

GLOBAL ENVIRONMENT FACILITY  
UNITED NATIONS DEVELOPMENT PROGRAMME

PROGRAMME DOCUMENT

Regional Programme for Asia and the Pacific:  
Brunei, Cambodia, Democratic People's Republic of Korea,  
Indonesia, Malaysia, People's Republic of China, Philippines,  
Republic of Korea, Singapore, Thailand, Vietnam,

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1995  
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Number and Title: RAS/92/G34/3/1G/19 Prevention and Management of Marine Pollution in East Asian Seas

Duration: Five Years UNDP and cost-sharing financing

Programme Office Site: Manila, Philippines UNDP  
GEF \$8,000,000  
Other (specify) \$ \_\_\_\_\_

ACC/UNDP sector and subsector: 200 Environment Govt. or third-party cost-sharing (specify)  
201 Environmental Policy, Planning & Legislation UNDP & cost-sharing  
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Government implementing agency: National Govts./Authorities charged with marine affairs

Executing agency: International Maritime Organization

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(in kind) \_\_\_\_\_  
(in cash) \_\_\_\_\_

Brief description: The purpose of this programme is to strengthen the regional capability in marine pollution management by demonstrating the effectiveness of integrated coastal zone management and management of marine pollution risks. The programme will also support the development of a regional marine pollution information management and monitoring network and strengthen the capacity to enforce and comply with international conventions to control marine pollution.

On behalf of: Signature Date Name/title (please type)

Executing Agency: [Signature] 13 Nov 93 \_\_\_\_\_

UNDP: Aithin N. H. Limbe 13/11/93 \_\_\_\_\_

## GEF EAST ASIAN MARINE POLLUTION MANAGEMENT

### A. Context

#### 1. Description of the subsector

Increasing public concern over the state of the marine environment and the realization that pollution has severe effects on the sustainability of economic development have persuaded many coastal nations to pay closer attention to the management of their coastal and marine resources and invest in the protection of their environment.

The World Wildlife Fund for Nature submitted a proposal in cooperation with ASEAN (Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore, Thailand) for Global Environment Facility (GEF) support based on the framework of the ASOEN Action Plan. Four other governments (Cambodia, Democratic People's Republic of Korea, People's Republic of China, and Vietnam) also submitted proposals or signalled their interest in the abatement and management of marine pollution. The prospective projects were pooled and reformulated into a regional GEF programme with an allocation of US \$8 million. Additionally, the Republic of Korea has indicated its interest in participating in this regional activity.

The GEF is a cooperative venture between national governments, the United Nations Development Programme, the United Nations Environment Programme, and the World Bank. Currently in the final year of a three-year pilot phase, the GEF is intended to provide incremental grants to developing countries for activities which directly benefit the global environment.

The four global environmental concerns which have been identified by the GEF for support include:

1. reduction of global warming
2. conservation of biological diversity
3. protection of international waters
4. protection of the ozone layer

The East Asian programme described below responds to the third concern (protection of international waters), which involves reduction of environmental stresses on coastal and offshore waters shared by two or more countries. A key emphasis of the GEF is demonstration of innovative, cost-efficient, and effective approaches to solving the most significant global environmental problems. It is hoped that the demonstration of effective management of environmental problems will lever significant amounts of co-financing, such that the strategic approaches funded by the GEF can be replicated on a wider basis and actually lead to a global reduction of pollution.

#### Formulation Strategy

Given the diversity of the countries gathered together into this single project, the complexity of their needs, and the NGO origins of the initial submission to the GEF, it was determined that the formulation strategy must cast a wide net to: maximize complementarity with other regional and national endeavours; ensure that the project is situated at the cutting edge of programme development and implementation, both regionally and globally; analyze national priorities and global environmental concerns; and to identify potential partners.

The main constraints to solving marine pollution problems in East Asian Seas: include insufficient political determination to implement and enforce existing regulations; lack of trained personnel at the policy, planning, and management levels; the absence of integration, coordination, and cooperation between agencies and governments; and insufficient funds or economic justification for investment in appropriate technologies and other feasible means to control pollution. These constraints can operate individually or converge to paralyse effective or efficient actions.

Integrated Coastal Zone Management embraces resource use and related issues along the coastal fringe, on the land and in the water. It provides a conceptual framework within which the cumulative, multi-sectoral environmental consequences of development can be managed to remain within tolerable limits. The Integrated Coastal Zone Management approach was identified in UNCED Agenda 21 as potentially the most effective mechanism to manage the marine environment and achieve sustainability. Many of these efforts are in the early planning stages. There is an urgent need to demonstrate how marine pollution can be effectively managed through such an integrative and comprehensive planning approach.

## 2. Host countries' strategies

Currently there are efforts in China and the ASEAN nations to develop Integrated Coastal Zone Management programmes.

On the legal side, most nations (except Cambodia and Vietnam) have already enacted the necessary laws and regulations to control or prevent discharges into the marine environment. Only a few nations are signatories to MARPOL and other international agreements. However, these laws and regulations are not always easily implemented. For example, there is a problem with ineffective law enforcement due to inadequate institutional arrangements and lack of trained human resources. Even where the legislative capability exists, the lack of strong political and financial commitments and an inadequate understanding of the legislative requirements and mechanisms available prevent most countries in the region from fulfilling their international obligations under these marine pollution prevention conventions.

China and Singapore have the strongest institutional capability for the planning and management of their marine environment. Singapore is particularly strong in port management. Being a small island state with a single layer of government, Singapore has demonstrated a remarkable political will to manage land-based sources of pollution through preventive, control and enforcement measures. This type of management may or may not be applicable or appropriate to all situations in the region. Most other countries in the region are still in the early stages of developing the capability to manage pollution in harbour areas, manage waste from ships, institutionalize information gathering and management programmes, and set up water quality criteria and discharge standards.

While many data collection activities have recently been undertaken in the region, most are rather general and limited to specific countries or sub-regions. A comprehensive picture of the state of the environment in the East Asia Seas is still lacking, despite earlier efforts to compile such information. More important is the lack of a regional mechanism to ensure continuous updating of information, adequate storage, and effective access and retrieval of the databases for the region.

With the exception of China, Singapore, Malaysia, Thailand and Indonesia, most participating countries in East Asia have not yet established effective pollution assessment and monitoring stations, although ad hoc surveys and studies have been undertaken in some coastal waters. A regional network is obviously needed to facilitate the regional integration of national information.

ESCAP has supported training on marine and coastal resource issues and published guidelines for management of hazardous industrial waste.

The Intergovernmental Oceanographic Commission (IOC)--associated with UNESCO--has been active in marine research, ocean services, training, education, and mutual assistance in the region. Through the Sub-Commission for the Western Pacific Region (WESTPAC), the IOC has developed a programme on marine pollution research and monitoring. This project consists of three sub-projects, including assessment of river inputs, implementation of Mussel Watch, and assessment of atmospheric pollutants. WESTPAC, in assessing their response to UNCED, is considering multidisciplinary studies in the Gulf of Thailand, the Gulf of Tonkin, and the Malacca Strait. IOC/UNESCO has been active in this area as well, providing support to the Mussel Watch programme in Indonesia through training and laboratory upgrading. UNESCO is interested in adding to the laboratory network for the Mussel Watch programme.

To these initiatives can be added the formation of the ASOEN's Working Group on ASEAN Seas and Environment and the ASEAN Council of Petroleum Plan for the Control and Mitigation of Marine Pollution. These all indicate that governments in the region are seriously concerned about marine pollution.

Many bilateral and multilateral projects have also contributed to the management and protection of the marine environment. The ASEAN/USAID Coastal Resources Management Project has made a significant contribution to the planning of an integrated management approach to achieve sustainability in coastal development. The project has made a strong impact on policy orientation in the six ASEAN countries. For example, all ASEAN countries have developed coastal environmental profiles and have started to implement integrated coastal zone as a tool to effectively manage the increasing rate of development in the coastal zone. China has also initiated Integrated Coastal Zone Management activities.

The ASEAN/AIDAB Projects on "Tides and Tidal Phenomena" and the current one on "Living Coastal Resources Management" have provided valuable scientific data for the management of marine habitats in the region. The second phase of the ASEAN/Canada project focuses on the assessment of marine pollution by heavy metals and bacterial contamination while also addressing the issue of red tides.

The past efforts of regional and international agencies or institutions in the prevention and management of marine pollution in East Asian Seas have been fundamental to the increased awareness of marine pollution problems in the region and the establishment of various working groups to deal with them. These initiatives have for the most part focused on delineation of the problems, data gathering, research and training which, although critical to development of pollution management, have not been designed to actually implement and test innovative management measures. With increasing pressure from population growth and accelerated economic development, there is a critical need to move from information gathering to the management and solution of marine pollution problems.

#### 4. Institutional framework

Most of the participating countries have either more than one department with responsibility for marine pollution matters or, in some instances, national committees have been formed to deal with the entire sector. These departments or committees are:

Brunei Darussalam - National Committee for Environment. The committee has representatives from relevant ministries, agencies and industry.

Ministry of Transport, the Hydrometeorological Service, the National Oceanographic Data Centre, and the Continental Shelf Committee of the Council of Ministers of Vietnam. The responsibility for the overall management of environment and natural resources originally was with the State Committee for Sciences (SCS) of the Department of Natural Resources and Environment.

National institutions (such as research centres, laboratories, government services, universities), designated by each participating government, provide the legal, technical and scientific basis for carrying out sub-programme activities.

## **B. Programme Justification**

### **1. The problem to be addressed; the present situation**

Previous efforts concerning marine pollution in East Asia have focused on research to define the problems, rather than to develop and test marine pollution management measures. Past initiatives have generally been undertaken at the national level, although there have been a few exceptions, especially in the ASEAN countries. Well-focused regional implementation initiatives and information dissemination activities in the marine sector would enhance standardization, common understanding and, eventually, compliance with international conventions.

Few East Asian countries have ratified international conventions on marine pollution prevention and most countries have inadequate laws and regulations to effectively manage marine pollution. Enforcement of the existing laws is also a significant problem throughout the region. (See Annex IV for chart on Status of Ratification on International Conventions related to the Protection of the Marine Environment.)

The problem is further compounded by lack of effective national institutional frameworks for the marine sector. Most countries have at least several departments with overlapping jurisdictions. Improvement of the legal and administrative arrangements is required throughout the region if there is to be effective management of marine pollution.

There is no harmonization of regulations or water quality standards throughout the region. A regional approach is imperative in order to deal with pollution problems which span several national jurisdictions and/or occur in international waters.

Regional training is one of the most effective means of bringing countries with different pollution management capacities up to similar levels.

