



**UNDP/GEF PROJECT ENTITLED “REDUCING ENVIRONMENTAL STRESS IN THE
YELLOW SEA LARGE MARINE ECOSYSTEM”**

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**Third Meeting of the Regional Working Group
for the Pollution Component**
Dandong, China, 4 - 7 September 2006

**Proposed Regional Targets for Management of
Marine Pollution in the Yellow Sea**

1. According to the overall workplan, the Project has reached the beginning of its second major phase, that is, to develop the Strategic Action Programme (SAP). The “TDA/SAP Training Module” developed by UN’s TRAINSEACOAST network gives the definition of SAP as:

“a negotiated policy document which should identify policy, legal and institutional reforms and investments needed to address the priority transboundary problems. Endorsed at the highest level, it establishes clear priorities for action to resolve the priority problems which were identified in the TDA. The preparation of a SAP is a cooperative process among the countries of the region.”
2. Given the definition, the Project should now focus its activities over the next two years on those that will be relevant to the development of the SAP, including the regional and national SAPs, i.e. activities that will eventually lead to formation of management actions, some of which will be included in the pilot implementation during Project Year 5, for their feasibilities, efficiency and effectiveness in addressing Yellow Sea’s marine environmental problems.
3. A three-step approach is proposed: a) management issues, b) regional targets of the management activities, c) management actions, where activities need to be recommended for each step. While it is suggested that these three steps are taken to develop the pollution section of the SAP, all steps should be considered simultaneously:
 - a) consider the technical and management issues affecting transboundary pollution problems in the Yellow Sea;
 - b) recommend realistic and achievable regional targets for pollution management; and
 - c) suggest sustainable actions for execution by political, technical, institutional, and legal bodies.

TECHNICAL AND MANAGEMENT ISSUES

4. The earlier exercises on the preliminary Causal Chain and Governance Analysis, and the activities on national data and information collection activity, and the regional synthesis have somewhat addressed Part “a.” The draft Transboundary Diagnostic Analysis (TDA) will provide further insight into the region’s pollution management issues.

TARGETS

5. Based on the outcomes of the governance analyses, and before recommending management actions, one must be clear about the management targets that the project wishes to achieve. Currently, there are no legal binding regional agreements on pollutant discharge or acceptable levels of pollutant in the Yellow Sea, nor does the Project wish to develop any. Instead, the Project aims to develop regional agreements or strategies for pollutant “targets,” in order to enable effective management actions.
6. One suggestion is to develop a set of water quality criteria for different water body uses. In China, water bodies and coastal areas are categorised from Case 1 to Case 4 Waters depending on the water quality and use of water body. In Southeast Asia, ASEAN has developed a “Water Quality Criteria” that lists the standards for water quality. The ASEAN Water Quality Criteria for Tourism and Aquaculture is attached as [Annex 1](#). A similar set of criteria may be developed for the Yellow Sea by combining this and other existing systems.
7. Issues that should be considered and agreed on during the meeting include:
 - What kinds of targets are relevant, reasonable, and achievable in the region?
 - What activities are needed to realise the development of such targets?

Some relevant activities already listed in the Project Implementation Plan include:

- “Expert Workshop on Fate and Transport of Pollutants”
- “Regional Synthesis for Contaminant Fate and Transport”
- “ICM Actions for Controlling Discharge of Contaminants and Nutrients”
- Pollution regulation and laws implementation

Members should provide guidance on how the approved activities should be implemented, or the results used, in such a way that they complement the development of regional targets.

Members should also elaborate additional activities related to the development of regional pollutant targets.

ACTIONS

8. After the types of targets and their associated actions have been discussed and agreed, one needs to devise actions to achieve the targets. These actions may be technical, managerial, political, legal, or a combination of some or all of them. Costs and benefits analysis of each action also need to be contemplated.
9. To address pollution problems in the Yellow Sea, one should consider sources, sinks, pathways and impacts of the pollutants. Thus, an example of an action

may target reducing pollution discharge, while another action may focus on minimizing the impacts of pollutants after they reach the sea.

10. UNEP-GPA (Global Programme of Actions) has prepared a handbook on actions to minimize land-based sources of pollution in order to protect the marine environment. This handbook may have useful information for the SAP, and should be referred to when the Project creates action-oriented activities. The PMO has provided one copy of the handbook to each country, for reference. One activity already being implemented is the “development of regional guidelines for pollution monitoring” which will be presented at the Meeting. The action (regional monitoring of pollutants) will be listed in the SAP as an activity that needs to be done in the region, while the contents of the guidelines will contain the description of how to carry out the action.
11. In the Project Implementation Plan, “regional investment strategies,” “regional pollution control strategies,” and “contaminant remediation/prevention” are listed as activities to be implemented from 2007 onwards. These activities are geared toward actions for the SAP, however, there are no clear instructions on the nature of the activities, or how they should be implemented.
12. Members should expand on these activities by giving concrete ideas on what actions should be included for implementation.

EXPECTED RESULTS FROM THE MEETING

13. In summary, during the consideration of this Agenda, members should discuss and recommend activities to be implemented in order to produce the SAP. Some suggestions for “Target” activities are:
 - Report recommending regional pollutant targets
 - Report on “Regional Synthesis of Contaminant Fate and Transport”
 - Regional expert’s consultation workshop on developing regional pollutant targets
 - Report reviewing “hotspots” discharge of contaminants and nutrients, and “hotspots” of the sinks
 - Review on effectiveness of pollution laws implementation and enforcement¹
14. Some suggestions for “Actions” activities are:
 - Based on the targets, report of ideas recommending types of “investments” needed for the region. “Investments” may include financial, technical, resources items.
 - Based on the targets, report of ideas recommending regional pollution control strategies and/or remediation/prevention
 - Pilot projects to test “investments” and strategies

Members should note that some of the above activities can be combined, and reports should include actions to test the ideas through pilot projects.

