROUND & CONTEXT - BASELINE COURSE OF ACTION.

1. The South China Sea represents an area of globally significant biological diversity. The Indo-west Pacific marine biogeographic province has long been recognised as the global centre of marine shallow-water, tropical biodiversity. Forty five species of mangrove from the global total of fifty seven; fifty of seventy coral genera; twenty of fifty species of seagrass; and, seven of nine giant clam species are found in the nearshore areas of the South China Sea. Compared to the Atlantic, the tropical Indo-west Pacific is highly diverse. Only five species of mangrove and some 35 coral species are found in the Atlantic compared with fifty one mangrove and over seven hundred coral species in the Indo-west Pacific. Over 400 species of corals are recorded from the Philippines compared with 200 species from the Red Sea, 117 from South East India and fifty-seven from the Persian Gulf.

2. This high biological diversity is not merely threatened by continuation of current unsustainable patterns of use, but has also been seriously degraded in the recent past. Recent estimates suggest that approximately 2 million hectares of mangrove forest or 12% of the world total are located in the countries bordering the South China Sea. This represents only 31% of the estimated total found in these countries at the start of this century. Estimated rates of loss in each country range from around 0.5 to 3.5% of total area *per annum* and continuation of these present trends could result in total loss of this habitat in the region by around 2030. Eighty two percent of the coral reefs surveyed under collaborative ASEAN projects in the South China Sea display evidence of degradation while other estimates suggest that 50% of Philippines and 85% of Indonesian reefs can be considered as being at high risk. The high species diversity of the shallow water habitats, combined with the variation in geomorphic and geological setting and formation type, contribute to the global significance of these habitats in this region.

3. In addition to its significance as a global centre of shallow water marine biological diversity, the South China Sea supports a significant world fishery of importance to the food security, and as a source of export income, for the countries bordering this sea. Capture fisheries from the South China Sea contribute 10% of the world's landed catch at around five million tons per year and five of the eight top shrimp producers in the world are border states of the South China Sea (Indonesia, first; Viet Nam, second; China, third; Thailand, sixth; and, the Philippines, eighth.). The countries of the region produce 23% of the world tuna catch and almost three-quarters of the world's canned tuna. The share of world production of aquaculture products including shrimp rose from 46% in 1984, to 66% in 1994. The proportion of shrimp produced through extensive culture is high, contributing significantly to the loss of mangroves and other coastal habitats bordering the South China Sea.

4. The fisheries sector is significant in the context of domestic food security for the participating countries. Fish consumption is highest in the Philippines and least in Cambodia. Demersal fisheries within the region are fully exploited with evidence showing that the landings of many species are currently declining. The decline in fish availability in the subsistence sector

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<sup>8</sup> This project document shall not be used as a reference in support of any sovereignty position by any party or country.

has led to the adoption of destructive fishing practices such as blast fishing. Based on present consumption patterns and population growth rates, Cambodia, the Philippines and Viet Nam will have to produce significantly more fish by 2005 just to meet domestic demand. Pressure on the coastal resources is therefore likely to increase significantly in the immediate future. Despite nutritional requirements and current population growth rates, the countries surrounding the South China Sea are generally net exporters of fishery products. Since the need to generate foreign exchange to buy capital inputs for industrialisation is a higher priority than food security, this trade pattern is likely to continue, unless policy shifts occur that result in food security becoming a higher priority in the national agendas of participating countries.

5. The programming context of this project is the GEF Operational Programme #8 which states: *“the GEF will play a catalytic role in assisting a group of countries to leverage co-financing..... for necessary elements of a comprehensive approach for sustainably managing the international waters environment” [para 8.2].* In addition this operational programme further states that: *“Projects in this Operational program focus mainly on seriously threatened water-bodies and the most imminent transboundary threats to their ecosystems. [para 8.3]”* The present project proposal meets these requirements and will assist the countries of the region in meeting their obligations under various global conventions relating to biological diversity and the marine environment. In addition, the specific activities proposed under this project are complementary and additional to those supported by the Environment Fund of UNEP as part of its regular mandate and programme within the framework of the Regional Seas Programme.

6. Recognising that actions to date have failed to halt degradation of the environment of the South China Sea, the countries of the region sought the assistance of UNEP and the Global Environment Facility (GEF). The XII<sup>th</sup> intergovernmental meeting of the Coordinating Body for the Seas of East Asia (COBSEA), in December 1996 endorsed a request for grant assistance from the GEF. The GEF made available a project preparation and development facility grant (PDF-B) to enable countries to prepare the necessary analyses and reviews. In accordance with the GEF Operational Strategy a Transboundary Diagnostic Analysis and Framework Strategic Action Programme were prepared.

7. National committees were formed in each participating country to prepare a comprehensive, country-based analysis of water-related environmental problems and concerns. The first drafts of the national reports<sup>9</sup> were submitted and evaluated prior to a second meeting of national co-ordinators in June, 1998 which, prepared a comparative weighting of all identified major issues. On the basis of the national reports a Transboundary Diagnostic Analysis (TDA) was prepared which provides the scientific and technical basis for the choice of priority actions proposed in this project and which served as the basis for development of a framework Strategic Action Programme (SAP). The TDA identifies the regional priorities among water-related problems and concerns, their socio-economic and sectorial root causes, and the extent to which the problems are transboundary in either origin or effect. The process of developing the framework SAP has involved a comprehensive and exhaustive analysis of existing national and international agreements, intergovernmental and regional declarations, past and ongoing projects, actions and programmes relevant to the environment of the South China Sea.

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<sup>9</sup> The National Reports, TDA and SAP are available from the UNEP Co-ordination Unit in Bangkok – Annex E

8. The National reports, the Transboundary Diagnostic Analysis, and the Framework Strategic Action Programme were all submitted to the XIII<sup>th</sup> intergovernmental meeting of COBSEA. This meeting endorsed the framework SAP that contains an outline of this proposed GEF project, and requested UNEP to formulate a GEF project brief for submission to the GEF (this document) to address the priority actions identified in the SAP. A key element of this project is actions that will lead to the further elaboration and development of the present Framework Strategic Action Programme. It is the intention of participating governments that this process of elaboration be undertaken over the next three years with a view to their endorsing and adopting a final draft during an intergovernmental meeting to be held in December 2003.

9. The TDA suggests that a major cause of coastal environmental degradation is the present density and growth of coastal populations. A total of 270 million people live in the coastal sub-regions of the seven countries covered by this project. The population is concentrated in 93 cities with over 100,000 inhabitants and the weighted mean population growth rate in the coastal zone is 2.17%, indicative of doubling of populations in 32 years. In Cambodia, Indonesia and Malaysia, growth rates in the coastal sub-regions are 1.5 to 2.0 times the national growth rates. Population densities are highest for the coastal sub-regions of China and the Philippines at 471 and 472, people km<sup>-2</sup>; Malaysia and Cambodia are least dense at 31 and 49, persons km<sup>-2</sup>. In Viet Nam, higher densities of between 500 and 1,000 people km<sup>-2</sup> are found along the northern part of the Gulf of Tonkin. Tourism, increasing fisheries development, and oil exploration and exploitation, are among the major economic driving forces behind this dramatic increase in coastal populations.

10. The participating countries are at various stages of industrialisation. Cambodia, with the lowest national GDP of US \$ 0.12 million earns 45% of this from agriculture, and 20% from industry. In contrast, Indonesia relies on the industrial sector for 57% of its GDP. On the basis of national data, for *per capita* GDP the countries can be ranked as follows: Malaysia > Thailand > China > Philippines > Indonesia > Viet Nam > Cambodia. The rapid economic development that has occurred in this region over the last decade has taken place largely at the expense of the environment. A significant barrier to planning for more environmentally sustainable modes of development has been the absence of adequate economic evaluation of habitats and the goods and services they provide, resulting in development decisions being made on the basis of short-term economic gains.

11. Numerous actions are taking place at the national and regional levels to address the environmental problems that have resulted from the rapid pace of development and industrialisation, which has occurred over the last decade. Thailand for example, has an extensive national mangrove reforestation programme, Philippines has several localised programmes of coastal zone management, including examples of community based approaches to management, and all countries have activities and programmes related to the conservation of significant biological diversity including wetlands. Many of the actions at national level are undertaken outside the framework of co-ordinated programmes resulting in significant duplication and overlap.

12. Within the wider East Asian Seas region the GEF/UNDP/IMO regional Programme on Building Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) is directly relevant to the objectives of this project, although the approaches, modalities of execution and geographic coverage of the two projects are different. The present proposal is

complementary since it focuses on regional scale interventions designed to halt or reduce the present rates of environmental degradation in respect of habitat loss or degradation, over-exploitation of fisheries and regionally significant transboundary pollution. By closely co-ordinating the two GEF funded projects, mutual value-added benefits will be derived.

13. Unresolved territorial disputes are a source of sensitivity in the region. Over the last several years the countries have demonstrated a willingness to co-operate in matters relating to environmental management, and there is an increasing recognition that the benefits resulting from co-operative environmental management actions are not dependent on the resolution of such sensitive issues. Recognising the sensitivities of the area however, it has been agreed that no activities shall be undertaken under this project in disputed areas of the South China Sea, nor shall issues of sovereignty be addressed directly or indirectly through project activities.

14. The lack of a regionally co-ordinated approach to remedial actions significantly reduces their effectiveness, and recognising this the countries bordering the South China Sea have initiated a number of joint programmes involving two or more countries within the region. These include *inter alia*, the major oceanographic and fisheries studies of the Gulf of Thailand, the East Asian Seas Action Plan of UNEP, the Regional work of the FAO, and the deliberations of the South China Sea Informal Working Group.

15. In the absence of a GEF intervention it is probable that the present types of intervention, which have been demonstrated over the last twenty years as being ineffective in halting the pace of environmental degradation, will continue. Without a concerted regional approach to environmental management it is unlikely that the present rates of habitat degradation will be slowed. The likely consequence of such a scenario is the loss of globally significant biological diversity over the next century.

#### **RATIONALE AND OBJECTIVES (ALTERNATIVE)**

16. The actions proposed in the framework Strategic Action Programme are wide ranging in both context and proposed areas for action. Successful implementation of the Programme will depend upon co-ordination of actions by diverse organisations, agencies, non-governmental organisations, private sector, government entities and stakeholder groups at both the national and regional levels. Such regional co-ordination of actions will be undertaken by UNEP and entails significant transaction costs but can potentially generate significant benefits in reducing duplication of effort and improving the effectiveness of individual uncoordinated actions.

17. The overall goals of this project are: to create an environment at the regional level, in which collaboration and partnership in addressing environmental problems of the South China Sea, between all stakeholders, and at all levels is fostered and encouraged; and to enhance the capacity of the participating governments to integrate environmental considerations into national development planning.

18. The medium term objective of the project is to elaborate and agree at an intergovernmental level, the Strategic Action Programme encompassing specific targeted and costed actions for the longer-term, to address the priority issues and concerns. More specifically the proposed activities (Table 1) are designed to assist countries in meeting the environmental targets specified in the framework SAP that was developed over period 1996-1998 (Annex D).

19. Some of the specific environmental targets set within the framework SAP extend beyond the projected life of the present project. These targets are summarised in Annex D whilst the logical framework matrix presented in Annex B outlines the milestones and indicators that can be used to measure progress towards achieving these targets over the life of the project.