There have been many training initiatives throughout the region related to the marine environment, but these have tended to be restricted to research and analytical techniques required to assess marine pollution, rather than control or prevent it. There has been some training in contingency planning, but only in some countries within the region. There is an urgent need to provide training in the planning, development, and implementation of pollution management and to expose more levels of government and agency personnel to this type of training.

The lessons from national pollution management activities can be disseminated throughout the region through workshops and demonstration projects.

Despite several initiatives to create information networks at the subregional level, not all members of the region are equally served at present. Nor is there sufficient knowledge and experience in the region on information utilization and management at the local level. It is suspected that there is a significant overlapping amongst different information systems related to marine pollution. There is a critical need to organize the collection, analysis and dissemination of marine pollution information and particularly to focus on the relevance to management needs.

A series of state of the marine environment reports will have been initiated. There will also be increased harmonization of emission and water quality standards.

Each country will have ratified and implemented the most critical international marine pollution conventions. This will be facilitated by a regional association of marine environmental legal experts. All countries will have improved administrative and legal structures pertaining to marine pollution.

There will be increased involvement of the public in the development and implementation of marine pollution management strategies. There will be a broader spectrum of government and institutional personnel trained in pollution management techniques/measures. Consequently, there will be a larger pool of local specialists available to all countries in the region, providing a higher level of intra-regional co-operation in marine pollution management.

Several viable long-term financing options will be defined and available for development and implementation of innovative regional marine pollution management strategies, involving both public and private sectors.

### 3. Target beneficiaries

By contributing to the reduction of coastal and marine pollution in East Asia, the international community will gain from the reduction in the total input of pollutants to the global ocean. The overall benefit impacts on a critical global environmental problem, one of the four thematic targets funded by the GEF. The targeted beneficiaries of the programme will be the governments of countries bordering the East Asian Seas. Government and institutional personnel, especially administrators and middle managers, will benefit from direct involvement in demonstration projects, workshops, and training. The ultimate beneficiaries will be the people of the East Asian region who depend on the coastal and marine environment for their health, well-being, quality of life, and livelihood.

### 4. Programme strategy and implementation arrangements

Taking into consideration the funds available, as well as the diverse political, social, cultural, and economic conditions in the region, the overall programme strategy is two-fold, namely:

- 1) Achieving regional cooperation and sustainability; and
- 2) Capacity-building.

Key activities are:

- Develop and demonstrate working models on marine pollution reduction/prevention and management of marine pollution risks;
- Assist participating nations in developing the necessary legislation and technical capability to implement international conventions relating to marine pollution;
- Strengthen institutional capacity to manage marine pollution problems;
- Develop a regional network of centres for information management and monitoring of marine pollution;
- Promote public awareness and public participation in the abatement of marine pollution;

- a firm request or show of interest from central or preferably, local government.

The demonstration projects are designed to:

- show the value of planning and public consultation in the prevention of marine pollution, particularly by considering environmental issues in the overall planning of coastal development, and the reduction of multi-sectoral conflicts;
- confirm the economic benefits of investment pollution prevention and mitigation programmes and practices;
- illustrate the effectiveness of coastal area management in marine pollution prevention and control;
- demonstrate the sustainable long-term social and economic benefits of addressing marine pollution problems proactively;
- demonstrate the applicability of Integrated Coastal Zone Management in the region despite the large variation in socioeconomic, political, and cultural conditions;
- demonstrate the effectiveness of risk assessment, preparedness and response, as techniques in establishing effective marine pollution management.

The first two sites (Xiamen and Batangas) will focus on Integrated Coastal Zone Management, an approach which represents a shift from a reactionary, problem-oriented approach to a planned, preemptive, and management-based approach. The third proposed site (Malacca Strait) will focus on risk management, which requires the identification of sources of pollution, the probability of accidental events, and the identification of vulnerable resources. Through the application of the Geographic Information Systems (GIS), these activities will allow development of effective planning and management measures and appropriate contingency plans.

All demonstration site activities are designed to be replicated in other coastal areas throughout the region. Recognizing that the scope but not the methodology of the risk management site (Malacca Strait) would be substantially different for lower risk areas. For example similar approach in the development and implementation of oil spill contingency plan could be adopted to situation in the Lombok-Makassa Straits, the Gulf of Thailand, Gulf of Tongkin, the yellow sea, the coasts of Brunei Darussalam, Sabah and Sarawak and other areas in the East Asian Seas with offshore oil exploitation and transportation. The demonstration sites can be used as primary training grounds for other resource managers and have the potential to become good examples where there can be economic growth without compromising environmental quality.

The demonstration projects will also provide an opportunity for public consultation (through local task forces) and public awareness campaigns. Recognizing that an informed public is a valuable resource for the decision-making process in environmental management, decision-makers can avail themselves of the expertise and indigenous knowledge that can only be found in the communities at large.

#### Data and Information Management

A comprehensive picture of the state of the marine environment in East Asia is still lacking, despite earlier efforts to compile such information. Effective marine pollution management in the East Asian region will be enhanced with the establishment of a network of field stations to effectively monitor the quality of coastal and offshore waters. Standardization of analytical techniques, inter-calibration of field station operations and designation of region-wide water quality criteria are some of the activities that will be undertaken during the programme. A regional mechanism to ensure continuous updating of information, adequate storage and effective access and retrieval of the data

allowing a cross-fertilization of legal concepts. Such an association will facilitate the sharing of experiences in formulating and monitoring national legislation for the implementation of international conventions. The experience of the ASEAN environmental legal experts group will be a valuable guide in expanding marine environment legal activities to the whole East Asian region.

Recognising the cross-boundary nature of marine pollution problems in the region, the association of legal experts will be requested to examine the possible harmonization of marine environmental legislation, emission standards, and water classification criteria. The association will also be invited to examine institutional roles and responsibilities for marine pollution management in each country, in order to assist in reducing the overlapping responsibilities of national departments/agencies.

#### Financial Sustainability

If there is to be effective long-term management of marine pollution in East Asia, the cost effectiveness of the management measures and the full involvement of the private sector will have to be defined. Current practices are neither cost effective nor do they fully include the private sector. The GEF project will focus on developing innovative approaches that will involve all sectors active in the coastal area, and the implementation of a self-reliant marine pollution management system. The demonstration of innovative management measures, hopefully, will attract funding from other agencies working in the region. In addition, the programme will include an examination of various funding options, such as trust funds, environmental swaps, green taxes, revolving funds, etc.

#### Training

Training needs assessment has been proposed for each main programme activity. Curricula and training materials will be specific, concentrating on the marine pollution management needs of the region. To ensure as much exposure of government and agency staff as possible to marine pollution management, the emphasis will be on short courses and workshops and longer-term exchange assignments.

An important aspect of the proposed training programme is its practical nature. It will be directly linked to demonstration site activity (for example, planning and management workshops and exchange assignments) and to the most critical regional marine pollution management needs (such as pollution monitoring and drafting and implementation of relevant legislation). The more technical aspects, such as oil spill computer modelling and GIS, will be addressed by fellowships for short courses.

The movement of trainees, the use of trainers and training facilities within the region, and the application of the common knowledge and expertise gained from training, will contribute to the standardization of the philosophies and techniques for the management of coastal and marine pollution.

In order to achieve a degree of regional "ownership" of the training component, the programme must take into account the special needs of the region as well as the specific needs of individual participating countries. This accommodation will not be easy since the needs within the region are quite varied and so are the contexts within which the trainees will eventually practice what they have learnt. This could be achieved through training of trainers consisting of a local core group of technically competent scientists, technicians, administrators and managers. The core group can undertake the training of compatriots using the knowledge, manuals, and visual aids from the training of trainers.

Wherever possible, the programme should cooperate with other agencies responsible for training courses and collaborate on those activities that fit the training objectives of the programme.



With regard to land-based sources of pollution, IMO is one of the core agencies co-operating in the preparation of a global programme of action for the protection of the marine environment from land-based activities. IMO is currently in the final stages of the Global Waste Survey, a project which has produced: (i) a Global Waste Inventory and Database; (ii) an in depth assessment of the capacity of 17 industrialized and developing countries to manage industrial and hazardous waste; and (iii) case studies on the development of various aspects of environmentally sound national waste management programmes. A major output of the Global Waste Survey will be a global strategy and action plan for technical co-operation under the London Convention 1972.

Of particular relevance to the "demonstration" aspects of the programme, IMO has successfully executed a project entitled "Plan of Action for the Protection of the Senegalese Waters and Coasts". This multi-sectoral project involved assessment of inland and coastal water quality and the impact of human activities. The outputs of the project include an environmental management plan and formulation of a legal framework and implementation of a training programme.

International conventions relating to maritime safety and marine pollution prevention are initiated and monitored by IMO, although enforcement depends on the Contracting Parties to such Conventions. The majority of conventions adopted under the auspices of IMO, or for which the Organization is otherwise responsible, fall into three main categories, namely: maritime safety; marine pollution; and liability and compensation. IMO is also responsible for the Secretariat duties of the Convention on the Prevention of Marine Pollution by Dumping of Waste and Other Matter, also known as the London Convention 1972. The Convention controls and regulates, on a global level, the disposal of waste (e.g., dredged material; industrial waste; radioactive waste; sewage sludge) and other material (including ships and platforms) at sea. Other articles of the Convention are designed to promote regional cooperation, particularly in the fields of monitoring and scientific research.

IMO also provides the administration secretariat for the United Nations Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP).

It is relevant to note that IMO has been an active participating agency in the development of all the UNEP Regional Seas Programmes, including the East Asian Seas, and has established memoranda of understanding and co-operative arrangements with relevant international and regional organizations.

From the foregoing, it is apparent that IMO is well-positioned to undertake the task of the executing agency and to secure the co-operation of relevant international and regional organizations.

### **Coordination**

IMO will establish a region-based programme office that will develop, coordinate and supervise the implementation of all activities. The IMO programme office will remain small and flexible, and will be headed by an internationally recruited programme manager. In addition, resources will be made available at IMO headquarters for technical and scientific support.

Effective management of marine pollution requires reliable technical and socioeconomic data and good scientific advice for policy and management decisions. There are considerable scientific strengths in the region that can contribute to the management of marine pollution. The programme office will be responsible for maintaining a roster of scientists and specialists from both within the region and from other parts of the world. When specific technical or scientific issues are identified, the required experts can then be contracted to provide the needed assistance. In addition, the programme will also seek the advice of GESAMP on management issues that require scientific review and interpretation.