## **PROJECT ACTIVITIES/COMPONENTS AND EXPECTED RESULTS**

20. The project is divided into four major components, namely:

- 1) *Habitat Degradation and Loss*
- 2) *Over Exploitation of Fisheries in the Gulf of Thailand*
- 3) *Land-based Pollution*
- 4) *Project Co-ordination and Management*

21. These components reflect the priority ranking determined at a regional level (Annex D) in which habitats and biodiversity related concerns and over-exploitation of marine resources ranked higher than either pollution or freshwater related concerns. Within the comparative ranking of importance of the habitats in the region, mangroves and coral reefs ranked significantly higher than seagrasses and estuaries/wetlands. Over-exploitation of marine resources ranked almost as high as coral reef degradation whilst from among the pollution related issues land-based pollution and in particular sewage were considered the most important pollution issue in the region. Overall, pollution was considered less important than either, habitat degradation and loss, or over-exploitation of marine resources.

22. Actions at the national level, proposed within **Component 1** relating to habitat degradation and loss are detailed under four sub-components addressing the four priority habitats in the region. Activities within each sub-component include: establishment or re-vitalisation of National Committees or technical working groups, to review national data on biodiversity; management; restoration and development activities impacting each habitat; research and publications; economic evaluation; institutions and legislation; and development of compatible, inter-linked national systems for regional data management. These preparatory actions will provide the background against which to develop or update national management plans, including required legislation, in order to maintain nationally important habitat areas. National, public meetings will be convened for presentation and review of the plans, prior to their adoption by Governments.

23. At the regional level, task teams will be formed, and meetings convened to: develop guidelines for national management plans to maintain regionally significant habitat areas of transboundary significance; draft and finalise, for adoption by governments, the criteria for the selection of priority transboundary habitat areas; apply the criteria to identify and prioritise areas for future management, protection/restoration; select 3 regional priority sites within each habitat class for initiation of demonstration projects; develop and adopt regional priority actions for inclusion in the revised SAP designed to meet the agreed targets of the framework SAP. Regional guidelines for conservation of each of the four habitats of Component 1 will be arrived at between participating countries. Sub-component 1.5 will involve consideration by a regional meeting of senior advisors of the recommendations of each of the regional task teams to ensure

overall conformity between the sites of recommendations and to formulate overall recommendations for inclusion in the Strategic Action Programme. The outputs from these activities will be reviewed and adopted at high level intergovernmental meetings which will also adopt a regional portfolio of priority management projects and approve the selection of the sites for initiation of the demonstration projects.

24. Coral reef activities will not be executed on oceanic coral systems but will focus on non-oceanic reef systems outside disputed areas. It is agreed that, in the initial phase, coral reef sites of the project will be selected from those Southeast Asian countries participating in the project. The final sites will be recommended by the regional expert group, reviewed and accepted by the participating countries, and subject to the approval of the Project Steering Committee. The present project will not duplicate the activities pursued by other similar projects, including GEF projects. UNEP, serving as the Secretariat of the project, will invite all participating countries of the project, to participate in the activities, including meetings, workshops, seminars, etc. related to the coral reef activities designing, planning and implementation as well as capacity building efforts, e.g. training.

25. **Component 2** focuses on transboundary fisheries issues in the Gulf of Thailand, but does not exclude national level demonstration activities in the Philippines or Indonesia. All activities will be subject to the approval of the Project Steering Committee. Activities are grouped into four sub-components the first of which is designed to secure agreement on the nature of joint actions required to address identified problems in the Gulf of Thailand. A task team will be formed to: develop sub-regional, and national management plans for the spawning and nursery areas of regional and transboundary significance in the Gulf of Thailand. The task team will be responsible for development of criteria to determine the national, sub-regional and transboundary significance of spawning and nursery areas; and for the application of these criteria to determine priorities for management action within the Gulf of Thailand. These activities will result in the establishment of a system of *refugia* to maintain important transboundary fish stocks in the Gulf of Thailand based on marine protected areas identified as critical habitats for fish stock conservation and protection

26. This component includes required actions at national level by the countries bordering the Gulf of Thailand to: protect endangered species; evaluate a prototype blast fishing detection system; develop and implement programmes to provide information at the community level, on fish stock conservation and sustainable fishery practices among small and artisanal fishing communities; and to promote the FAO Code of Conduct for Responsible Fisheries through national and regional workshops. Countries participating in this project from outside the Gulf of Thailand are welcome to participate in the activities.

27. **Component 3** addresses the major problem of land-based pollution through an initial review of national standards and controls, and an examination of actions required to: harmonise such standards at a regional level; review and assess existing knowledge of regional water quality, determine information gaps, evaluate carrying/assimilation capacity of sub-regions and sensitive ecosystems and transboundary movements of contaminants within the South China Sea; produce guidelines/action programmes for implementation of the GPA at the national and regional level; and prepare guidelines for the development of national management plans,

including capacity building; legislation, and other appropriate components to achieve the agreed water quality objectives; review national capacity to test, monitor, control and enforce water quality and effluent standards and to develop and finalise national and regional management plans to reach specified objectives within defined time frames that will be incorporated into the Strategic Action Programme for the South China Sea; and to initiate capacity building activities and demonstration projects addressing specific pollutants of global, regional and transboundary significance.

28. Once agreement has been reached on regional water quality objectives and standards, criteria will be developed and adopted for evaluating the regional and transboundary importance of pollution "hot spots" identified in the Transboundary Diagnostic Analysis (severity of pollution, feasibility/ease of mitigation, transboundary effect). The criteria will be applied to all nationally identified hot spots in order to agree on a regional priority listing for investment. A preliminary evaluation of the costs and benefits of alternative mitigation measures for selected priority hot spots will be undertaken together with pre-feasibility studies for appropriate mitigation measures for priority pollution sources. A South China Sea strategic approach to mitigating priority regional hot spots (including priority investment portfolio, cofinancing arrangements, national and regional actions) will be developed and agreed for inclusion in the Strategic Action Programme for the South China Sea.



29. **Component 4, Project Co-ordination and Management** is concerned with regional co-ordination of the project and related activities, and management of the project implementation. Initial actions include: appointment of project staff; nomination by the COBSEA Focal Points of Government representatives to the Project Steering Committee and convening of the first meeting to agree the framework master plan for project management and execution; appointment of National Focal Points to Chair the National Inter-ministry Steering Committees and initial country visits by the regional co-ordination staff to meet with the National Steering Committees and prepare national workplans and budgets. Four regional scientific and technical conferences are planned during the course of the project that will be convened in close association with the meetings of the COBSEA to review results and recommendations of the national and regional working groups and to establish and re-reinforce the linkages between the sectorial working groups. In addition particular attention will be paid to establishing strong linkages with the World Bank/GEF Mekong River Project and the GEF/UNDP/IMO PEMSEA project.

30. The Project Steering Committee, as the supreme decision-making body of the project, will be composed solely of representatives of the participating countries of the project. The Committee shall be responsible for reviewing and approving, on an annual basis, project activities, including the location of demonstration sites to be funded by the GEF project. UNEP will act as Secretariat of the Committee. During the execution of the project, decisions of the Project Steering Committee will be made through consultation and on the basis of consensus by all participating countries of the project.

**Table 1 Workplan & Timetable - Overall duration of the project 69 months including the appraisal phase.**

Component <sup>10</sup>	Appr. Phase		GEF Project Implementation <sup>11</sup>																	
Sub-component	2000		2001			2002			2003			2004			2005			2006		
1. Habitat Degradation & Loss																				
1.1 Mangroves																				
1.1.1 National Mangrove Committees; data reviews.(N)																				
1.1.2 Development & adoption of national management plans (including legislation) (N)																				
1.1.3 Regional expert meetings; criteria; priority areas & actions; (R)				E			E			E										
1.1.4 Project Steering Group & Intergovernmental meetings (R)																				
1.1.5 Implementation of 3 demonstration projects (N & R).																				
1.2 Non-oceanic Coral Reefs																				
1.2.1 national non oceanic coral reef working groups; data reviews (N)																				
1.2.2a Prepare & adopt national legislation and management plans (N).																				
1.2.3 Regional task team; regional data man.; criteria; priority areas and actions (R) .				E			E			E										
1.2.4 Project Steering Group & Intergovernmental meetings (R)																				
1.2.5 Implementation of 3 demonstration projects <sup>12</sup> (N & R).																				
1.3 Seagrasses																				
1.3.1 National seagrass working groups; data reviews (N)																				
1.3.2 Prepare & adopt national management plans (N).																				
1.3.3 Regional task team; criteria; priority areas and actions (R).			E		E					E										
1.3.4 Project Steering Group & Inter-governmental meetings (R).																				
1.3.5 Implementation of 3 demonstration projects (N & R).																				
1.4 Wetlands																				
1.4.1 National wetlands working groups (N)																				
1.4.2 Review, & implement management regimes & legislation (N)																				
1.4.3 Regional expert task team (R); regional review; criteria, guidelines; priority areas and actions, portfolio (R)				E			E			E										
1.4.4 Project Steering Group & Intergovernmental meetings (R).																				
1.5 Elaboration of habitat component of SAP																				

<sup>10</sup> N = National level activity; R = Regional level activity.

<sup>11</sup> E = Regional expert meeting;  inception phase (periods of intense project related activities);  operational phase (periods of reduced intensity of activities relating to project execution).

<sup>12</sup> see para 24.

**Table 1 continued    Workplan & Timetable - Overall duration of the project 69 months including the appraisal phase.**

Component	Appr. Phase	GEF Project Implementation																							
Sub-component	2000	2001				2002				2003				2004				2005				2006			
2. Over Exploitation of fisheries in the Gulf of Thailand																									
2.1 Regional determination of priorities for action		E	E		E		E		E																
2.1.1 Regional Task Force; regional fisheries overview (R)																									
2.1.2 Criteria for stocks and areas & priority actions (R)																									
2.2 Develop regional and national management plans																									
2.3 Evaluation of a prototype blast fishing detection system																									
2.4 Information and public awareness																									
2.4.1 Provide info. to artisanal fishers in the priority areas;																									
2.4.2 Workshops on Code of Conduct for Responsible Fisheries						E			E		E		E		E										
3. Land-Based Pollution																									
3.1 Regional Water Quality standards (2005)		E	E		E	E		E																	
3.1.1 working groups; review data (N & R)																									
3.1.2 Prepare & adopt regional water quality objectives & standards																									
3.1.3 National and Regional management plans (N & R)																									
3.1.4 Capacity building & demonstration activities (N & R)																									
3.2 Determination of Regional Priority Hot Spots (2005)																									
3.2.1 Criteria; priority actions and areas																									
3.2.2 Evaluation of costs & benefits & pre-feasibility studies																									
3.2.3 Adopt a strategic approach to priority transboundary hot spots for inclusion in the SAP for the SCS																									
4. Project Co-ordination and Management																									
4.1 Establishment of co-operative framework																									
4.2 Convening of regional expert meetings for elaboration of the SAP.				E			E			E			E			E									

31. A regional expert working group will be convened to: review the current obligations of countries under Global Conventions including *inter alia* the UNFCCC, the CBD, the UNCLOS, and MARPOL; review the similarities and differences between national legislation; consider ways in which such legislation might be harmonised to achieve the common objectives of the countries as expressed in the Strategic Action Programme; prepare recommendations concerning the optimum mode of countries meeting their obligations under the global conventions and thus protecting the environment of the South China Sea. It is anticipated that the recommendations of this group will be considered by a high level intergovernmental meeting for inclusion as activities in the revised Strategic Action Programme.

## **RISKS AND SUSTAINABILITY**

32. The Logframe matrix presented in Annex B details the project related risks and assumptions however, two external risks may affect the operation of this project:

- a) A number of unresolved territorial disputes could potentially disrupt the smooth operation of this project. Over the last several years the countries have demonstrated a willingness to co-operate in matters relating to the environment of the South China Sea, through: bilateral programmes and active participation in regional programmes including the East Asian Seas Action Plan of UNEP, the regional work of the FAO, and of the IOC-WESTPAC. There is increasing recognition that the benefits resulting from co-operative actions in managing the environment of the South China Sea are not dependent on a resolution of the unresolved issues. The project explicitly addresses this risk through agreement that no activities will be undertaken in geographic areas under dispute and that issues relating to sovereignty will not be addressed either directly or indirectly during project activities, hence the risks of potential disruption to the project seem likely to be small.
- b) The recent economic crisis in the region may: adversely affect the ability of the countries to contribute significantly to the co-financing of the project; significantly impact the budget of the project should the currencies of the countries in the region recover significantly during the life of the project. The impacts of the economic crisis in the region have been taken into account in the calculation of the baseline contributions of the countries to this project. In the event that currencies recover all, or some of the 30-40 % devaluation that has occurred over the last two years, adjustments to the activities in the latter half of the project will be made or additional co-financing sought. A partnership conference with potential donors is planned prior to the initiation of demonstration projects and it is at this time that adjustments to the overall project budget may be made depending upon the extent of recovery of currency values.

33. A substantial proportion of the assured co-financing by governments is derived from the re-allocation of existing staff and recurrent budgets of the involved ministries and government departments to project activities. It is anticipated that project activities will strengthen the influence of these ministries at a national level and hence encourage substantial increases in the recurrent budgets of the departments concerned in the future. The countries already contribute

financially to regionally co-ordinated actions and such contributions are anticipated to increase as a consequence of this project.

34. Regarding the sustainability of activities and components beyond the life of the project, it should be noted that a number of the proposed activities during the first three years of the project are preparatory in nature with a defined life span. The need for such actions reflects the inadequacy of the present data and information available to assess regional priorities in a totally objective manner. In elaborating the data and information in parallel with refining the SAP, mechanisms will be put in place that require minimal recurrent inputs at the national level to ensure their continued operation beyond the life of the project. It is anticipated that the regional framework for co-operation will be strengthened through undertaking this project, such that the recurrent costs of subsequent regional co-ordination will be met from within the region.

35. Of greater importance from the perspective of sustainability is a consideration of the demonstration activities and their impacts region wide. Approximately 9 demonstration sites are to be selected during the first two years of project initiation. An important consideration in the selection of these sites, other than their global and regional, significance will be the willingness of Governments to maintain the actions and activities beyond the life of the project. To some extent this will be assured through selection of initial sites that are considered to be of both national and regional significance, and are already the subject of management intervention at a national level - i.e. a “win-win” criterion will be applied during selection.

36. It should be recognised however, that 9 demonstration sites will not guarantee that the SAP targets are met. Considerable additional inputs will be required to ensure that the lessons learned are transferred from these nine sites to others in the region that will require government commitment of manpower and financial resources. Recognising the economic crisis that the countries of the region have suffered, this project specifically seeks to convene two partnership conferences to assist the governments in seeking bilateral and multi-lateral financing for such activities.

## **STAKEHOLDER PARTICIPATION AND IMPLEMENTATION ARRANGEMENTS**

37. The primary stakeholders in this project are the Ministries of Environment, of Agriculture (Fisheries) and Forestry of the participating countries. Through establishment of inter-ministry dialogue it is anticipated that wide involvement of other ministries and government departments will be assured, resulting in high level government acceptance of the outcomes of the preparatory activities and hence approval of the Strategic Action Programme. Governments will retain oversight through the meetings of the Project Steering Committee and the periodic meetings of the intergovernmental Co-ordinating Body for the Seas of East Asia (COBSEA) which will also serve as a forum for regional approval and endorsement of the anticipated outputs, including the Strategic Action Programme.

38. A number of activities involve community based stakeholders in the fishery sector although precisely which ones cannot be stated until such time as the demonstration sites have been selected. The process of selection will of necessity involve consultations with local community groups since their active participation will be essential to the success of these

activities. A number of scientific and environmental NGO's at national and regional levels have been involved in the PDF-B phase of the project and participation of National NGO groups will be continued during the execution of the project.

39. Recognising the sensitivity of the South China Sea which includes areas of unresolved territorial dispute, and the desire of some of the governments involved not to "internationalise" issues surrounding the South China Sea, no international organisations (neither inter-governmental nor, non-governmental) other than UNEP will be involved in project design and execution. This decision of the participating countries has significant implications in terms of the transaction costs at a regional level (see Annex A). Both individual experts and national institutions that are members of such organisations may be engaged in project activities in their individual capacity under the direction of UNEP.

40. Regional co-ordination of actions entails significant transaction costs but can potentially generate even greater benefits in reducing duplication of effort and improving the effectiveness of individual uncoordinated actions. It is the intention of the participating countries that all actions be undertaken in a spirit of collaboration and partnership, to enhance synergy between on-going initiatives at national and regional levels, and to eliminate duplicative and conflicting actions.

41. As noted above, oversight on behalf of the Governments will be the responsibility of the Project Steering Committee, which will convene meetings in conjunction with those of COBSEA. The Project Steering Committee's primary responsibility will be to ensure synergy and integration in the planning and execution of the project sub-components. At the national level the national co-ordinators will be responsible for convening regular meetings of the national inter-ministry committees which should include within their membership, the chairs of the various national technical and expert committees created in support of each component and/or sub-component. Regional technical expert groups will be convened to prepare reviews and recommendations and their membership will be drawn from the national committees and working groups and other regional experts. In the case of Component 1, the number of regional expert groups (4) will necessitate the creation of a regional "aquatic biodiversity advisory group" comprised of senior experts from the region to advise the Project Steering Committee on matters relating to the execution of the mangroves, non-oceanic coral reefs, seagrass and wetlands components.

42. With the approval of the Project Steering Committee, co-ordination with the work of the Mekong River, World Bank/GEF project will be assured through convening of joint expert group meetings, and through participation of experts from each project in meetings of the other, as appropriate. Similar arrangements will be made with the GEF/UNDP/IMO, PEMSEA Project, together with joint planning of workshops and groups of expert meetings to ensure complementarity and provide mutual support to the activities undertaken by each project. Similar arrangements may be negotiated during the appraisal phase with other major non-GEF funded projects and programmes in the region.

## **INCREMENTAL COSTS AND PROJECT FINANCING**

43. Table 2 presents an incremental cost table based on the component costs presented in Table 3 and the more detailed analysis contained in Annex A. As noted in that Annex, benefits

under this project accrue at the global, regional and national levels. Direct environmental benefits that accrue as a consequence of project activities will be small since much of the project is concerned with establishing the regional framework for future concerted and co-ordinated action. Considerable environmental benefits are anticipated to arise through enhancement of the capacity of participating governments to manage their environment in a regionally harmonised manner.

**Table 2 Baseline and Incremental Costs and global and domestic environmental benefits.**

	<b>Baseline</b>	<b>Alternate</b>	<b>Increment</b>
<b>GLOBAL ENVIRONMENTAL BENEFITS</b>	<b>8.722</b>	<b>25.471</b>	<b>16.749</b>
<b>PDF-B Phase</b>	0.252	0.587	0.335
<b>Component 1 - Habitat degradation &amp; loss</b>			
<b>Sub-Component 1.1 - Mangrove management</b>	1.788	4.521	2.733
<b>Sub-Component 1.2 – Non –Oceanic Coral reef management</b>	1.750	4.337	2.587
<b>Sub-Component 1.3 - Seagrass management</b>	1.784	4.313	2.529
<b>Sub-Component 1.4 - Wetland management</b>	0.230	1.205	0.975
<b>Component 2 -Over-exploitation of fisheries in the Gulf of Thailand</b>	1.548	3.198	1.650
<b>Component 3 -Land-Based Pollution</b>	0.571	2.331	1.760
<b>Component 4 -Project Co-ordination and Management</b>	0.799	4.379	3.580
<b>Executing Agency Overheads</b>	0	0.600	0.600
<b>DOMESTIC ENVIRONMENTAL BENEFITS</b>	<b>6.812</b>	<b>6.812</b>	<b>0</b>
<b>PDF-B Phase</b>	0	0	0
<b>Component 1 - Habitat degradation &amp; loss</b>			
<b>Sub-Component 1.1 - Mangrove management</b>	2.171	2.171	0
<b>Sub-Component 1.2 – Non-oceanic Coral reef management</b>	2.136	2.136	0
<b>Sub-Component 1.3 - Seagrass management</b>	2.106	2.106	0
<b>Sub-Component 1.4 - Wetland management</b>	0.252	0.252	0
<b>Component 2 Over-exploitation of fisheries in the Gulf of Thailand</b>	0.147	0.147	0
<b>Component 3 - Land-Based Pollution</b>	0	0	0
<b>Component 4 - Project Co-ordination and Management</b>	0	0	0
<b>Monitoring &amp; Evaluation Costs</b>	0	0	0

44. Adopting a regional approach to concerted action carries with it transaction costs associated with networking national institutions and organisations, and the national governments. Whilst not all of these costs are strictly incremental since national benefits derive from sharing of regional experiences, it is certainly the case that without a GEF intervention such costs will not be met since they result in little direct national benefit. The countries of the region are clearly committed to a regional approach as evidenced by their commitment to the PDF-B process and their adoption of the framework SAP and its associated targets. The costs of actions that result in direct national benefit are those associated with the demonstration activities where the countries concerned will undoubtedly derive national benefit from the interventions. This has been accounted for in the incremental cost table, however precise calculation of the proportion of benefits accruing at each level is not possible until such time (year 3) as the precise locations for the demonstration activities are selected (Annex A).

45. Table 3 presents the project budget and component financing. The total cost of the project (including the PDF-B phase) is 31.7 million dollars of which 9.1 million is the anticipated costs

to the government in cash and in kind of the present project. Of this sum 5.8 million dollars is expected in cash inputs to the demonstration activities in years 4 and 5 of the project. The bulk of the remaining government co-financing is in kind during the preparatory years leading up to execution of these demonstration activities. Significant co-financing is assured in principle from a number of sources, subject to the approval of the core funding by the GEF.

46. UNEP will establish a specific Trust Fund for receipt of donor contributions to the co-financing of project activities. Donors as such will not impose any conditions on specific use of the Trust Fund, nor will they get involved directly, or indirectly, in project design, appraisal, negotiation and implementation.

**Table 3 Project budget summary and component financing in million US \$**

Project Activities	GEF	Co-financing		Grand Total
		Governments	Other Sources	
<b>1. Habitat Degradation &amp; Loss</b>				
1.1 Mangroves	2.733	2.374	1.585	6.692
1.2 Non-oceanic Coral Reefs	2.587	2.326	1.585	6.473
1.3 Seagrass	2.529	2.305	1.585	6.419
1.4 Wetlands	0.975	0.400	0.082	1.457
<b>2. Over-exploitation of fisheries in the Gulf of Thailand</b>	1.650	0.735	0.990	3.345
<b>3. Land-based Pollution</b>	1.760	0.461	0.110	2.331
<b>4. Project Co-ordination and Management</b>	3.580	0.294	0.685	4.379
<b>EA Overheads</b>	0.600			0.600
<b>PROJECT TOTAL</b>	<b>16.414</b>	<b>8.895</b>	<b>6.622</b>	<b>31.096</b>
<b>PDF-B</b>	0.335	0.176	0.076	0.587
<b>GRAND TOTAL</b>	<b>16.749</b>	<b>9.071</b>	<b>6.698</b>	<b>31.683</b>

## MONITORING EVALUATION AND DISSEMINATION

47. Monitoring of the progress in executing the components and activities will be undertaken in accordance with UNEP's internal guidelines for project monitoring and evaluation. In addition the GEF Co-ordination Office will, in consultation with the Executing Agency develop process indicators during the appraisal phase of the project that will serve as evaluation benchmarks during project execution. The Regional Task Forces will be responsible for developing stress reduction indicators and environmental status indicators as integral components of activities within the individual components of the project.