A Programme Steering Committee (PSC), consisting of country representatives from all participating nations, as well as membership from UNDP and IMO, will direct the programme. Selected

**D. Immediate Programme Objectives, Outputs and Activities**

**Immediate Objective 1**

**Success Criteria**

To strengthen the regional capability to manage marine pollution through demonstration of integrated coastal zone management and pollution risk management.

The demonstration sites mentioned herein are the proposed sites and activities as suggested by the formulation mission. These sites and detailed work plan are subject to endorsement by the Programme Steering Committee at its first meeting. Expansion of sites is foreseen during the life of the programme based upon available funding. Criteria used in the selection of sites are described in Section 4, Programme Strategy.

By the end of the programme, each participating country will have implemented, to some degree, pollution prevention and management measures at selected sites through the application of the integrated coastal planning and management approach and pollution risk management strategies in the coastal and marine areas.

**Demonstration Site 1 - Xiamen, China**

**Output 1.1**

**Success Criteria**

Establishment of a planning/coordination framework and mechanism for marine pollution mitigation in Xiamen. (See Annex V, Xiamen)

By the end of 18 months, a Task Force, the integrated coastal zone management national site manager, the Marine Affairs Division, and a Coastal Research Coordination Unit will have been mobilized to implement the Xiamen project.

**Activities for Output 1.1**

**1.1.1** Establish a multidisciplinary/multi-agency Task Force comprising of municipal government, specialized or line agencies (port and harbour, fisheries, oceanic administration, environment, transport, town and country planning, etc) and professional organizations (universities and research institutions) to initiate, organize, and coordinate all project activities, from development to implementation, of the environmental management plans.

**1.1.2** Appoint a site manager and establish a project field office to: (i) coordinate the planning and implementation of project activities; (ii) assist the Task Force in project activities development, coordination and implementation; and (iii) serve as the local focal point for the Executing Agency throughout the programme.

**1.1.3** Strengthen the Marine Affairs Division of the local government to undertake regulatory measures in the management of marine pollution, as adopted by the Task Force by: (i) upgrading the technical and management capabilities of the senior officials; (ii) upgrading institutional capability in terms of field investigation and inspection and professional capability, including legislation development; (iii) establishing viable integrated legislative mechanisms and tools to implement coastal and marine environment legislation; (iv) participating actively in the interagency Task Force; and (v) facilitating and coordinating the environmental management activities of other line agencies and sectors.

**A. Economic Feasibility Study and Legislative Analysis regarding the Establishment of a Marine Environmental Protection Foundation**

(Close linkages to activities under output 4.1 and in collaboration with WWF on sustainable financing).

**Subactivity 1.2.4.1** Study the economic viability of establishing a coastal and marine environment protection foundation including: (a) allocation of natural resources through the functional zonation concept; (b) investigation and development of policies, methods and legislation necessary to secure financial support pollution-generating sectors and users of the coastal and marine environment, including: ports and harbours; aquaculture industry; coastal tourism; intertidal zone users and developers; coastal and ocean dumping sectors; ship and vessel owner/operators; etc.

**Subactivity 1.2.4.2** Promote the implementation of existing marine legislation, established by the State Oceanic Administration, by developing and promoting implementation strategies and monitoring and research programmes.

**Subactivity 1.2.4.3** Establish a Coastal and Marine Environmental Protection Foundation, and implement activities in the following areas:

- i) coastal and marine environment education;
- ii) public awareness and support; and
- iii) environmental investments by the private sector, including financial support by foreign and joint investors.

**B. Waste Management and Selection of Disposal Sites**

**Subactivity 1.2.4.4** Analyze the ecological, social and economical impacts of existing and potential waste disposal practices in Xiamen coastal and marine waters. The study will include the following activities:

- i) analyze secondary information and, when necessary, undertake primary data collection pertaining to: ecological and socio-economic impact; existing institutional and organizational arrangements on the management of waste discharges in coastal areas and waste dumping at sea; and factors constraining the effective management of waste.
- ii) identify local legislative measures necessary to effectively control and manage waste within the general framework of national legislation and international conventions.

(The above activities will be undertaken in collaboration with IMO's Global Waste Survey)

**C. Functional Zones for Coastal Aquaculture Development and Management**

**Subactivity 1.2.4.5** Conduct aerial surveys of existing aquaculture development; other remote sensing data from satellite imagery will also be analyzed to determine the extent of water bodies being used and to determine the rate of expansion of aquaculture farms. Aerial surveys will be conducted using the surveillance planes from the State Oceanic Administration.

- ii) assess political and societal considerations, expectations and final conclusions as well as the financial investment in the treatment of pollution in the lagoon; and
- iii) identify the successes and inadequacies in the treatment and management of marine pollution in the lagoon, including a comprehensive chronological report of the last 10 years of government efforts from planning to implementation.

**Subactivity 1.2.4.11** Organize regional training courses on the lessons learned in the treatment and management of marine pollution in Yuantan lagoon. The course will also include experience and lessons learned from the clean up of the Singapore River.

**F. Development of a Geographical Information System (GIS) for Integrated Planning and Management of Marine Pollution**

**Subactivity 1.2.4.12** Establish a package, including hardware and software, where necessary to translate existing data relevant to integrated planning and management of the coastal zone in Xiamen into GIS format. The GIS package will facilitate updating of the data and its practical usage by planners and resource managers and will include the following:

- i) information (GIS maps) on the types of pollutants, their distribution and level in Xiamen coastal waters;
- ii) information (GIS maps) on the distribution of aquaculture farms and potential development sites;
- iii) information (GIS maps) on land use and water use patterns and protected areas; and
- iv) information (GIS maps) on the major sources of pollution, particularly polluting industries.

**1.2.5** Develop water quality criteria and standards for the coastal and marine environment, to ensure the safety and health security of all users; assist in the development and enactment of appropriate municipal legislation required to execute environmental management action plans. The activity will be undertaken in two parts, as follows:

- i) development of water quality criteria and standards; and
- ii) researching municipal legislation which impacts on the protection and management of the marine environment and formulating prescribed measures for the implementation of the environmental management action plans (including support to draft municipal legislation and promotion through the normal government approval/adoption process).

(IOC/UNESCO and UNEP will be consulted during this activity.)

**1.2.6** Undertake impact assessment (IA), develop guidelines on the control and elimination of marine pollution from specific sources/uses of the marine environment and implement an integrated coastal zone management programme to prevent and manage coastal and marine pollution.

**Output 1.4**

**Establishment of training programme to train personnel from Xiamen and from participating countries in integrated coastal zone management techniques related to marine pollution prevention and mitigation.**

**Success Criteria**

**By the end of the programme, at least 40 individuals from all participating countries will have been trained in integrated coastal zone management related to marine pollution prevention and mitigation.**

**Activities for Output 1.4**

**1.4.1 Assess training needs related to integrated coastal area management for the region and develop appropriate training strategies around Xiamen's experience.**

**1.4.2 Organize joint training with the Philippines and Singapore on the application of integrated coastal zone management as a viable management system for the prevention and management of marine pollution.**

**1.4.3 Organize and conduct demonstration workshops for policy makers on effective marine pollution management through the integrated coastal zone management framework.**

**1.4.4 Develop a staff exchange assignment programme for the participating countries interested in acquiring integrated coastal zone management knowledge and experience.**

**Responsible parties: Programme manager, technical advisor, national site manager, research coordinating unit, consultant and in collaboration, as appropriate, with on-going training activities related to coastal area management in the region.**

**Demonstration Site 2 - Batangas, Philippines****Output 1.5**

**Establishment of a planning/coordination framework for marine pollution prevention and management in Batangas, Philippines.**

**Success Criteria**

**By the end of 18 months, a Task Force, a site manager, the Batangas Foundation, and a Coastal Zone Management Council will have been mobilized to implement the Batangas project.**

**Activities for Output 1.5**

**1.5.1 Establish a Batangas Bay Management Task Force through the Provincial Development Council comprised of concerned municipal governments, line agencies, and representatives from Batangas Bay Coastal Resources Management Foundation, NGOs and coastal/marine research institutions, to guide the planning and implementation of the environmental management action plans. The provincial governor will be chairman of the Task Force.**

**Subactivity 1.5.1.1 Establish an interagency Task Force lead by the Provincial Government. Members will include all relevant line agencies, the site manager, a representative of Batangas Bay Coastal Resource Foundation, NGOs and scientific institutions.**

Undertake rapid appraisal/diagnosis of coastal area activities and their impact, to fill any significant information gaps.

**Subactivity 1.6.1.2** Prepare a strategic management plan for Batangas Bay, including: a general zonation scheme; a legal and organizational framework; and provincial coastal/marine environmental management policies, based on collected information and in consultation with key stakeholders (to be undertaken by the multidisciplinary planning and development team).

**Subactivity 1.6.1.3** Publish the environmental profile and the strategic management plans

**1.6.2** Prepare a local land and water use zonation scheme based on national/local government needs and priorities and environmental characteristics.

**Subactivity 1.6.2.1** Prepare a first generation functional coastal zonation scheme to delineate areas for specific economic activities, including: industrial development; port and harbour development; aquaculture; agriculture; fishing; human settlement; etc. The scheme will be based upon existing and potential government development plans, and shall be subject to appropriate impact assessment.

**1.6.3** Consult with stakeholders (NGOs, community representatives, industries) during the design and review of the environmental management plans

**1.6.4** Undertake research to fill information gaps identified during the consultation process, and develop a Geographical Information System (GIS) for tracking, updating and refining the environmental management plan.

**Subactivity 1.6.4.1** Assess the implications of existing and proposed hazardous waste management practices with respect to threats to human health and protection of the coastal and marine ecosystems (in collaboration with similar activities in Xiamen).

**Subactivity 1.6.4.2** Undertake studies on, and quantify where possible, waste generation and disposal from land and sea-based sources; estimate the present and potential environmental impacts particularly on the beach resorts in Anilao; and recommend measures for an environmentally sound waste management programme, including the identification of potential waste treatment and disposal sites.

(To be completed in close collaboration with IMO's Global Waste Survey.)

**Subactivity 1.6.4.3** Establish baseline data on the quality of coastal waters, state of the marine and coastal ecosystems in the management area.

**Subactivity 1.6.4.4** Undertake feasibility study on establishing a Batangas Bay Environmental Management Fund including an economic assessment on the level and magnitude of usages of coastal resources for various economic activities; examine the existing taxation system on the use of coastal areas for various economic activities; explore financial options for setting up a fund and the resulting short, medium and long-term implications.