48. The Project Steering Committee will monitor progress on an annual basis and will advise the project manager and executing agency on the overall progress and any necessary adjustments to the subsequent year's workplan and timetable that may be necessary as a consequence of unplanned contingencies. The Project Steering Committee, which will serve as the primary oversight body on behalf of the participating governments, will report, through the Project Manager, on an annual basis to the intergovernmental meetings of COBSEA.

49. A terminal desk evaluation will be undertaken by UNEP as the lead Implementing Agency in accordance with internal agency procedures. In addition, the GEF Co-ordination Office of UNEP will manage an independent evaluation process. This will involve a mid-term evaluation to be completed prior to the COBSEA meeting in December 2003 and a terminal evaluation to be completed within three months of the completion of the project activities. A *post hoc* evaluation will be undertaken two years following closure of project activities to ascertain the longer-term impacts of the project, on regional collaboration in the management of the environment of the South China Sea.

50. Dissemination of results will take place via the regional conferences planned periodically throughout the project, via periodic meetings between project staff and the government ministries and via the public media where appropriate.

#### **LIST OF ANNEXES**

- A. INCREMENTAL COST ANNEX (4 PAGES)
- B. LOGFRAME MATRIX (3 PAGES)
- C. STAP ROSTER TECHNICAL REVIEW (2 PAGES)
- C.1 IMPLEMENTING AGENCY RESPONSE TO STAP/COUNCIL/IMPLEMENTING AGENCY COMMENTS (1 PAGE)
- D. ROOT CAUSE ANALYSIS (6 PAGES)
- E. LIST OF PUBLICATIONS PREPARED UNDER THE PDF BLOCK B GRANT (1 PAGE)

## **ANNEX A**

### **INCREMENTAL COSTS AND BENEFITS OF THE PROJECT: “REVERSING ENVIRONMENTAL DEGRADATION TRENDS IN THE SOUTH CHINA SEA AND THE GULF OF THAILAND”**

#### **BACKGROUND**

The GEF Incremental Costs analysis requires a consideration of the baseline and additional costs associated with achieving ‘domestic’ and global environmental benefits (Table 2). The regional scope of this project presents methodological difficulties in assessing these costs, which are normally calculated in a purely national context. In the present case the benefits arising from this project may be seen as accruing at the global, regional and national scales.

#### **GLOBAL BENEFITS**

Assessing the global benefits of a GEF project necessitates in the first instance a consideration of the comparative environmental importance, from a global perspective, of the region or area covered by the project, together with an understanding of the extent to which the project reduces environmental loss or degradation. This reduction in environmental degradation represents the total environmental benefits of the project at all scales. Partitioning the benefits at global, regional and national scales poses problems in the context of incremental cost calculations since the benefits cannot be valued in purely monetary terms. In the context of international waters therefore, interventions addressing transboundary environmental issues and concerns are considered wholly incremental.

The global importance of the South China Sea is unquestionable, since it has long been recognised as the centre of the Indo-West Pacific Biogeographic Province which is itself recognised as the global centre of shallow water marine biodiversity. In addition, the South China Sea provides 10% of the world’s fish catch and the countries supply 66% (in 1994) of world aquaculture production. These resources are currently under stress with most finfish resources being exploited at or above the levels of sustainability. The growth in aquaculture production, from 46% in 1984 to 66% in 1994 has taken place at the expense of coastal habitats of global significance such as mangroves, whilst intense fishing pressure and the use of destructive techniques are altering the stability and productivity of marine ecosystems and habitats. Conserving such habitats provides global environmental benefits in terms of protecting the high biological diversity found in this region.

Quantifying the environmental benefits in dollar terms is difficult, however the framework Strategic Action Programme developed during the PDF-B phase makes such an attempt, based on an analysis of the consequences of a ‘business-as-usual’ scenario in which it is assumed, for example, that the current rate of habitat loss will be maintained. It is estimated that if the targets of the SAP are met then the economic value of the mangroves saved by intervention will be 0.9 billion US \$, by 2010. Without intervention all mangrove is likely to be lost from the margins of the South China Sea by 2025.

The figure of 0.9 billion dollars however does not reflect the economic value of the global environmental benefits, rather the transboundary, and national economic benefits. Three major difficulties were encountered in valuing the environmental benefits, firstly individual species conserved cannot be assigned a monetary value; the determination of economic values of ecological functions of natural systems is contentious and in many instances derived values cannot be transferred; and the data available are inadequate. For example current estimates of the extent of mangroves on the margins of the South China Sea vary by as much as 30% reflecting inadequate survey data and differences at the national level, in definition of this habitat.

## **REGIONAL & NATIONAL (DOMESTIC) BENEFITS**

National Benefits from this activity are of two types: those that relate to the improvement in the condition of the environment under national jurisdiction; and those that relate to improvement in the national capacity to manage and control the adverse environmental impacts of economic activities.

Regional benefits are also of two distinct types: those relating to the mitigation of transboundary environmental impacts, such as loss of fish spawning and nursery habitats that serve as a source of propagules for fisheries elsewhere in the region or as habitat for endangered species; and those resulting from adoption of an harmonised regional approach to action.

This duality of benefits at both the national and regional level is reflected in the activities proposed under the SAP that focus on development of regionally agreed frameworks for action to address the priority regional and transboundary environmental issues and concerns, and the implementation of demonstration projects in selected sites throughout the region. The activities under each habitat sub-component will result in an agreed priority listing of areas for management intervention. In total 9 habitat related demonstration activities will be initiated, together with a few selected demonstration activities of alternative courses of action to mitigate selected land-based sources of pollution. The total costs for all demonstration activities is 16 million dollars or 48% of the total project costs. Of this total 6.1 million or 38% is derived from the GEF based on an estimation of the direct regional and transboundary environmental value of the 9 interventions. The 'demonstration' value of these activities has not been evaluated at this time since they can only be fully estimated once the activities have been completed and their self replication without GEF intervention demonstrated.

The value of a regional approach to harmonisation of actions is demonstrated in part by the following example from the case of pollution. All countries have some form of water quality, and discharge standards, often reflecting in part the comparative importance of pollution as a problem within the national context. Where a country of low importance from the perspective of the total pollutant loading of the South China Sea imposes stricter standards than a major polluter they place themselves at an economic disadvantage whilst contributing little to the maintenance of the health of the South China Sea marine environment.

For some countries marine pollution is not a major problem, for others it is, and from the perspective of the South China Sea as a whole the TDA would suggest that transboundary pollution issues are of less importance than habitat loss and over-fishing. The marine discharge from countries such as the Philippines, Indonesia and peninsular Malaysia, occurs along coastlines with little or no continental shelf and high flushing rates. In contrast, discharges to areas such as the Gulf of Tonkin and the Gulf of Thailand, which are semi-enclosed have a significant transboundary component and pollution impacts are measurable in these areas at this time. It is not possible to state categorically whether the total pollutant loading in the South China Sea as a whole is having an environmental impact at the basin scale. Past experience in the case of the Black Sea and Mediterranean suggests that, such basin scale effects may well occur in the future, hence the actions proposed to address marine pollution are predicated on the need to establish harmonised preventative approaches to discharges that will provide future protection of the basin, in line with the internationally accepted 'precautionary principle'.

## **BASELINE ACTIONS**

All participating countries have initiated actions at the national level to address environmental problems of national importance and have collaborated in, and contributed to, various regional endeavours including the work of the FAO, UNEP and the IOC at a regional level. Over the last five years the number of collaborative programmes involving two or more countries within the region has increased significantly, demonstrating the recognition by participating countries of the need for a more concerted approach to environmental management within the region.

At a national level all countries have sought, over the last decade to strengthen their national capacity for sound and sustainable management of the marine environment. Following the past emphasis on assessment of problems, significant experience has been built up at a national level. In some instances however, countries have been unable to devote sufficient resources internally to developing such capacity hence the stage of development varies widely from country to country. Assessing the national baseline for all 7 countries is therefore a task requiring more extensive analysis of current investment patterns, than has been possible during the PDF-B phase.

Valuing such past, baseline activities at the national level, is a difficult if not impossible task, however, contributions to specific regional activities provide an indicator of commitment to regionally co-ordinated action. Whilst not considered part of the baseline for this project, both the World Bank/GEF project on the Mekong River, and the GEF/UNDP/IMO PEMSEA project on the East Asian Seas, receive substantial baseline support from the countries involved in the present project demonstrating the nature of countries commitment to concerted and co-ordinated action. In the case of the countries participating in COBSEA, contributions to the costs of regional co-ordination, discounting activities and actions, total around a quarter of a million dollars annually. Part of the project appraisal phase will involve a more detailed analysis of the national level actions that can be directly integrated into the proposed project hence the level of baseline funding by the countries concerned can be expected to be increased in the final project document.

Important on-going regional initiatives such as the work of SWOL, and IOC/WESTPAC on the South China Sea, to which the countries all contribute directly and indirectly, can be considered as baseline for the project. These are listed in this proposal as associated financing since the objectives of these activities are coincident in the objective of strengthening regional co-operation in the management of the environment of the South China Sea.

#### **INCREMENTAL ACTIONS**

The present project adds significantly to the 'regional baseline' enabling the countries to accelerate the time-line for finalisation of a costed and targeted programme of action, the Strategic Action Programme. Completion of the SAP is unlikely to occur in the absence of a GEF intervention, since the level of funding currently available for regional co-ordinated action is insufficient to deal with immediate environmental issues and crises, let alone longer term planning and management.

The question arises however, as to whether the costs of the regional activities proposed in this project (Components 1, 2 & 3 in part and 4 in full) represent additional baseline or, truly incremental costs. Since these regional components build on existing national and regional actions, both past and ongoing they may be considered complementary and therefore from a GEF perspective entirely incremental.

Components 1, 2 and 3 include actions at the national level and it is for these components that the largest national contributions in terms of co-financing are expected since these actions are anticipated to bring significant national benefits. In the case of selection of demonstration sites only those identified as being of transboundary significance will be considered to be eligible to receive the GEF funding allocation under this project.

The development of national action plans under each component for the implementation of the SAP when finalised, will involve significant co-financing from participating countries in terms of the commitment of inter-ministry teams to their development, and the required detailed analysis of current government investment and spending patterns. The development of such plans is seen as a legitimate incremental cost in that they must be developed in such a manner as to conform to the regional requirements of the Strategic Action Programme.