(Close linkage will be maintained with activities in output 4.1 and in consultation with WWF on sustainable financing.)

will summarize information gathered from subactivities 1.6.2.1, 1.6.2.4., 1.6.2.6 and 1.6.2.7

**Subactivity 1.6.6.2**      **Develop guidelines to prevent and manage marine pollution from:**

- i)      **intentional and accidental discharges from ships in port;**
- ii)     **coastal industries;**
- iii)    **tourism development activities; and**
- iv)    **land-based pollution sources influencing the coastal region**

**Subactivity 1.6.6.3**      **Develop and implement a strategy and action plan for waste management.**

**Responsible parties:** Programme manager, technical advisor, national site manager, the programme planning and development team, consultants, Batangas Bay Resource Management Foundation, Marine Science Institute, University of the Philippines in the Visayas, Seafdec Aquaculture Department and in consultation or collaboration with WWF, IOC/UNESCO, IMO and the Asian Fisheries Society.

#### Output 1.7

#### Success Criteria

**A monitoring programme to track changes in pollution management in Batangas, Philippines.**      **By the end of the programme, a network of centres will have been established with the necessary technical capacity to maintain an ongoing marine pollution monitoring programme designed to identify and track marine environmental quality changes resulting from new management measures.**

#### Activities for Output 1.7

**1.7.1**      **Identify the marine environmental quality changes anticipated and the most appropriate environmental indicators to monitor. Main components of the activity include:**

- i)      **identification of expected changes resulting from implementation of the marine pollution prevention and management action plans, particularly with respect to: (a) effectiveness and efficiency in implementing legislative measures; (b) improvement of environmental quality; (c) economic gains; (d) social order; and (e) sustainability of economic development;**
- ii)     **selection of environmental indicators for long-term monitoring to track changes over time, to 1998 and beyond;**
- iii)    **assessment of the effectiveness of the marine pollution prevention and management programme.**

**1.7.2**      **Undertake monitoring and assessment of the marine environment and evaluate the effectiveness of the implementation of marine pollution management measures.**

**Responsible parties:** Programme manager, technical advisor, national site manager, the programme planning and development team, and in consultation or collaboration with IOC.

**Subactivity 1.9.2.1** Organize a subregional consultation meeting involving Indonesia, Malaysia and Singapore to jointly: (a) develop a coordinating framework for pollution risk management and seek optimum co-ordination with existing subregional and regional institutional arrangements; (b) review, refine and prioritize proposed activities contained in the programme document; and (c) establish a working mechanism to strengthen regional efforts in pollution risk management in the Malacca Strait.

**Responsible parties:** Programme manager, technical advisor, consultant, participating governments (Indonesia, Malaysia and Singapore).

#### Output 1.10

#### Success Criteria

**Maps of resources in Malacca Strait vulnerable to oil spills.** By the end of 36 months, Malacca Strait resource maps in GIS format will have been produced.

#### Activities for Output 1.10

**1.10.1** Examine the status of existing information on resources in Malacca Strait which may be vulnerable to oil spills

**Subactivity 1.10.1.1** Set up an interdisciplinary team with expertise in socioeconomics, ecology, pollution, fisheries and aquaculture, mangroves and oceanography to collect and analyze secondary information related to natural resources, their distribution and uses; determine habitats or resources which are being threatened by pollution derived from sea-based sources; prepare background papers for a joint workshop; conduct a workshop on vulnerable natural resources in the Malacca Strait.

**Subactivity 1.10.1.2** Publish workshop proceedings on "Resource at Risks in the Strait of Malacca".

**1.10.2** Develop a database on physical, biological, and economic resources in Malacca Strait.

**Subactivity 1.10.2.1** Analyze, using remote sensing technology, the distribution, size, and conditions of critical habitats (such as mangroves, sea grass beds, mud flats) and other resource systems (estuaries, bays, lagoons), human settlements, beaches, ports and harbours, aquaculture farms, fishing grounds, breeding and nursery grounds and other sites within the Malacca Strait which may be vulnerable to oil spills.

**Subactivity 1.10.2.2** Determine fisheries resources and fish stocks which may be vulnerable to potential oil spills.

**1.10.3** Produce GIS maps of the resources vulnerable to oil spills, pollution response jurisdictions, location of equipment, etc.

**Responsible parties:** Programme manager, technical advisor, consultants, key national institutions: Univeristi Sains Malaysia, Universiti Pertanian Malaysia, Center for Coastal and Oceanographic Research (Indonesia); Department of Environment of Malaysia and Singapore and BAPPEDAL (Indonesia) as well other concerned government agencies and in consultation and collaboration with IMO, EARL and ASEAN bilateral programmes with Australia and Canada.



**1.12.2** Review existing vessel traffic separation schemes and undertake feasibility studies on the introduction of reporting schemes based on the pollution risk assessment previously undertaken

**1.12.3** Develop and strengthen the existing airborne detection/surveillance system to deter illegal discharges of oil and to monitor oil movements in the event of spills

**1.12.4** Examine and improve ship inspection procedures and port state control related to shipping

**Responsible parties:** Programme manager, technical advisor, consultants, IMO, marine legal association and in consultation with the oil and shipping industry.

### Output 1.13

### Success Criteria

Effective oil pollution preparedness and strategies for Malacca Strait..

By the end of the programme, effective oil pollution response strategies for Malacca Strait will have been implemented.

### Activities for Output 1.13

**1.13.1** Review the effectiveness of existing national oil spill contingency plans and recommend improvements in the content of plans and the coordination of response procedures, taking into account the requirements under OPRC 1990.

**Subactivity 1.13.1.1** Prepare a background document on existing national oil spill contingency plans and submit recommendations for compliance with OPRC 1990.

**1.13.2** Assess the training requirements for equipment to be supplied by Japan under the OSPAR project for oil spill clean-up operations in the Malacca Strait

**1.13.3** Establish a subregional coordination mechanism to implement the oil spill contingency plans and to coordinate annual oil spill response exercises

**Subactivity 1.13.3.1** Organize a subregional meeting of experts and policy makers to consider the establishment of a viable mechanism to improve the implementation of national oil spill contingency plans

**Subactivity 1.13.3.2** Follow up on the recommendations of the subregional meeting under Subactivity 1.13.3.1.

**Responsible parties:** Programme manager, technical advisor, consultants, IMO and key government line agencies.

### Output 1.14

### Success Criteria

Personnel from participating countries and those in particular bordering Malacca Strait trained in oil pollution risk assessment and management.

By the end of the programme, at least 40 individuals from all participating countries will have been trained in oil pollution risk assessment and management.

### Activities for Output 1.14

**1.14.1** Assess the training needs related to oil pollution risk assessment and management and develop a training strategy around the Malacca Strait experience, including any training related to OSPAR equipment and relevant international conventions

**Output 2.2****Success Criteria**

**Design of regional marine pollution monitoring programme.** By the end of 24 months, the regional marine pollution monitoring programme will have been designed.

**Activities for Output 2.2**

**2.2.1** Review and assess past and present efforts involving in the monitoring of marine pollution in the region, including: methodologies used; effectiveness and results achieved; the key pollution indicators; and the volume and nature of monitoring data needed to track changes in the coastal and marine environment.

**2.2.2** Determine, through a regional workshop, the appropriate variables, including required sampling locations, frequencies, and statistical replication, building upon past experiences and skills in the region.

**2.2.3** Develop a programme to standardize sampling and analytical methodology and exercises to inter-calibrate the participating laboratories. Select a consultant to prepare a proposal, based on the background information above, and submit the proposal to the workshop under Activity 2.2.2.

Responsible parties: Programme manager/technical advisor, consultants, the network and in consultation, as appropriate with IOC/UNESCO.

**Output 2.3****Success Criteria**

**Effective national institutions providing marine pollution monitoring data to an information coordination unit.** By the end of the programme, each participating country will be contributing to the network.

**Activities for Output 2.3**

**2.3.1** Provide sampling and analytical equipment where most required, with relevant training and supervision to enhance national monitoring activities

**2.3.2** Implement the regional monitoring programme, with field support provided to those countries which currently do not have effective marine pollution monitoring programme or which will not host a demonstration site

Responsible parties: Programme manager/technical advisor, network coordinator, consultants and relevant government institutions.

**Output 2.4****Success Criteria**

**Regional marine pollution information relevant to management needs.** State of the marine environment reports.

**Activities for Output 2.4**

**2.4.1** Establish national and subregional data exchange mechanism through the Network on Marine Pollution and Information Management.

**3.1.3** Conduct an inception workshop to determine national interest in the association, to designate national associates, and to confirm the operational plan of the association.

**Responsible parties:** Programme manager, technical advisor, consultant, coordinator of the association/network and in consultation, as appropriate with the ASEAN group of environmental legal experts, SEAPOL, UN Law of the Sea Office.

**Output 3.2**

Harmonization of marine environmental legislation.

**Success Criteria**

By the end of 30 months, effective marine environmental legislation will have been drafted.

**Activities for Output 3.2**

**3.2.1** Assess the effectiveness of current national marine pollution legislation and regulations, including requirements for environmental impact assessment, dredging and ocean dumping, etc. and determine the constraints to implementation of international conventions (MARPOL 73/78, LC 72, OPRC 1990, Basel Convention 1989, etc.)

**3.2.2** Draft model marine pollution legislation for implementation at the national level

**Responsible parties:** Programme manager, technical advisor, consultant, concerned government legal departments, coordinator of marine environment legal network/association in consultation and or collaboration with IMO.

**Output 3.3**

Harmonization of emission standards and water classification.

**Success Criteria**

By the end of the programme establishment of a regional water-use classification system, taking into account various uses of the marine environment and water quality criteria related thereto. In conjunction with this activity emission standards for effluents discharged from land-based sources into the estuaries and coastal waters in the region shall be established to coincide with receiving water use and associated water quality criteria. These include sampling and analytical procedures and arrangements.

**Activities for Output 3.3**

**3.3.1** Identify current and potential application/uses of coastal areas in the region; characterize and classify economic activities that are dependent on coastal and marine environment.

**3.3.2** Establish minimum requirements for the sustenance and development of the above economic activities (fisheries, coastal tourism and domestic recreation, aquaculture) and public health with special reference to quality and quantity (where applicable) of water, sediments and living marine resource.

**3.3.3** Verify emission standards for existing land-based sources of effluents discharged into estuaries or coastal waters; and determine their potential impact on proposed water use and related environmental quality criteria.

**Table 1**  
**Proposed Country Participation in the GEF Programme**

	Demonstration: Pollution Mitigation - Xiamen	Demonstration: Pollution Prevention - Batangas	Demonstration: Risk Management - Malacca Strait	Information and Data Network	Legal Strengthening	Institutional Strengthening	Support of Public Awareness	Special Projects	Project Steering Committee	Technical Adviser Pool	Research Associates at PDNMO	Program Reports	Training	Workshop
Turkey	.				.	.	.		.	.	.	.	.	.
Uzbekistan		.		.	.	.	.	.	.	.	.	.	.	.
Uzbek	.			.	.	.	.	.	.	.	.	.	.	.
Indonesia			.	.	.	.	.		.	.	.	.	.	.
China, North	.			.	.	.	.	.	.	.	.	.	.	.
Malaysia			.	.	.	.	.		.	.	.	.	.	.
Philippines		.		.	.	.	.		.	.	.	.	.	.
Singapore			.	.	.	.	.		.	.	.	.	.	.
Thailand	.			.	.	.	.		.	.	.	.	.	.
Vietnam		.		.	.	.	.	.	.	.	.	.	.	.

(c) The Programme Manager will consolidate all sectoral progress reports from each project team into six-monthly Project Progress Reports to be submitted to project staff.

(d) At the end of each quarter, or sooner if engaged on a shorter timeframe, all consultants and contractors engaged on the project are to furnish the Programme Manager with a Progress Report on what has been achieved (according to agreed priorities) over the past quarter. Such reports should also look ahead to the upcoming quarter and outline the planned programme of work.

(e) The programme will be subject to tripartite review in Programme Steering Committee meetings (joint review by representatives of the participating governments, the executing agency and UNDP) at least once every 12 months, the first such meeting to be held within the first 12 months of the start of full implementation. The Programme Manager will prepare and submit to each review meeting a Programme Performance Evaluation Report (PPER). Additional PPERs may be requested, if necessary, during the programme.

(f) The programme shall be subject to evaluation 24 months after the start of full implementation and at the end of the project. The organization, terms of reference and exact timing will be decided upon after consultation between the parties to the project document.

(g) A programme terminal report will be prepared by the Programme Manager for consideration at the terminal review meeting. It shall be prepared in draft, sufficiently in advance to allow review and technical clearance at least 3 months prior to the terminal review.

#### I. Legal Context

This programme document shall be the instrument envisaged in the Supplemental Provisions to the Programme Document, attached as Annex 2 hereto. The host country implementing agency shall, for the purpose of the Supplemental Provisions to the Programme Document, refer to the government cooperating agency described in the Supplemental Provisions.

The following types of revisions may be made to this programme document with the signature of the authorized UNDP official only, provided he or she is assured that the other signatories of the project document have no objections to the proposed changes:

(a) revisions in, or addition of, any of the annexes of the programme document with the exception of the Standard Legal Text for non-SBAA countries which may not be altered and the agreement to which is a pre-condition for UNDP assistance;

(b) revisions which do not involve significant changes in the immediate objectives, outputs or activities of a programme, but are caused by the rearrangements of inputs already agreed to or by cost increases due to inflation; and

(c) mandatory annual revisions which update the delivery of agreed programme inputs, or reflect increased expert or other costs due to inflation, or take into account agency expenditure flexibility.

#### J. Budgets

##### Project Budget Covering UNDP Contribution (in US Dollars)

Region:	East Asian Seas
Project No.:	RAS/92/G34
Project Title:	PREVENTION AND MANAGEMENT OF MARINE POLLUTION IN EAST ASIAN SEAS