## ANNEX B

### LOGICAL FRAMEWORK MATRIX

PROJECT PLANNING MATRIX			
SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	CRITICAL ASSUMPTIONS AND RISKS
<b>Overall Objectives</b>			
Improved regional co-ordination of the management of the South China Sea marine and coastal environment	Finalised Strategic Action Programme (SAP)	Adoption by an Intergovernmental meeting of COBSEA (Mtg. Rpt.).	Elaborated SAP will be accepted by the participating Governments. This assumption seems likely to be met since agreement was reached on the framework during the XIIIth meeting of COBSEA.
Improved national management of the marine and coastal habitats	Development and Adoption of up to 7 National Action Plans in support of the regional SAP	Adoption of NAPs by National Governments and integration into sustainable development planning.	That governments will develop and adopt NAPs. This assumption is likely to be met since the approved framework SAP contains specified actions for development of such plans.
Improved integration of fisheries and biodiversity management in the Gulf of Thailand	Agreement on joint priorities for regional action between the government representatives attending COBSEA.	Adoption by Governments of goals and objectives relating to fisheries and environment (Mtg. Rpts.).	That governments support more integrated approaches at national level to management of fisheries and environmental issues in the Gulf of Thailand. This assumption presents a higher risk than those outlined above due to inherent sectorial approaches at the national level. The inter-ministry committees will play a critical role in reducing this risk.
<b>Outcomes</b>			
Adoption of improved mechanisms for regional co-operation in the management of the environment of the South China Sea	Finalisation of agreements on mechanisms for improving regional co-operation at an intergovernmental level. Increased support for regional co-operative mechanisms.	Adoption by a high level intergovernmental meeting on agreements for co-operation. Increased government contributions to regional trust funds.	That unresolved territorial claims may distract from the primary target of achieving improved regional co-operation. The extent of this risk cannot be fully evaluated however it is considered to be low to medium and subject to events outside the control of the project.
Jointly agreed actions relating to fisheries and environment in the Gulf of Thailand	Development of regional management plans to establish a system of refugia to maintain important transboundary fish stocks.	Adoption by appropriate intergovernmental fora of a regional management plan (Mtg Rpts of EAS/RCU)	That joint agreement can be reached between environment and fisheries ministries at the national level. This assumption presents a higher risk than the others given the sectorial approach to fisheries and environment at national government level.
Adoption of the SAP at a regional level	Finalisation of the SAP through the work of regional task forces of experts	Adoption of the SAP by a meeting of COBSEA (Mtg. Rpt.) Publication of the SAP by the EAS/RCU	That the SAP can be finalised in a manner acceptable to the Governments. This assumption seems likely to be met since the framework for the SAP has already been approved by governments.
Acceptance of the TDA and SAP at a National level	Inclusion of transboundary and regional considerations in the National Action Plans	Adoption of NAP's containing such elements (Nationally Published NAPs)	That governments will include regional considerations in their assessment of National priorities for action. This assumption seems likely to be met given existing national commitments to regional action under the East Asian Seas Action Plan.
Implementation of components of the SAP	Development & adoption of regional guidelines and standards for various sources of pollution. Development of criteria for selection and adoption of priority areas for: habitat management; protection as <i>refugia</i> for fish stocks; Hot Spots of regional & transboundary significance.	Endorsement by appropriate meetings of COBSEA (Mtg. Rpt.)  Endorsement of the criteria by regional expert meetings and adoption of the priority listing at national and regional level (Mtg Rpts.)	Governments will agree and adopt the priority listing of pollution hot spots at national and regional level. This assumption will likely be met since the TDA has identified the 36 regional hot spots through the national reports prepared as part of the TDA preparation process.  Governments will agree and adopt the priority listing of habitat areas for improved management at national and regional level. This assumption presents a slightly higher risk in that discussion of specific areas for protection and sustainable management has not yet commenced.

## LOGICAL FRAMEWORK MATRIX CONTINUED

Regional database for planning and management	Development of comparable national data and information sets by each participating country	Publication of meta-data catalogues and inclusion of plans for data management as a component of national management plans	Limitations of capacity at a national level pose a significant risk in some countries. The project is designed to maximise inter-country exchange of expertise and to support the work at national level.
<b>Results</b>			
7 sets of national management plans for 4 specific habitats	Preparation and publication of 7 sets of national management plans.	Adoption of the management plans by national governments (Mtg. Rpts. Publication by the EAS/RCU)	That management plans can be drafted that are acceptable to national governments. This assumption is likely to be met since the development of such guidelines plans was agreed as a component of the SAP
7 national databases for 4 specific habitats	Establishment of operational capacity for data management	Adoption of the data management function by department of environment	That insufficient support will be provided by governments. This risk is low since in a number of cases such capacity already exists
Adopted portfolio of priority habitat projects within the region	Preparation of a draft portfolio by task teams and expert groups	Presentation to and adoption by a meeting of COBSEA	That agreement can be reached between governments on the regional priorities. This risk seems low since the framework SAP calls for development and adoption of such regional priorities
4 national and one regional management plans to establish a system of refugia to maintain important transboundary fish stocks	Preparation and publication of 4 national and 1 regional management plan	Adoption of the regional plan by appropriate expert group and intergovernmental meetings of environment and fisheries ministries (Mtg. Rpts. plus publication by the EAS/RCU)	That a regional plan can be drafted that is acceptable to national governments. This assumption is likely to be met since the development of such a regional plan was agreed as a component of the SAP]
Educational and Public awareness materials on sustainable fisheries practices and fish stock conservation in the Gulf of Thailand.	Preparation and publication of materials in local languages	Use of the materials in workshops with local communities	That such materials can be disseminated in the multiplicity of languages involved. This assumption is dependent upon governments active participation and past practice suggests that this presents a minimal risk.
Evaluation of a blast fishing detection devise	Published report of field test results of the effectiveness of a prototype as a deterrent	Presentation of the results to a meeting of COBSEA	That Fisheries officers will be reluctant to participate in field testing. This is a low risk since blast fishing is a regional problem, banned in all countries.
Agreed regional priority listing of transboundary pollution hot spots	Preparation of criteria, analysis and listing of priorities from among the 36 identified hotspots. Completion by countries of national evaluations of water quality objectives and standards. Priority portfolio of projects for investment studies or remedial action and preliminary cost benefit analyses.	Adoption of the priority listing of hot-spots at a regional expert and subsequent COBSEA (Mtg. Rpts). Adoption at national level of water quality objectives and standards. Presentation of preliminary evaluation of costs and benefits of alternative actions to a partnership conference.	That agreed criteria can be developed and the resulting priorities accepted at a regional level. This assumption is likely to be met since the initial listing has been presented to COBSEA in the TDA.  That countries will agree to adopt water quality objectives and standards. This seems likely to be met since this is a target of the framework SAP adopted by COBSEA.
Regionally adopted water quality objectives, water quality and effluent standards	Review of water quality data for the SCS sensitivity analysis of critical habitats and regional overview of transboundary movement of pollutants	Adoption at the regional level of water quality objectives and standards (Mtg Rpts & publications)	That countries can agree on common water quality standards for the South China Sea. The extent of the risk of non-agreement cannot be evaluated although agreement does exist to initiate such a process in the framework SAP.
Meta-database of national legislation relating to the environment of the South China Sea	Preparation of national reviews and presentation to relevant expert working group meetings	Publication of a metadatabase	That translations of appropriate legislation can be compiled according to the workplan and timetable. The extent of this risk depends in part on the volume of legislation involved but seems low.

## LOGICAL FRAMEWORK MATRIX CONTINUED

Regional review of countries obligations under global conventions	Preparation of a draft review and presentation to a relevant expert meeting	Publication of the review	None
<b>Components/Activities</b>			
Establishment of National working groups and preparation of 4 habitat specific data and information reviews; national reviews of restoration activities; and national management plans	National data and info. management plans National reports Draft national management plans	Presentation of national reports to regional Task Force meetings	That governments will be slow to respond and that reviews and plans are not produced according to the workplan and timetable. Based on experiences in the PDF-B phase the timetable has been prepared to allow adequate time.
Establishment of regional task forces and preparation of regional management plans	Preparation of draft national guidelines regional plans and convening of expert and COBSEA meetings.	Publication of regional outputs; Mtg Rpts & publications	None
Determination of criteria, preparation of priority actions and investment portfolios	Preparation of drafts and convening of regional expert and subsequent COBSEA meetings according to the agreed workplan	Publication of regional outputs; Mtg Rpts & publications	That countries will agree to select priority demonstration sites is an assumption likely to be met since this is an action approved in the framework SAP.
Implementation of 9 demonstration activities	9 Management plans for selected priority transboundary sites	Adoption of the priority listing and endorsement of the management plans for selected sites	As above
Prioritisation of regional and transboundary pollution Hot spots for management intervention	Development of criteria & impact analysis Selection of priority hotspots & determination of management actions	Publication of criteria and listing of selected priorities	As above
Fisheries and Environment: identification of areas for protection and management for maintenance of stocks of transboundary importance in the Gulf of Thailand	Detailed Analysis of issues relating to transboundary stocks and joint resolution of priority areas for action	Publication of Analysis and priority areas for action	As above
Sustainability and implementation of the SAP	Development of economic evaluations; priority investment portfolios	Adoption of a regional approach to economic evaluation of environmental goods and services and priority investment portfolios.	An assumption is that national governments will take action at a national level to implement the recommendations. The risk associated with this assumption cannot be evaluated since this will depend on other national development and investment priorities. However through careful integration of the regional priorities into national action plans it is hoped that this assumption will be met.
Establishment of the Management Framework	Hiring of staff Meetings of the Project Steering Committee Donors Consultations	Issuance of contracts Publication of Meeting reports Mtg reports and donor investment	That staff can be hired within three months of completion of the internal project document.
Drafting of National Action Plans for the 4 critical habitats	Preparation of drafts according to an agreed timetable.	Adoption of National Action Plans by governments	It is assumed that governments will be willing to adopt such national plans an assumption which is likely to be met since this is an action specified in the framework SAP

**ANNEX C**  
**STAP ROSTER EXPERT REVIEW OF THE GEF PROJECT PROPOSAL:**  
**REVERSING DEGRADATION TRENDS IN THE SOUTH CHINA SEA**

Professor Su Jilan  
(Second Institute of Oceanography, SOA, Hangzhou, China)

**BASIS FOR THE PROPOSAL**

The South China Sea, as a part of the marine biodiversity rich Indo-West Pacific, is an area of global significance in shallow water biological diversity, which in turn supports an important world fishery. At the same time the countries along its periphery are among the fast growing areas of the world, both economically and populationwise, with increasing pollutant discharges. Unlimited fishing for demersal fish has resulted in the decline of the landings of many species and in the use of fishing practices destructive to the reefs. Intensive shrimp-farm activities have resulted in rapid loss of mangroves and wetlands. All these have exerted strong pressure on the marine environment and threatened the high biological diversity of the south China Sea.

There are also a number of unresolved territorial disputes in this region which have hindered a basin-wide coordinated approach to deal with these issues effectively. However there is also an increasing recognition among the countries in this region that cooperation in managing the marine environment is urgently needed and can proceed before the settlement of these disputes.

**GOALS AND EXPECTED OUTCOMES**

This project proposal aims to build at the regional level an environment of collaboration and partnership, in which stakeholders at all levels can join hands to address environmental problems of the South China Sea. An important outcome of this project proposal is a strategic Action Programme (SAP) to be agreed on at an intergovernmental level. The framework SAP has been developed over the last two years and will further elaborated in this project. It shall encompassing targeted and costed action programmes, as well as recommended legal framework for improved regional cooperation in managing environmental concerns.

The actions proposed in SAP are wide ranging in both context and areas. The project is divided into four major components, namely, Habitat Degradation and Loss, Over Exploitation of Fisheries, Land-Based Pollution, and Regional cooperation. In the first three components there will be both national and regional activities, resulting in management plans for specific issues. Demonstration projects for these three components will be implemented at priority transboundary sites.

**COMMENTS**

Along with the rapid economic growth both the governments and the public in this region have become acutely aware of issues related to marine environment problems and sustainable

development. Many national projects have been undertaken to address these concerns. Furthermore, with the help of both intergovernmental organizations and NGOs, bilateral and non-basinwide regional collaborative projects for related issues have also been embarked. A good example is the IOC/WESTPAC Cooperative Study in the Gulf of Thailand which I myself was involved in its initial stage. This study was initially promoted in 1993 at the Second Session of the IOC/WESTPAC but was not readily embraced by all parties concerned. Subsequent efforts by local scientists, with related projects supported by SEAFDEC, SEAPOL and SIDA/SAREC, moved the study steadily along. The study was adopted by IOC/WESTPAC in 1996 and is being implemented by active participation of the four countries bordering the Gulf.

The above-mentioned example illustrates the existence of important on-going national and regional initiatives. It also illustrates the awareness by the countries of the need for collaboration in addressing marine environment issues. At the same time, as the preparatory works for this project proposal have found out, not all countries have collected data and information in a comparative manner, both in the amount of data and in the techniques and protocols of data collection. Therefore, the project proposal comes in at the right time. By building on and expanding from existing projects the proposal will bring together a number of stakeholders towards a common goal of addressing the basin-wide environmental concerns for sustainable development. A consortium of entities, both inter- and non-governmental, will be involved in its execution and thus ensuring quality outputs. The collaborative actions initiated by this proposal should be able to be sustained once the stakeholders realize the significant benefit from such incremental actions.

The only minor suggestions that I have on possible modification of the project proposal concern the clarification of a few of its definitions and statements. I believe the proposal is focusing on basin-wide environmental issues of the South China Sea, rather than limits itself to environmental issues of the South China Sea basin. In other words, regions such as the Gulf of Thailand and Tonkin Gulf are included in this proposal's consideration. Otherwise, for example, large parts of both the mangroves and wetlands around the South China Sea would be excluded from the proposal. It would also be difficult to deal with transboundary fish stocks, most of which spend part of their life history in shallow water habitats. If this understanding is correct, then the statement in Annex I about most countries' marine discharge occurring along coastlines with either or no continental shelf is not accurate. In this connection I am also not sure that pollution is of less importance as stated in Section 3, since excessive nutrient discharge from both the agriculture and aquaculture are universal problems in estuaries and shallow waters nearshore.

Finally, the SAP to be elaborated in this proposal is certainly quite comprehensive and effective. However, other than the transboundary fish stocks and the protection of coral reefs in the disputed waters, this does not mean that basin-wide efforts are far more effective, although certainly more desirable, than sub-regional cooperation in pollution control or in the prevention of habitat loss with respect to destruction of mangroves and wetlands, as seemingly implied in Section 3.

## **ANNEX C1**

### **IMPLEMENTING AGENCY RESPONSE TO STAP/COUNCIL/IMPLEMENTING AGENCY COMMENTS**

#### **COUNCIL & IMPLEMENTING AGENCY COMMENTS:**

Council comments are anticipated following the submission of the document to the May 1999 meeting of the Council. By the time of the bilateral and GEF Operations Committee meeting of 30th March 1999 no comments had been received from either UNDP or the World Bank. A few suggestions for amendment made by the GEF Secretariat have been incorporated in the present document.

#### **STAP Reviewers Comments:**

Overall the STAP Roster Expert's comments are strongly supportive of this project in terms of both the rationale and objectives, providing added examples in support of the need for this project.

UNEP agrees with the comments of the reviewer with respect to the nature of the area covered by the project as being basin-wide environmental issues and has clarified the statements accordingly. UNEP further accepts the statements made by the reviewer regarding the importance of pollution in estuaries and shallow waters nearshore and has amended the text to accord with this view. In this context however it should be noted that much of the pollution impacts occur in near field (national) waters and consequently the project focuses on the identification of pollution 'hot spots' of regional and transboundary significance.

## **ANNEX D**

### **ROOT CAUSE ANALYSIS: CAUSES OF DEGRADATION OF THE MARINE ENVIRONMENT OF THE SOUTH CHINA SEA**

#### **BACKGROUND:**

The Transboundary Diagnostic Analysis for the South China Sea, was developed on the basis of National Reports prepared by inter-ministry committees and working groups in each country. The individual country reports were prepared from a national perspective and detail the national water-related environmental concerns and issues, together with an analysis of their causes and priorities for action at a national level. These priorities reflect a wide diversity of sectorial reviews and plans in each country and the reports in turn reflect this diversity of perspectives.

The Transboundary Diagnostic Analysis, whilst it reflects the national perspectives as outlined in the national reports, also attempts to provide a more regional and transboundary perspective by placing the countries of the South China Sea region in a global context, and by focusing on those issues of concern that were clearly of a transboundary nature, or of such widespread concern around the margins of the South China Sea that they constitute a regionally important source of environmental degradation.

#### **DIFFICULTIES EXPERIENCED IN CONDUCTING THE ANALYSIS**

A number of generic problems arose during the course of this analysis. Firstly it was found that not all countries had collected data and information in a comparable manner. Not only did the data reflect different monitoring protocols and analytical techniques but also in some instances no data had apparently been collected for some parameters at a national level, and in others it had been aggregated in a form that made it unsuitable for analysis. This was not unexpected since population data for example, are generally aggregated at a national level on the basis of administrative region or entity rather than on proximity to the coastline.

Some more fundamental problems arose when it was discovered for example that regional estimates of the extent of major habitats varied by as much as 30%. The comparative importance between habitats, of rates of loss, is difficult to determine where the estimates of area of the habitats vary to this extent. The final estimates used in establishing targets for the SAP are therefore a 'best estimate' by a group of experts from the region.

#### **ROOT CAUSES OF ENVIRONMENTAL CHANGE IN THE SOUTH CHINA SEA REGION**

The analyses contained in the national reports and TDA identify a series of root causes of which the most important were identified as being:

- the rapid growth in coastal populations, up to twice the national average in some cases;
- the rapid economic growth experienced over the last decade;
- the pace of industrialisation; and,
- the influence of the globalisation of trade.

Accepting that, the first of these causes is beyond the scope of a project of limited financing and short duration, and that, the remaining three are likely to increase rather than decrease due to other political and social pressures, the focus of attention in the analysis lies at a level above these ultimate causes. Thus for example, the major cause of mangrove loss in the region appears to be clearance for extensive shrimp farming that is driven by the world price of shrimp which encourages countries to increase production for export income. This constitutes a short-term economic incentive at both the level of the individual producer and of the country itself, which ignores the longer term economic impacts that result from loss of mangrove ecological functions and productivity. The analyses could demonstrate no examples where environmental 'externalities' had been taken into consideration in decisions relating to development. In a number of instances it was noted however that development of extensive shrimp farms had occurred without any form of government intervention, regulation or control.

This example, serves to illustrate the nature of associated or secondary causes such as, the failure to understand the environmental or economic consequences of mangrove clearance, combined with an inability at the national level to 'value' such impacts in a manner that would support more rationale planning and management of mangrove area development.

#### **MAJOR CONCERNS AND PRINCIPAL ISSUES:**

It is important to recognise that not all issues and concerns are of equal importance to all countries of the region hence the regional and transboundary focus of the TDA, which highlights four major areas of concern namely:

- Habitat Loss and Degradation;
- Over-exploitation of living marine resources;
- Pollution
- Freshwater concerns.

#### **Habitat loss and degradation**

The principal habitats of concern in the South China Sea were identified as being mangroves, coral reefs, seagrass beds and estuaries/wetlands all of which are of global significance both in terms of the biological diversity they support and their extent within the region. The driving forces for change and the immediate causes of loss and degradation in these habitats are quite different and are summarised below in order of importance.

*Mangroves:* Major causes of loss and degradation were identified as being: clearance for shrimp farming; clearance for wood chip and pulp; urban development and human settlement; and for domestic use in construction and for fuel.

*Coral reefs:* Major causes of degradation include: over-exploitation by the subsistence fisheries sector; use of destructive fishing practices; increased sedimentation; and pollution associated with coastal urban centres and coastal development including for international tourism. Associated issues include the exploitation of reef fish for the international aquarium trade and export of corals.

*Seagrasses:* Major causes of degradation include: over-exploitation by the fisheries sector; land reclamation and coastal development; and increased sedimentation. A number of specific issues associated with this habitat were also identified including exploitation of sea horses for traditional medicine (all countries except Cambodia) and direct exploitation for animal feed, an issue confined to Viet Nam.

*Estuaries and wetlands:* Major problems associated with degradation of estuaries result from pollution since many estuarine areas are also centres of population. In contrast the primary cause of loss and degradation of coastal wetlands appears to be their conversion to alternative uses within the subsistence sector and over-exploitation of their associated living resources.

The transboundary consequences of habitat loss and degradation are numerous but the two most important include:

- loss of globally significant biological diversity; and,
- loss of spawning and nursery areas for fish and shellfish stocks and endangered and threatened species.

The transboundary driving forces include international tourism, and the world demand for marine products resulting in short-term economic incentives to convert coastal habitats for aquaculture.

## **OVER-EXPLOITATION OF LIVING MARINE RESOURCES**

The ultimate causes of over-fishing are of course the demand, which exceeds the supply, both in the large scale commercial and subsistence sectors often resulting in conflict between these sectors. The use of inappropriate or destructive techniques and patterns of fishing exacerbates the problem but in the subsistence sector a high proportion of fishing communities are driven to over-exploitation in the absence of alternative livelihoods. Issues associated with over-fishing include losses due to by-catch particularly in the shrimp trawl sector, post harvest losses and degradation of the coastal environment, contributing to declining stock sizes for many demersal species.

Despite nutritional requirements and current population growth rates, the countries surrounding the South China Sea are generally net exporters of fishery products. Since the need to generate foreign exchange to buy capital inputs for industrialisation is a higher priority than food security, this trade pattern is likely to continue, unless policy shifts occur that result in food security becoming a higher priority in the national agendas of participating countries.

The transboundary consequences include conflict over access to the resources; impacts of the dominant fishing fleets on smaller national fishing fleets and conflicts between the subsistence and commercial sectors; loss and decline in biological diversity

## **POLLUTION**

The ultimate causes of pollution include increases in coastal population density; increased food

production in the agricultural sector; and increasing industrialisation. The proximate causes include inadequate waste-water treatment whilst intermediate causes include inadequate standards and lack of capacity to monitor, regulate and control pollution discharge. A major contributing factor is the lack of financial resources to invest in actions addressing the causes at all levels. In analysing national information it was apparent that sources of waste ranked as follows: domestic; agricultural; industrial; poor land-use practices resulting in enhanced sedimentation; urban solid waste; hydrocarbons and ship-based sources; atmospheric inputs. It should be noted that data regarding the extent of these problems and their magnitude is of variable quality and generally inadequate for an objective, quantitative, ranking of importance.

A significant, though restricted transboundary issue related to pollution includes the trade in waste for disposal and/or recycling in the countries of the region with substantial tonnage of waste being imported to the countries of the region from developed nations.

A total of 35 pollution hot spots and 26 sensitive areas were identified from data contained in the national reports however the quality of the data precluded the development of a priority ranking from the regional and transboundary perspective. In the latter case a major constraint was the absence of adequate data regarding the fate, or impacts of present discharges in the marine environment.

It seems likely on the basis of existing information that transboundary pollution related issues occur only in the case of those countries (primarily China and Viet Nam) that share a common continental shelf and those surrounding the Gulf of Thailand. For all other regions of the South China Sea pollution problems are likely to be of purely national concern since pollutants and contaminants are discharged along generally open coastlines with little or no continental shelf.

There exists no evidence at the present time to indicate that pollution is currently a basin wide problem in terms of the total load, although past experience in the Black, Mediterranean, North and Baltic Seas, suggests that basin scale problems may occur in the future if discharges continue unabated. There is clearly a need to assess the capacity of the South China Sea with respect to pollutant loading (particularly, nutrients) in order to develop an appropriate precautionary approach to discharges in the area. Present pollutant and contaminant discharges may have transboundary consequences in some of the identified “hot spots” and sensitive areas in terms of increasing the rate of habitat degradation in those habitats identified by the TDA as being of transboundary, global significance.