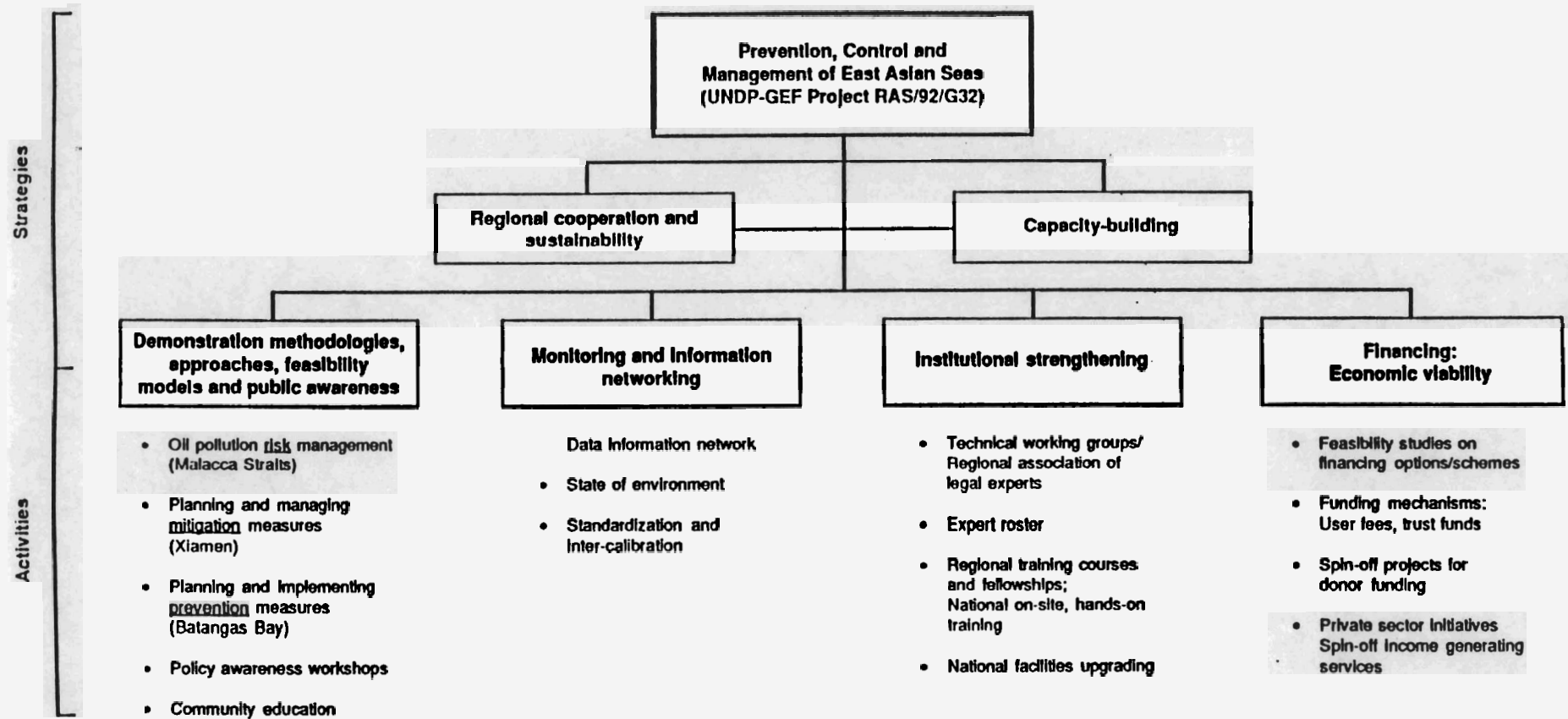
## **ANNEX 1**

**Programme Framework**

**Programme Management**

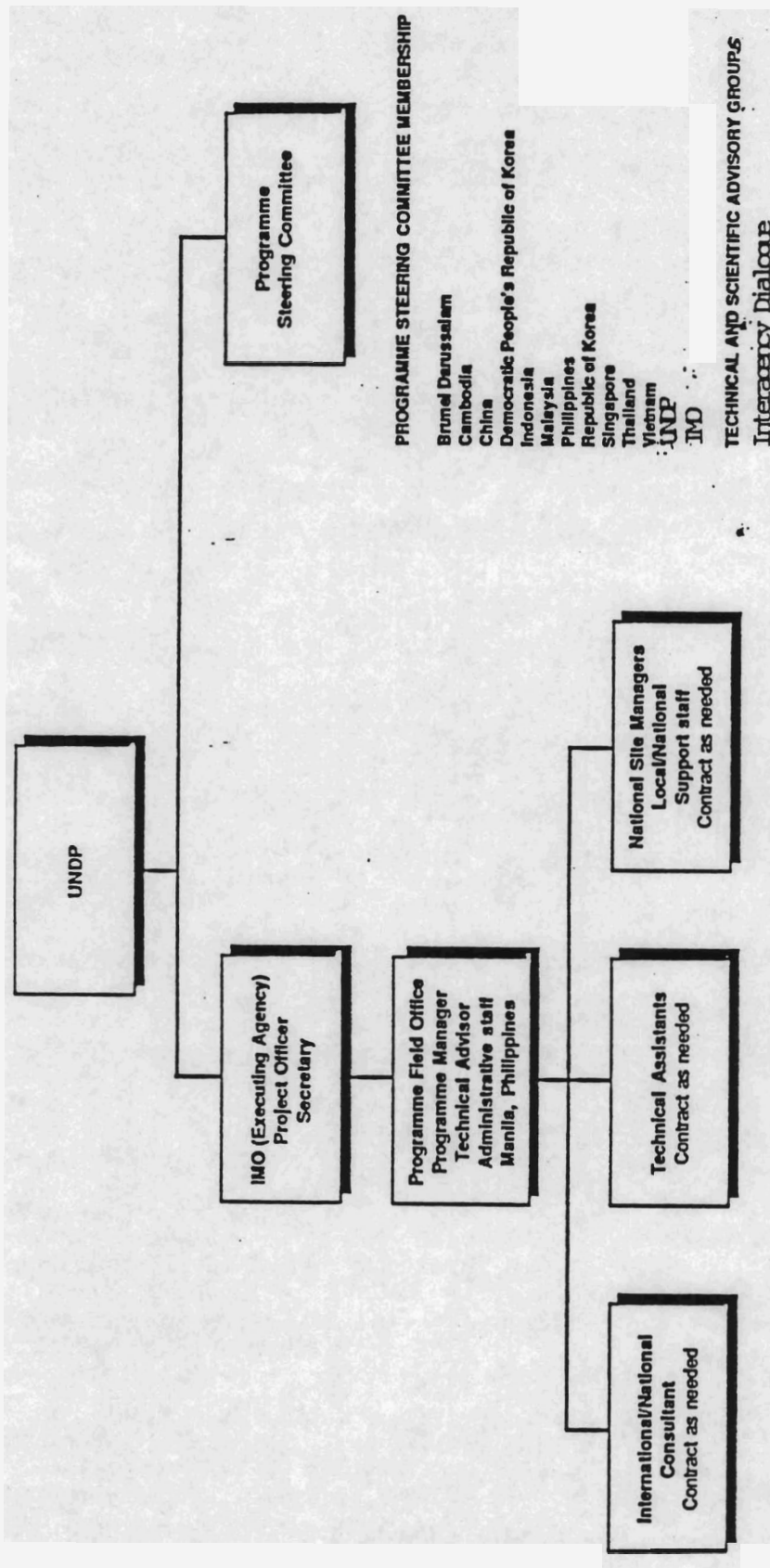
**Organization Chart**

Programme Framework - Strategies and Activities



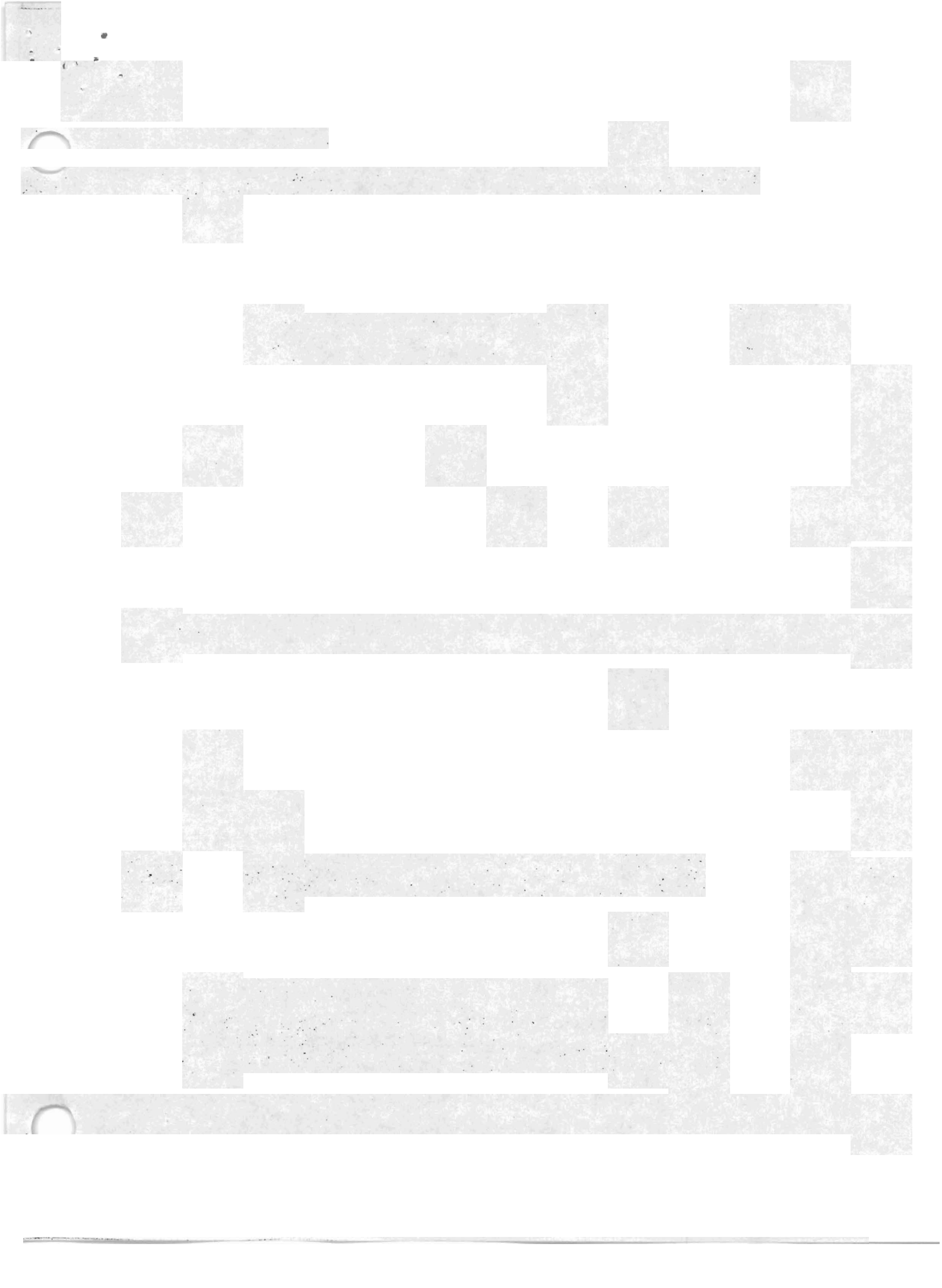
Programme Framework

RAS/92/G34 - Control, Prevention and Management of Marine Pollution in East Asian Seas



Organization Chart




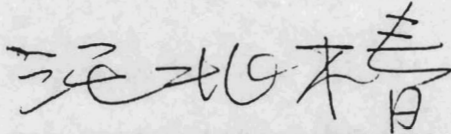


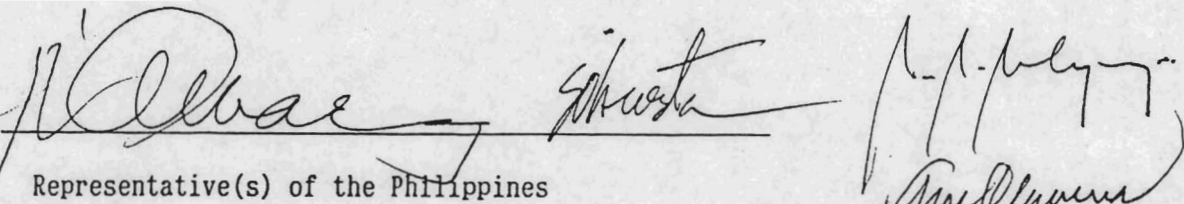
Regional Programme on Prevention and Management  
of Marine Pollution in East Asian Seas

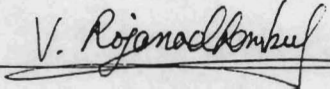
Xiamen, 11-13 November 1993

Witnessed by:

1.   
Representative of Cambodia

2.   
Representative(s) of People's Republic of China

3.   
Representative(s) of the Philippines

4.   
Representative of Thailand

5. \_\_\_\_\_  
Representative of Vietnam

6. 

## **ANNEX 2**

**Schedule of programme reviews, reporting and evaluation**



## ANNEX 3

Indicative matrix of major marine pollution problems and  
foreseen constraints to their solution

ANNEX III

Pollution problems		Constraints to solution													Total (+ plus Y)						
Solid waste	Agriculture waste	Hazardous waste	Oil	Sediments	Industrial waste	Sewage	Technical capability	Economical/Financial	Legal	Institutional	Planning	Management	Enforcement	Information	Manpower	Political will	Public awareness	Monitoring	Aggregate of Y		
++	.	.	+P	+	P	+	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	11	16	
+++	++	+P	++P	++	++	+++	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	10	25	
++	++	+P	++P	++	++	+++	Y	N	Y	Y	Y	Y	N	N	Y	Y	N	N	6	20	
+++	+++	+P	+++	+++	+++	+++	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	9	25	
+	.	P	+P	+	+	+	N	N	N	N	N	N	N	N	N	N	N	N	0	5	
+++	+++	+P	+P	++	++	+++	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	9	24	
NA	NA	NA	P	++	P	++	Y	Y	Y	Y	Y	Y	Y	Y	Y	NA	NA	NA	9+	13+	
+	+	+P	++	++	++	+++	N	N	N	N	Y	Y	N	N	N	N	Y	N	4	15	
+	++	++	NA	+++	++	++	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	12	22+	
+P	+	P	P	++	+P	++	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	12	19	
17	14	7	9	17	15	23	7	7	4	8	9	9	7	7	8	6	4	6			
Aggregate of pluses							7	7	4	8	9	9	7	7	8	6	4	6			
Aggregate of Y																					

KEY:  
 +++ Severe  
 ++ Moderately severe  
 + Less severe  
 . None  
 NA Not available  
 P Potentially severe  
 N No  
 Y Yes

Indicative matrix of major marine pollution problems and foreseen constraints to their solution

## **ANNEX 4**

**Chart on status of ratification of international conventions  
related to the protection of the marine environment**

Chart on status of ratification of international conventions related to the protection of the marine environment

Convention Country	MARPOL Annex				London Convention		Intervention		CLC			Fund			SAL 89	OPRC 90
	73/78	III	IV	V	CONV 72	Amend 78	CONV 69	PROT 73	CONV 68	PROT 76	PROT 84	CONV 71	PROT 76	PROT 84		
Brunei Darussalam	x								x	x		x				
Cambodia																
China	x			x	x		x	x	x	x						
Dem. People's Rep. of Korea	x	x	x	x												
Indonesia	x								x			x				
Malaysia																
Philippines					x											
Republic of Korea	x								x	x		x				
Singapore	x								x	x						
Thailand																
Vietnam	x															

Note: x indicates ratification.



## **ANNEX 5**

**Background on Xiamen, Batangas and Malacca Strait**

## **Annex V: Background on Xiamen, Batangas and Malacca Strait**

### **Background Information - Xiamen**

Xiamen is an excellent site for the application of Integrated Coastal Zone Management and testing marine pollution mitigation and other management measures. Xiamen, at the confluence of the East China and South China Seas, has biogeographical features very similar to those found throughout most of East Asia. It has a subtropical climate and a variety of natural features and ecosystems such as embayments, estuaries, mangroves, inlets, and islands with diverse flora and fauna.

Xiamen has a rapidly growing economy (20% GNP per annum) created by expansion and development of its commercial port, coastal aquaculture and fishing industries, coastal tourism, coastal agriculture, shipping and coastal construction. The municipality of 1.17 million is highly urbanized and the coastline is densely populated.

There are many marine pollution problems, including domestic sewage, industrial and agriculture effluents, solid wastes, oils, sludge and dredged materials. The surrounding waters of Xiamen could be classified into three main types: good marine water quality with high biodiversity; nearshore water relatively contaminated with effluents from land-based and sea-based sources; specific areas where the water quality is seriously deteriorating with declining biological resources. Success of the environmental management effort could be demonstrated with the maintenance of good water quality and improvement in the nearshore and specific deteriorating areas.

There is a strong political commitment to integrate environmental management into the economic development programme. A coastal policy and management structure is already in place in Xiamen with the Vice-Mayor taking direct responsibility for the implementation of environmental programmes in the municipality. The coastal zone is defined as the area between 5 km inland from the shore to the 10 m isobath in the water. The coastal zone falls within the jurisdiction of the local government.

The local government has already undertaken numerous environmental management initiatives to reduce the problems of marine pollution. Databases are in the process of being developed. They include a resource inventory, socioeconomics, and projections of population growth and pollution loads up to the year 2015. The municipality has the benefit of a number of coastal and marine research institutions and qualified scientific staff.

### **Background Information - Batangas Bay**

Batangas is one of three demonstration projects proposed by the Government of the Philippines. The site is still relatively unpolluted, but pollution threats are definitely increasing for the following reasons:

- Increasing population which, in addition to a high local growth rate of over 2.0% per annum, is also driven by the pull of employment opportunities in response to the growth of industries. The proximity of Batangas Bay to Metro Manila and the diving resorts of Anilao further induce migration.
- Industrial growth due to the deliberate policy of exploiting the excellent natural harbour of Batangas Bay for port-oriented industries.
- The expansion of the two existing oil refineries which will attract new energy-intensive industries.