The data, information and evidence assembled during the preparation of the national reports and TDA were reviewed by experts from the region who ranked the importance of the concerns and issues as tabulated below.

**Table 1 Ranking of water related environmental concerns and principal issues  
in the South China Sea.**

<b>Major Concerns</b>	<b>Score</b>	<b>Rank</b>	<b>Principal Issues</b>	<b>Score</b>	<b>Rank</b>
Habitat loss & degradation	18.5	1	Mangroves	21	1
			Coral Reef	20	2
			Seagrasses	17	6
			Wetlands & Estuaries	16	7
Over exploitation	17.5	2	Marine	19	3
			Freshwater	16	7
Pollution	14	3	Sewage	19	3
			Freshwater Contamination	17.5	5
			Agricultural loading	15	9
			Industrial Waste	15	9
			Sedimentation	14	11
			Solid Waste	13	12
			Hydrocarbons	12	13
			Ship-based sources	12	13
			Atmospheric	8.5	16
Freshwater concerns	9	4		9	15

**TABLE 2 SUMMARY OF PROPOSED TARGETS TAKEN FROM THE DRAFT FRAMEWORK STRATEGIC ACTION PROGRAMME Dates in bold fall within the time frame for the completion of the GEF project**

SAP COMPONENT SUB-COMPONENT	DATE	TARGET
<b>1. HABITAT DEGRADATION AND LOSS</b>		
1.1 Mangrove	2010	maintain 90% of the present (1998) area
1.2 Non-oceanic Coral Reefs	2010	maintain the area of coral reef with more than 50% live cover at the present (1998) level
1.3 Seagrasses	2010	maintain at least 80% of the present (1998) area of seagrass in good condition
1.4 Wetlands	<b>2005</b>	adopt management plans for all wetlands, excluding mangroves, with emphasis on wetlands in the coastal zone of the region.
<b>2. OVER EXPLOITATION OF FISHERIES IN THE GULF OF THAILAND</b>		
	<b>2005</b>	determine regional catch levels of key economically important species according to levels that are economically welfare maximising, while still preserving the resource base
	<b>2005</b>	establish a regional system of marine protected areas for fishery stock conservation and protection of endangered species
	<b>2005</b>	prepare and implement at selected sites, a management system in the Gulf of Thailand that will sustain the exploited resources
<b>3. LAND-BASED POLLUTION</b>		
	<b>2003</b>	adopt regional water quality objectives, water quality standards, effluent standards for use in the region; prepare appropriate recommendations for mitigation measures for municipal, industrial and agricultural (including aqua-culture) activities
	<b>2003</b>	develop guidelines for monitoring for coastal waters, taking into account already published guidelines
	<b>2003</b>	determine principal pollutants in the region, estimate the carrying/assimilative capacity of relevant ecosystems for relevant pollutants - BOD, Nutrients, metals, sediments etc
	<b>2003</b>	establish a regional contingency plan for SCS to handle incidents of oil and chemical or hazardous waste spillage
	<b>2004</b>	develop a regional SCS Plan of Action for LBAs to meet regional water quality objectives
	<b>2005</b>	identify 10 Priority Discharge Sites for action and develop appropriate mitigation activities
	<b>2005</b>	develop regional funding mechanisms for mitigation activities
	2006	initiate mitigation activities on the Priority Discharge Sites;
	2008	review recommended water quality standards in national legislation
<b>4. REGIONAL CO-OPERATION</b>		
	<b>2001</b>	further develop the SAP by holding national expert and intergovernmental consultation
	<b>2002</b>	convene a high level meeting of government officials and experts to formulate regional guidelines for co-operation for the protection and sustainable management of the marine and coastal environment of the South China Sea
	<b>2005</b>	complete draft guidelines on regional co-operation for the protection and sustainable management of the marine and coastal environment of the South China Sea

## ANNEX E

### LIST OF PUBLICATIONS PREPARED UNDER THE PDF BLOCK-B GRANT ENTITLED: PREPARATION OF A TRANSBOUNDARY DIAGNOSTIC ANALYSIS AND PRELIMINARY FRAMEWORK OF A STRATEGIC ACTION PROGRAMME FOR THE SOUTH CHINA SEA.

1. Report of the First Meeting of National Co-ordinators for the Formulation of a Transboundary Diagnostic Analysis and preliminary Framework of a Strategic Action Programme for the South China Sea, Bangkok, Thailand, 31 March – 4 April 1997 **[UNEP(WATER)/EAS/SOUTH CHINA SEA/NCM.1/3]**
2. Report of the Second Meeting of National Co-ordinators for the Formulation of a Transboundary Diagnostic Analysis and preliminary Framework of a Strategic Action Programme for the South China Sea, Bangkok, Thailand, 23-29 June 1998 **[UNEP(WATER)/EAS/SOUTH CHINA SEA/NCM.2/3]**
3. Report of the Third Meeting of National Co-ordinators for the Formulation of a Transboundary Diagnostic Analysis and preliminary Framework of a Strategic Action Programme for the South China Sea, Bangkok, Thailand, 15-17 November 1998 **[UNEP(WATER)/EAS/SOUTH CHINA SEA/NCM.3/3]**
4. Transboundary Diagnostic Analysis for the South China Sea, version 4 **[UNEP EAS/RCU Technical Report Serious No. 14 UNEP, Bangkok, Thailand]**
5. Strategic Action Programme for the South China Sea, version 3 **[UNEP South China Sea/SAP Version. 3]**
6. National Report for the Formulation of a Transboundary Diagnostic Analysis for the South China Sea – Cambodia
7. National Report for the Formulation of a Transboundary Diagnostic Analysis for the South China Sea – China
8. National Report for the Formulation of a Transboundary Diagnostic Analysis for the South China Sea – Indonesia
9. National Report for the Formulation of a Transboundary Diagnostic Analysis for the South China Sea – Malaysia
10. National Report for the Formulation of a Transboundary Diagnostic Analysis for the South China Sea – Philippines
11. National Report for the Formulation of a Transboundary Diagnostic Analysis for the South China Sea – Thailand
12. National Report for the Formulation of a Transboundary Diagnostic Analysis for the South China Sea – Viet Nam
13. Report on Thirteenth Meeting of the Coordinating Body on the Seas of East Asia (COBSEA) on the East Asian Seas Action Plan, Bangkok, Thailand, 18-19 November 1998 **[UNEP(OCA)/EAS IG.9/3]**
14. Report on Fourteenth Meeting of the Coordinating Body on the Seas of East Asia (COBSEA) on the East Asian Seas Action Plan, Bangkok, Thailand, 23-25 November 1999 **[UNEP(OCA)/EAS IG.10/3]**
15. Report of the Meeting of National Experts for the UNEP GEF Project in the South China Sea. Pattaya, Thailand, 7-9 September 2000 **[UNEP(DEC)/EAS/SCS-exp/3]**
16. Report on Fifteenth Meeting of the Coordinating Body on the Seas of East Asia (COBSEA) on the East Asian Seas Action Plan. Special Session for the UNEP GEF Project in the South China Sea. Pattaya, Thailand, 11-12 September 2000 **[UNEP(DEC)/EAS IG.11/3]**

## **PROJECT REVIEW SHEET**

### **Work Program Inclusion - UNEP International Waters**

**Project Title: "Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand"**

**Date: September 5, 2000**

	<b>Work Program Inclusion per criteria established in Draft # 8 of the project review criteria</b>	<b>Reference Paragraphs and Explanatory Notes:</b>
<b>1. Country Ownership</b>		
• Country Eligibility		• Countries are eligible under paragraph 9b of the GEF Instrument – see cover page
• Country Drivenness	Clear description of Project's fit within: <ul style="list-style-type: none"> <li>• National reports/communications to Conventions</li> <li>• National or sector development plans.</li> <li>• Recommendations of appropriate regional intergovernmental meetings or agreements.</li> </ul>	<ul style="list-style-type: none"> <li>• National Priorities were identified during the PDF-B phase and are detailed in the national reports – see Annex E</li> <li>• Regional priorities were identified (Habitat loss &amp; degradation; over-exploitation; land based pollution see Annex D) in the Transboundary Diagnostic Analysis &amp; the Framework Strategic Action Programme which were endorsed at the XIII meeting of COBSEA, November 1998 – see also Annex E for the list of PDF-B outputs which are available on the web. <a href="http://www.roap.unep.org/easrcu/index.htm">http://www.roap.unep.org/easrcu/index.htm</a>.</li> <li>• Project brief endorsed by a special meeting of COBSEA September, 2000</li> </ul>
• Endorsement	• Endorsement by national operational focal points	<ul style="list-style-type: none"> <li>• All countries endorsed the original PDF-B proposal during the 11<sup>th</sup> meeting of COBSEA in Manila, in December 1996.</li> <li>• All countries except China endorsed the original brief submitted by UNEP to the GEF in March 1999.</li> <li>• All countries including China have now endorsed the current brief – see cover page</li> </ul>
<b>2. Program &amp; Policy Conformity</b>		
• Program Designation & Conformity	Describe how project objectives are consistent with Operational Program objectives or operational criteria	• The project is fully consistent with the objectives of Operational Program #8, being based on a comprehensive TDA and framework SAP that details targets and time frames for co-ordinated regional action – see paragraph 5.

	<b>Work Program Inclusion per criteria established in Draft # 8 of the project review criteria</b>	<b>Reference Paragraphs and Explanatory Notes:</b>
<ul style="list-style-type: none"> <li>Project Design</li> </ul>	<p><b>Describe:</b></p> <ul style="list-style-type: none"> <li>Sector issues, root causes, threats, barriers etc affecting global environment</li> <li>Project logical framework, including a consistent strategy, goals, objectives, outputs inputs/activities, measurable performance indicators, risks and assumptions</li> <li>Detailed description of goals, objectives, outputs and related assumptions, risks and performance indicators</li> <li>Brief description of project activities, including an explanation how the activities would result in project outputs (in no more than 2 pages)</li> <li>Global environmental benefits of the project.</li> <li>Incremental cost estimation based on the project logical framework</li> <li>Describe project outputs (and related activities &amp; costs) that result in global environmental benefits</li> <li>Describe project outputs (and related activities &amp; costs) that result in global and national environmental benefits</li> <li>Describe project outputs (and related activities &amp; costs) that result in national environmental benefits</li> <li>Describe the process used to jointly estimate incremental cost with in-country project partner</li> <li>Present the incremental cost estimate. If presented as a range, then a brief explanation of the challenges and constraints and how these would be addressed by the time of CEO endorsement.</li> </ul>	<ul style="list-style-type: none"> <li>Sector issues, root causes, threats and barriers are comprehensively described in the TDA and outlined in the Root cause analysis Annex D. Major threats include rapid growth in coastal populations (twice the national averages); rapid economic growth; high dependence of populations on marine protein; rapid industrialisation &amp; the globalisation of trade - see paras 3, 4, 9, &amp; 10 &amp; Annex D</li> <li>The SCS is well recognised as the global centre of shallow water marine biodiversity - see paras 1 &amp; 2.</li> <li>A detailed logical framework is included as Annex B. Objectively verifiable indicators include: finalisation of the SAP; development and adoption of National Action Plans in support of the SAP; and intergovernmental agreements on joint priorities for regional action.</li> <li>The overall goals are: to improve regional co-ordination of the management of the South China Sea marine and coastal environment; to strengthen nation management; and to improve integration of biodiversity concerns into fisheries management in the Gulf of Thailand – see paras 16-18 &amp; Annex B</li> <li>Activities are grouped into 4 major components and include: establishment of national working groups for each major habitat (mangroves, non-oceanic coral reefs, seagrasses and wetlands) and to prepare site specific national management plans, develop required national legislation and select specific sites for demonstration activities; development or regional standards for pollutant discharge; and activities designed to reduce the impacts of fisheries on significant habitat areas in the Gulf of Thailand – see paras 19-30</li> <li>Outputs that result in global and regional environmental benefits are those that focus on development of regionally agreed frameworks for action to address priority transboundary environmental issues and concerns. They include an agreed strategic action programme with costs and time frames for achievement of specific targets in habitat conservation; reduction in fishing pressure on sensitive habitats in the Gulf of Thailand; and pollution reduction.</li> <li>Outputs that result in national and global benefits include demonstration of management regimes in sites designated as being of regional importance that will result in enhanced conservation of</li> </ul>

	Work Program Inclusion per criteria established in Draft # 8 of the project review criteria	Reference Paragraphs and Explanatory Notes:
		<p>globally significant biodiversity and of fish nursery areas.</p> <ul style="list-style-type: none"> <li>• There are no outputs or activities that result solely in national environmental benefit.</li> <li>• Estimation of incremental cost is described in paragraphs 42 &amp; 43 and in Annex A in which it is noted that environmental benefits have been quantified in dollar terms in the framework SAP based on an analysis of the consequences of a business as usual scenario. The agreed costs of actions have been discussed and analysed at both the national and intergovernmental level. It is estimated that 38% of the costs of demonstration activities reflect the direct regional and transboundary environmental value of the 9 demonstration activities - see para 4, &amp; page 2 of Annex A.</li> <li>• Difficulties in estimating the past baseline are discussed on page 3 of Annex A. It is noted that ongoing contributions from participating countries to regional co-ordination of environmental management actions stand at the level of 0.25 million dollars. Baseline actions and investment at the national level can only be fully assessed in the context of the specific sites for initiation of demonstration activities, that will be selected during year 3 of project implementation.</li> </ul>
<ul style="list-style-type: none"> <li>• Sustainability (including financial sustainability)</li> </ul>	Describe proposed approach to address factors influencing sustainability, within and/or outside the project to deal with these factors	Issues regarding sustainability are discussed in paras 33 – 35 in which it is noted that one criterion for selection of demonstrations sites will be the commitment of governments to longer-term investment in maintaining activities beyond the life of the project.
<ul style="list-style-type: none"> <li>• Replicability</li> </ul>	Describe the proposed approach to replication (for e.g. dissemination of lessons, training workshops, information exchange, national and regional forum etc.) (could be within project description)	Replicability of demonstration activities will be promoted through: regional involvement in site selection; support to regional workshops for transfer of experience and lessons learned; and, through the convening of two partnership conferences to seek additional donor support to extend activities to other sites, considered regionally and nationally important – see para 35.
<ul style="list-style-type: none"> <li>• Stakeholder Involvement</li> </ul>	<ul style="list-style-type: none"> <li>• Describe how stakeholders have been involved in project development</li> <li>• Describe the approach for stakeholder involvement in further project development and implementation</li> </ul>	<ul style="list-style-type: none"> <li>• Primary stakeholders are governments who have been involved in regional expert and intergovernmental (COBSEA) meetings throughout the PDF-B phase from June 1996 see paras 36-40.</li> <li>• Regional expert meetings have involved participation of leading scientists from the START/SARCS regional networks and from national institutions.</li> </ul>

	Work Program Inclusion per criteria established in Draft # 8 of the project review criteria	Reference Paragraphs and Explanatory Notes:
		<ul style="list-style-type: none"> <li>Regional consultations have involved joint discussions and involvement of individuals on a reciprocal basis in meetings of the IOC-WESTPAC; IWG-SCS; &amp; the Regional Fisheries Commission of FAO.</li> <li>At the national level the lead Ministries have convened inter-ministry committees to discuss all aspects of project development and the national reports have been based on inputs from various government sectors, NGOs and institutions see para 36</li> </ul>
<ul style="list-style-type: none"> <li>Monitoring &amp; Evaluation</li> </ul>	<ul style="list-style-type: none"> <li>Describe how project design has incorporated lessons from similar projects in the past</li> <li>Describe approach for project M&amp;E system, based on the project logical framework, including the following elements:</li> <li>Specifications of indicators for objectives and outputs, including alternate benchmarks, and means of measurement.</li> <li>Outline organisational arrangement for implementing M&amp;E</li> <li>Indicative total cost of M&amp;E (may be reflected in total project cost).</li> </ul>	<ul style="list-style-type: none"> <li>Project design has benefited from UNEP experience in the development and operation of the Regional Seas Programme and from the past 16 years of operation as the Secretariat of COBSEA.</li> <li>The TDA and causal chain analysis have benefited from past experience in developing these GEF tools in the Black Sea, Mediterranean, and GIWA, GEF International Waters Projects</li> <li>Indicators for individual objectives and outputs are described in Annex B and include <i>inter alia</i> decisions of intergovernmental meetings to adopt the SAP; regional action plans and agreements regarding criteria for selection of demonstration sites as evidenced by appropriate meeting reports and published plans. Adoption by national governments of national action plans and site specific management plans as evidenced by appropriate meeting reports and published plans. See Annex B</li> <li>para 46 notes that specific process indicators will be developed during the appraisal phase to serve as evaluation benchmarks during project execution, whilst a regional Task Force will be responsible for development of stress reduction indicators and environmental status indicators as integral components of activities within the individual project components.</li> <li>Monitoring of project progress will be the primary responsibility of the UNEP GEF Co-ordination Office and the Bureau of Fund Management Services and will be undertaken via Quarterly Operational Reports, half yearly and end of year financial and substantive reporting in accordance with UNEP's internal guidelines for project monitoring and evaluation.</li> </ul>

	Work Program Inclusion per criteria established in Draft # 8 of the project review criteria	Reference Paragraphs and Explanatory Notes:
		<ul style="list-style-type: none"> <li>The Project Steering Committee, consisting of representatives of each participating government will monitor project progress annually in accordance with agreed project work plans and timetables, and reports will be provided to the intergovernmental meetings of the COBSEA.</li> <li>A mid-term and terminal evaluation will be conducted by independent evaluators, in collaboration with, the Secretariat of COBSEA and the GEF Co-ordination Office of UNEP.</li> <li>A <i>post hoc</i> evaluation will be conducted two years following closure of project activities to ascertain the longer term impacts of the project on regional collaboration in the management of the environment of the South China Sea – see para 48.</li> <li>The indicative total cost of the M&amp;E related activities is 80,000 US\$ and is included within the Implementing Agency Fee.</li> </ul>
<b>3. Financing</b>		
<ul style="list-style-type: none"> <li>Financing Plan</li> </ul>	<ul style="list-style-type: none"> <li>Estimate total project cost.</li> <li>Estimate contribution by financing partners.</li> <li>Propose type of financing instrument</li> </ul>	<ul style="list-style-type: none"> <li>Total Project cost is estimated at 31.683 million US\$ - see cover page and framework budget Table 3.</li> <li>Estimated contribution from financing partners is 15.769 million US\$ - see cover page</li> <li>Grant financing</li> </ul>
Implementing Agency Fees	Propose IA fee	<ul style="list-style-type: none"> <li>976,322 US \$ based on the agreed formula</li> <li>55,000 US\$ premium based on 15,000 of added costs of supervisory travel related to negotiations with PROC during 1999 and 2000 plus 40,000 US\$ estimated costs of 8 high level supervisory missions to address issues of political sensitivity during project execution</li> </ul>
<ul style="list-style-type: none"> <li>Cost-effectiveness</li> </ul>	<ul style="list-style-type: none"> <li>Estimate cost effectiveness, if feasible</li> <li>Describe alternate project approaches considered and discarded</li> </ul>	<ul style="list-style-type: none"> <li>It is not feasible to estimate the cost-effectiveness of the entire project due to the nature and diversity of the proposed interventions. Cost effectiveness of alternatives for specific demonstration activities will be undertaken within the context of development of site selection criteria and applied during final site selection for demonstration activities.</li> <li>In the case of pre-feasibility studies for pollution reduction interventions planned during the second half of the project will include estimation of the cost effectiveness of alternative remedial actions.</li> <li>The project proponents are unaware of any other realistic approach to</li> </ul>

	Work Program Inclusion per criteria established in Draft # 8 of the project review criteria	Reference Paragraphs and Explanatory Notes:
		regionally co-ordinated action that could be adopted to achieve the desired outcomes.
<b>4. Institutional Coordination &amp; Support</b>		
<b>IA Coordination and Support</b> <ul style="list-style-type: none"> <li>Core commitments &amp; Linkages</li> </ul>	Describe how the proposed project is located within the IA's <ul style="list-style-type: none"> <li>Country regional/global/sector programs</li> <li>GEF activities with potential influence on the proposed project (design &amp; implementation)</li> </ul>	<ul style="list-style-type: none"> <li>The project is to be implemented within the framework of UNEP's global Regional Seas Programme and in the immediate context of the Action Plan for the Protection of the Seas of East Asia.</li> <li>Significant co-financing at the regional level is provided through UNEP support to the Intergovernmental meetings of COBSEA which will receive the reports of the project Steering Group and deliberate on potential additional co-financing and technical support to be provided through COBSEA member states.</li> <li>The project serves as a model for SAP development and as noted above (Section 3, sub-section on M &amp; E) has derived benefit from a number of earlier GEF interventions involving the evolution of TDA and causal chain analysis techniques.</li> </ul>
<ul style="list-style-type: none"> <li>Consultation, Coordination and Collaboration between IAs, and IAs and EAs, if appropriate.</li> </ul>	<ul style="list-style-type: none"> <li>Describe how the proposed project relates to activities of other IAs and 4 RDBs in the country/region.</li> <li>Describe planned/agreed coordination, collaboration between IAs in project implementation.</li> </ul>	<ul style="list-style-type: none"> <li>Project activities will be co-ordinated with those of the UNDP implemented East Asian Seas Project and the WorldBank implemented Mekong River project.</li> <li>Specifically in the case of the Mekong River project joint participation of experts involved in project execution will be facilitated through budgetary provision for joint workshops and information exchange. Reciprocal arrangements are foreseen in both project documents.</li> <li>In the case of the UNDP/IMO/GEF East Asian Seas project, reciprocal participation of experts in meetings convened within the framework of each project is foreseen; the Co-ordinator of UNEP's EAS/RCU participates in Steering Group meetings of the UNDP implemented project and the Co-ordinator for the East Asian Seas GEF project is invited to, and participates in COBSEA meetings.</li> </ul>
<b>5. Response to Reviews</b>		
Council	Respond to Council comments at pipeline entry	N/A
Convention Secretariat	Respond to comments from Convention Secretariat.	N/A
GEF Secretariat	Respond to comments from GEFSEC on draft project brief.	All issues raised by GEF Secretariat have been satisfactorily addressed
Other IAs and 4 RDBs	Respond to comments from other IAs, 4RDBs on	Response to informal comments of the WorldBank provided 18 <sup>th</sup>

	<b>Work Program Inclusion per criteria established in Draft # 8 of the project review criteria</b>	<b>Reference Paragraphs and Explanatory Notes:</b>
	draft project brief.	September 2000
STAP	Respond to comments by STAP at work program inclusion.	
Review by expert from STAP Roster	Respond to review by expert from STAP roster	The response of UNEP is contained in Annex C1 of the project brief

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