Background Information - Malacca Strait

The Malacca Strait is one of the busiest shipping routes in the region. In 1989, approximately 35,000 vessels were estimated to have used the Strait. The growth rate of this international traffic is predicted at 1.3% per annum. Thirty percent of this traffic comprises oil tanker movements. There are several features which make the Strait significant with regard to marine pollution:

- An estimated four collisions and one to two groundings occur every month with over 60 distress calls received per year.
- There is a large amount of local traffic traversing the Strait. This comprises fishing and coastal vessels, as well as passenger services across the Strait between Malaysia and Indonesia.
- In addition to the risk of accidents leading to oil spills, there is evidence that ships illegally discharge oily residues through tank cleaning and other waste discharges.
- The management of pollution risks is complicated by the fact that four countries border the Strait (Thailand, Malaysia, Indonesia and Singapore).

## **ANNEX 6**

### **Job Descriptions**

## **Annex VI: Job Descriptions**

The Programme Manager (60 months) who will work under the guidance of IMO, the executing agency of the programme will have the following responsibilities:

- a) the development, coordination and implementation of all project activities.
- b) the implementation of regional training and information exchange activities in collaboration with national institutions.
- c) the refinement of the five-year project plans and the development of required workplans and operational guidelines for the approval of the Programme Steering Committee.
- d) the development of project proposals within the framework of the programme for national, bilateral and multilateral support.
- e) the development of viable financial options and subsequent fundraising to ensure the financial sustainability of the project.
- f) the provision of technical advice/assistance to participating agencies in the region.
- g) the development of close working relationships with donors, international agencies, governments, NGOs and the private sector.
- h) the development of close linkages with international and regional bodies in order to minimize duplication of work and to strengthen regional coordination.
- i) serve as Executive Secretary to the Programme Steering Committee and to work towards implementing the Steering Committee's decisions.
- j) establish linkages with international and regional organisations and networks in order to exchange information pertaining to legal, institutional and technical knowledge and experience in the management of marine pollution. This activity should include coordination with other GEF initiatives such as the inter-regional International Oceans Institute training project.

**Programme Manager:** This person will require the appropriate balance of management and technical skills, as well as vision, leadership, knowledge of the region, and experience with multi-sectoral regional projects. This person should possess the following:

- managerial and relevant technical qualifications;
- good interpersonal skills, leadership qualities and experience in managing a regional project of such complexity and magnitude;
- familiarity with United Nations agencies and good contacts with donor agencies;
- in-depth knowledge of East Asia and sensitivity to the culture and traditions of the diversified ethnic groups in the region.

**ANNEX 7**

**Legal Context**

## **Annex VII: Legal Context**

1. The following provisions shall govern the relations between the UNDP, the Executing Agency and the Government which chooses to participate with respect to the programme.

### **A. General provisions**

2. For the purposes hereof, the term "Programme" means the programme defined in this Programme Document and the term "Government" means the government of the State which shall have adhered to this Programme Document in writing in the form set forth in the Appendix to this Annex 1.

3. The programme will be financed as described in the Programme Document and as said Document may be modified from time to time.

4. The Government, the UNDP and the Executing Agency shall cooperate in the execution of the Programme with a view to the realization of the objectives described in Part II of this Programme Document.

5. The UNDP undertakes to provide through the Executing Agency the expert services, training, equipment and other services and facilities required for the Programme, within the funds available to the Programme.

6. The Executing Agency shall carry out its obligations in consultation with the Government, the UNDP and the donors in accordance with the provisions of the Programme Document.

### **B. Participation of the Government**

7. The Government shall facilitate clearance through its customs of any equipment, material and supplies required for the purposes of the Programme, and of personal effects of the non-national personnel assigned to the Programme.

8. In the event that the carrying out of the Programme shall require, at the sole discretion of the Executing Agency, the import of any equipment into the territory of the Government, the Government shall exempt or defray any customs duties and other charges related to the clearance of project equipment, its transportation, handling, storage and related expenses within the country. It shall also be responsible for safe custody of the equipment, its installation, maintenance and insurance.

9. The Government shall make arrangements for all non-national personnel assigned to the Programme and their families promptly to be provided with any necessary entry and exit visas, residence permits, exchange permits and travel documents required for their stay in the territory of the Government in connection with the Programme.

10. Subject to any security provision in force at the date of the Programme Document, the Government shall:

- (a) make available to the Executing Agency for the purposes of the Programme all published and unpublished reports, maps, records and other information and data which are necessary for the implementation of the Programme; and
- (b) enable authorized representatives of the UNDP, the Executing Agency and the staff and consultants retained by the Executing Agency to carry out the Programme to visit any part of its territory for the purposes of the Programme and to examine any records and documents relevant thereto.

- (iv) the terms "Special Fund" and "Plan of Operation" wherever they appear in the Basic Agreement shall be deemed to read "UNDP" and "Programme Document", respectively.

#### E. Privileges and Immunities

17. The Government shall indemnify the Executing Agency and members of its staff for any liability arising out of acts or omissions of such staff members in connection with the Programme Document or the execution of the Programme, except where resulting from willful misconduct or gross negligence. Such indemnification shall include, without limitation, attorney's fee, court costs and other expenses incurred by the Executing Agency or members of its staff in connection with the defense against, or settlement of, claims on account of such liability.

18. The Government shall exempt all contractors and consultants retained by the Executing Agency and the personnel (other than residents of the territory of the Government) or such contractors and consultants from or bear the costs of, any taxes, duties, fees or other levies imposed under laws and regulations in effect in its territories or by any political subdivision or agency therein on such consultants and personnel in respect of:

- (a) any payment made to such contractors, consultants or personnel in connection with the execution of the Project;
- (b) any equipment, materials and supplies brought into the territory of the Government for the purpose of carrying out the Project and subsequently withdrawn therefrom; and
- (c) any personal and household effects brought into the territory of the Government by such contractors, consultants and personnel and subsequently withdrawn therefrom upon departure of the said consultants, contractors and personnel.

19. The Executing Agency shall provide the Government through the Resident Representative from time to time with the list of personnel to whom the privileges and immunities enumerated above shall apply.

20. This Programme Document shall be free from any taxes imposed under the laws of the Government or laws in effect in its territory or in connection with the execution, delivery or registration thereof.

#### F. Consultation

21. The Government, the UNDP and the Executing Agency shall exchange views on the Programme, including its progress and the benefits derived therefrom, and shall furnish to each other such information thereon as they shall reasonably request each other in respect thereof, as provided in this Programme Document.

#### 22. Reports

The Executing Agency shall furnish to the UNDP periodical reports on the carrying out of the Programme at such times and in such form as may be agreed between the UNDP and the Executing Agency.



## **ANNEX 8**

### **Programme Budget**

**Annex VIII. Program Budget**

	1	2	3	4	5	Total
<b>10. Project Personnel</b>						
<b>11. International Expert</b>						
11.01 Project Manager	130,000	143,000	157,300	173,030	190,333	793,663
11.02 Technical Advisor	110,000	121,000	133,100	146,410	161,051	671,561
11.49 Subtotal Experts	240,000	264,000	290,400	319,440	351,384	1,465,224
11.50 Consultants						
11.51 International Consultants	81,200	220,250	76,750			378,200
11.98 Subtotal Consultants	81,200	220,250	76,750			378,200
11.99 Experts and Consultants	321,200	484,250	367,150	319,440	351,384	1,843,424
<b>13. Administrative Support</b>						
13.02 Support Staff	33,000	36,300	39,930	43,923	48,315	201,468
13.03 Program start up and operation	84,600	45,600	45,600	45,600	45,600	267,000
13.99 Subtotal Administrative Support	117,600	81,900	85,530	89,523	93,915	468,468
<b>15. Duty Travel</b>						
15.01 Duty Travel	100,000	100,000	100,000	100,000	100,000	500,000
15.99 Subtotal Duty travel	100,000	100,000	100,000	100,000	100,000	500,000
<b>16. Mission Cost</b>						
16.99 Subtotal Mission Cost	20,000	20,000	20,000	20,000	20,000	100,000
<b>17. MPPP</b>						
17.01 Technical Assistants	29,000	24,000	53,200	20,600	12,780	139,580
17.02 National Professional	118,900	127,850	51,100	12,000	12,000	321,850
17.99 Subtotal MPPP	147,900	151,850	104,300	32,600	24,780	461,430
<b>19. Personnel Component Total</b>	662,700	794,000	632,980	517,563	545,299	3,152,542
<b>20. Subcontracts</b>						
21.00 Subcontract	167,050	478,600	335,700	185,550	39,750	1,206,650
29. Subtotal Subcontract	167,050	478,600	335,700	185,550	39,750	1,206,650

## **ANNEX 9**

### **Work Plan and Output Budget**

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## Annex IX: Work Plan and Output Budget

The detailed work plan for the programme activities will be endorsed by the Programme Steering Committee at its first meeting, 90 days after the appointment of the Programme Manager. After his appointment, the Programme Manager will undertake a brief introductory mission to all the participating countries including the three proposed demonstration project sites to acquaint himself with the relevant national focal points and discuss start-up activities relating to the Programme. At the end of his mission, the Programme Manager will prepare a draft one-year plan detailing activities under the four immediate programme objectives consistent with the output budget and also identify the proposed implementing agencies. In parallel, he will also prepare a consolidated five-year overall work-plan.

These documents will then be submitted to the Programme Steering Committee for endorsement and subsequent implementation.

The table given below provides a fairly rough estimate of Budgetary break-downs according to the four immediate objectives of the programme.

**RAS/92/G34/B/1G/19 - "Prevention, Management and Control of Marine  
Pollution in East Asian Seas"**  
**Budget by Objectives Using External Funding**

(amount in US\$ million)

Objectives	Total	1994	1995	1996	1997	1998
Strengthen marine pollution capability through demonstration of integrated coastal zone management and pollution risk management.	4.21	.51	.4	1.4	1.4	.50
Develop a regional marine pollution monitoring and information management network.	1.15	0.15	.35	.2	.2	.25
Strengthen capability to implement and enforce international marine pollution conventions and codes.	.700	.300	.350	.05	---	---
Initiate sustainable financing options for marine pollution management.	.500	---	.10	.20	0.15	.05
Monitoring and Evaluation	.175	---	.035	.035	0.35	.070
<b>TOTAL</b>	<b>6.735</b>	<b>0.96</b>	<b>1.235</b>	<b>1.885</b>	<b>1.785</b>	<b>0.87</b>

**Note:** The annual budgetary allocations in the above table differ slightly from the figures indicated in the programme budget. This is so because the work plan at this stage is tentative, and has to be revised/approved by the Programme Steering Committee at its first meeting. The tentative work plan for the first year is also given overleaf.

## Programme Activities: (TENTATIVE)

Objectives	Activities	1994	1994	1994	1994	Remarks
		1 2 3	4 5 6	7 8 9	10 11 12	
Strengthen marine pollution management capability through demonstration of integrated coastal zone management and pollution risk management.	<u>XIAMEN</u>					
	1.1.1 establish a multidisciplinary task force.	—				
	1.1.2 appoint ICZM national site manager.	—				
	1.1.4 establish a coastal research co-ordination unit.			—		
	<u>BATANGAS</u>					
	1.5.1 establish a multidisciplinary task force.		—			
	1.5.2 appoint ICZM national site manager.		—			
	1.5.5 establish a coastal zone management council.			—		
	<u>MALACCA STRAITS</u>					
	1.9.1 appoint a consultant.		—			
1.9.2 feasibility study on sub-regional co-operation mechanism.			—			
1.10.3 produce a GIS map.				—		
Develop a regional marine pollution monitoring and information management network.	2.1.1 appoint a consultant.		—			
	2.1.2 identify relevant institutions.			—		
	2.1.3 conduct an inception workshop.				—	
Strengthen capability to implement and enforce international marine pollution conventions and codes.	3.1.1 appoint a marine environmental law consultant.			—		
	3.1.2 identify relevant individuals in the region.				—	
	3.1.3 conduct an inception workshop.				—	
Initiate sustainable financing options for marine pollution management.	No Activity	For the	first	year		

## **ANNEX 10**

### **Overview of International Conventions**

## **ANNEX X: Overview of International Conventions**

The various marine pollution, liability and compensation conventions are detailed below:

### **Marine pollution**

- (i) International Convention for the Prevention of Pollution of the Sea by Oil (OILPOL), 1954
- (ii) Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (LC), 1972;
- (iii) International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78);
- (iv) International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties (INTERVENTION), 1969;
- (v) International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990 (OPRC)

### **Liability and compensation**

- (i) International Convention on Civil Liability for Oil Pollution Damage (CLC), 1969;
- (ii) International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (FUND), 1971;
- (iii) Convention relating to Civil Liability in the Field of Maritime Carriage of Nuclear Materials (NUCLEAR), 1971;
- (iv) Athens Convention relating to the Carriage of Passengers and their Luggage by Sea (PAL), 1974; and
- (v) Convention on Limitation of Liability of Maritime Claims (LLMC), 1976.



## **ANNEX 11**

**Co-ordination with on-going international and bilateral  
programmes/projects related to the prevention and  
management of marine pollution in the  
East Asian Seas Region**

## **Annex XI**

### **Coordination with on-going international and bilateral programmes/projects related to the prevention and management of marine pollution in the East Asian Seas Region**

A number of bilateral and multilateral programme/project activities are underway or are being planned with relation to the environmental management in the coastal and marine areas. The programme will establish close linkages and develop collaborative working relationship with these projects/programmes to avoid duplication of efforts and to optimize financial and technical human resources. The main ones are listed below. The GEF Marine Pollution Programme will continue to establish linkages and collaboration with other new regional or national initiatives related to marine pollution during the time frame of the programme implementation.

#### **1. ASEAN**

ASEAN has developed bilateral programmes with its dialogue partners particularly, Australia, Canada, Japan and United States of America. Some of these programmes have direct relevance to the management of marine pollution in the East Asian Seas Region. The main ones include the ASEAN/US Coastal Resource Management Project, ASEAN/AUSTRALIAN and Tidal Phenomenon Project and the Living Resources Management Project and the ASEAN/CANADA Marine Pollution Project. The USAID-aided Coastal Resource Management project and that of the AIDAB-aided Tides and Tidal Phenomenon Project were completed.

##### **i) ASEAN/AUSTRALIAN Living Resources Management Project.**

Australia and the Asean members have collaborated in the study of the living resources in the Asean region for the past 10 years (Phase 1 and 2). Substantial information has been collected pertaining to the status of the living resources. The project has also developed useful techniques for living resource assessments. The third phase of the project is to focus on the application of the data for developing management strategies for the protection and sustainable use of the coastal resources.

Discussion has been initiated to establish some collaborative activities between the two programmes particularly with respect to the establishment of demonstration sites, training in integrated coastal zone management and joint publication of the state of the marine environment.

##### **ii) ASEAN/CANADA Marine Pollution Project**

The second phase of the ASEAN/CANADA project focuses on the assessment of the marine pollution by heavy metals and bacterial contamination and red tides. Area for collaboration will be in Environmental Impact Assessment, standardization and calibration, pollution monitoring and information exchange, state of the marine environment.

##### **iii) ASEAN/US Promotion Environmental Management Technology**

The purpose of this project is to promote US technologies on environmental management through seminars, technology transfer, EIA, etc. The project has a number of areas which are relevant to marine pollution.

Initial meeting with USAID officials had been made to identify areas for future collaboration. The programme will further interact with USAID to develop specific areas for collaboration.

Discussion has been underway with respect to some collaborative activities involving members of the network to undertake some of the programme activities related to socioeconomic analysis.

ii) Coastal resources assessment projects

ICLARM has two projects involving the assessment of living resources in San Miguel Bay and Lagonoy Bay in the Philippines.

ICLARM implemented the ASEAN/US Coastal Resources Management Project which was completed in 1992 and the Geographical Information System for Coastal Area Management project funded by IDRC which will be completed by January, 1994. The programme will collaborate with ICLARM through exchange of information and experiences.

ICLARM has recently joined the Consultative Group on International Agriculture Research (CGIAR) with a clear mandate to undertake international research in fisheries. With the change of focus and direction, ICLARM's collaboration with the Programme will be in the area of information exchange on research findings and application.

The Director-General of ICLARM has indicated interest to establish some form of linkages with the programme. Details will be worked out.

5. FAO

i) Integrated Coastal Fisheries Management Project

The Integrated Coastal Fisheries Management Project was launched in 1993 with the purpose of developing methodologies and typologies for the management of fisheries resources within the framework of integrated coastal zone management (ICZM). A site in the Lingayen Gulf has been chosen for the above studies. Area for collaboration will be exchange of information and experience on the demonstration sites particularly Xiamen and Batangas.

ii) Hazardous waste management

The programme will also collaborate with FAO in the assessment of Hazardous wastes on marine living resources at the above two demonstration sites.

6. IOC/WESPEC/UNESCO

Through the Subcommittee for the Western Pacific Region (WESTPAC), IOC has been active in the East Asian Seas Region undertaking projects related to marine pollution research and monitoring. Of particular interest to this program is IOC program on mussel watch, assessment of river inputs and atmospheric pollution in the Gulf of Thailand, Gulf of Tongkin and the Malacca Straits.

UNESCO on the other hand has also been active in capacity building especially related to ecology, pollution and data-processing. For example, UNESCO had recently upgraded the capability of Indonesian institutions to undertake mussel watch program through training and laboratory upgrading.

ii) SAREC Bilateral Programme on Marine Science in Vietnam

SAREC is in the process of implementing a bilateral marine science programme in Vietnam. The Programme is aimed at strengthening national institutions for undertaking research and management of marine pollution. The two institutions selected are: Haiphong Institute of Oceanology and the Natrang Institute of Oceanography.

This Programme has established working relationship with SAREC to undertake the following activities: a) diagnostic review on marine pollution and institutional and organization arrangements in research and management; b) research program development, research policy and financial commitments; c) human resource and research infrastructure development; d) research implementation; and e) establishment of demonstration sites.

10. SIDA/ADB Coastal and marine environmental management in the South China Sea Project

The Swedish International Development Agency (SIDA) has provided a thrust fund to the Asian Development Bank to develop a regional programme on coastal and marine environmental management in the South China Sea.

The proposed activities include: a) consultative meeting on coastal and marine environmental management in the South China Sea region; b) developing a coastal and marine environmental management information system; c) project planning. Six study areas have been identified. They include Hainan Island and Guangxi of China, Ha Long Bay, Saigon Estuary and Vung Tao of Vietnam and the coastal zone of Cambodia.

The SIDA/ADB efforts will provide more information on the coastal zone in the South China Sea region and therefore will contribute to better understanding of the management issues of the East Asian Seas Region. The programme will seek collaboration through exchange of experience and workshop arrangement.

11. ADB

In addition to the above project funded through SIDA assistance, ADB has in the past supported a number of regional efforts in waste management, remote sensing and coastal zone management. The most recent project is the Fisheries Sector Programme for the Philippines which employed integrated coastal zone management approach. The environmental management aspects are being coordinated through the Department of Environment and Natural Resources (DENR). DENR is the host of the Program Development and Management Office (PDMO)

This Programme will establish close linkage with ADB particularly with respect to the lessons learned from the implementation of the Fisheries Sector Project and other environmental management experience in the East Asian Seas Region. Collaboration in terms of joint conferences on lessons learned from integrated coastal zone management will be explored.

i) Global Waste Survey Project ,

IMO is currently undertaking a Global Waste Survey covering waste management practices, technologies and processes, inventory and database development and case studies.

One of the chosen sites for case study is the Batangas Bay. The programme therefore cooperates with the above project in ensuring the inputs of this project are being utilized for developing management strategies.

17. SEAPOL

The Southeast Asian Programme in Ocean Law, Policy and Management (SEAPOL) based at the Sukhothai Thammathirat Open University undertake policy research in ocean law and management of the marine resources and the environment. SEAPOL organised several workshops on policy and management issues facing the marine resources in the Southeast Asian Region . Areas of collaboration include joint workshops on specific topics related to policy interventions in the management of marine pollution.

18. Asian Fisheries Society

The Asian Fisheries Society has more than 2500 professional members with various specialisations in almost every discipline of fisheries science. It promotes sustainable development of fisheries and aquaculture. It undertakes research and promote environmental management of the aquatic environment. Area for collaboration include fisheries resource assessment and aquaculture planning.

19. EARL

This is an industry oil pollution response group based in Singapore. EARL is made up of five major oil companies, viz: Shell, Mobil, Caltex, BP and Esso. EARL provides storage, maintenance and deployment of oil pollution control equipment and is activated by calls from members or government to help respond to spills usually larger than 500 t. EARL has a training center in Jurong and a satellite facility in Port Dickson.

The Programme will definitely collaborate with EARL on oil spill response in the Malacca Straits and work closely with them for possible training activities.