¹ This activity was advertised for bidding in 2005, and a consultant was identified. However, RWG-Investment felt that this work should be included in Governance Analysis. If RWG-P feels that this activity should still be implemented, Consultant will be approached again. Consultant’s task would be to cross-check the legal section of Governance Analysis, but on a regional, rather than national, level.

Annex I

ASEAN Working Group on Coastal and Marine Environment: Scope of Work and Activities

ASEAN countries have initiated cooperative action to maintain, develop and manage regional marine resources since the 1970s. The Meeting of ASEAN Environmental Experts under the ASEAN Committee on Science and Technology was held for the first time in 1978. Then, in 1989, such meeting was officially entitled as the Meeting of ASEAN Senior Officials on the Environment (ASOEN) and six working groups were appointed to work on different areas of marine environment. The ASEAN Working on Coastal and Marine Environment (AWGCME) is one of those six. The purpose of the Working Group is to enhance the co-operation among ASEAN countries in addressing coastal and marine environment issues.

In the Ninth ASOEN meeting held in Singapore during 23-25 September 1998, the Meeting agreed on restructure the ASEAN Working Groups under ASOEN to 1 Task Force and 3 Working Groups. The Pollution Control Department, Ministry of Science, Technology and Environment of Thailand was assigned as the Chairman of AWGCME during 1999-2001.

In November 1998, the ASEAN Minister Meeting on Environment held in Viet Nam directed ASOEN to formulate the Strategic Plan of Action of Environment (SPAEE) based on Hanoi Plan of Action (HPA) for the ASEAN 2020. The relevant environmental components in HPA that are related to AWGCME are listed below:

- Develop a framework and improve regional co-ordination for the integrated protection and management of coastal zones by the year 2001;
- Develop a Regional Action Plan for the Protection of the Marine Environment from Land and Sea-based Activities by the year 2004.

AWGCME deliberated and agreed to initiate activities as part of SPAEE in the First Meeting of AWGCME held in Bangkok, Thailand in 1999. In pursuit of rational and sustainable management of ASEAN Seas and Marine Environment, scope of work of AWGCME was defined in this Meeting. AWGCME will endeavour to promote activities and policies, relevant to the prevention and control of marine pollution in the regional seas by:

- Establishing on ASEAN common stand on specific issues on marine pollution particularly in relation to international convention and protocols;
- Identify areas of short and long-term concern relevant to marine pollution and formulating strategies that would enhance the capability of ASEAN to mitigate them;
- Identifying, encouraging and promoting projects pertaining to the management of pollution in ASEAN seas and marine environment;
- Harmonising pollution control legislation and standards with respect to marine pollution.

To achieve this, the Working Group has the following Terms of References:

1. Formulate detailed regional action plans for the sustainable development and management of coastal and marine resources including eco-development in coastal and marine environment.
2. Development a framework and improve co-ordination, co-operation and information exchange with ASEAN regional bodies and international organisations for the integrated protection, conservation and management of coastal zones and marine environment.
3. Development a regional action plan for the protection of the coastal and marine environment from land and sea-based activities.

4. Formulate activities to promote public awareness and encourage public participation towards protecting and conserving the coastal and marine environment and resources.
5. Develop ASEAN common approaches to deal with the emerging issues relating to the protection of coastal and marine environment. The Second Meeting of AWGCME was held in Hanoi, Viet Nam and the Third Meeting was previously held in Banda Seri Begawan, Brunei Darussalam in July, 2001. The activities under SPAE undertaken by AWGCME are:
 - Identify and establish focal points of the seven subject Areas:
 - Coral reef, seagrass, mangrove;
 - Tanker sludge and ballast water;
 - Solid, liquid and hazardous waste management;
 - Clean technology;
 - Coastal erosion;
 - Eco-tourism; and
 - marine protected areas.
 - Identify and support ASEAN's participation in workshop/ seminars/ meeting
 - Exchange information using standard format on coral monitoring
 - Harmonize criteria for identifying coastal and marine pollution "Hot spots"
 - Develop internet-based information sharing system by member countries
 - Develop criteria aimed at designating areas to protect critical marine habitats and resources in member countries
 - Adopt marine water quality standards for ASEAN
 - Develop Guidelines for management and conservation plans for marine resources, including community-based coastal surveillance
 - Develop a framework for national action plan to protect the marine environment from the discharge of sewage, industrial waste, hydrocarbons and tanker desludging activities
 - Develop a regional mechanism to enhance surveillance and follow-up action against illegal discharge including tanker desludging activities at sea

To accelerate the establishment of regional criteria for marine protected areas and marine water quality and to synergise, Thailand proposed the Concept Paper on Regional Co-ordination for Integrated Protection and Management of Coastal and Marine Environment, in the Third Meeting. The Meeting agreed on the submission of the full proposal to funding agencies and to have Thailand as a project coordinator. The first phase of the initiative composed of preparation of working document and organisation of the first workshop was funded by UNEP. The ASEAN/UNEP Workshop on Coastal and Marine Environment in Southeast Asia: Status and Opportunities for Regional Cooperation was successfully and fruitfully organised in Bangkok, Thailand in March 2002.

At the Workshop, the ASEAN activities and action plans related to coastal and marine environment were addressed as a base to search for modalities for achieving synergies among existing and future action plan and that to achieve adoption and implementation of regional criteria and guidelines for marine protected areas and marine water quality. The outcomes of the Workshop featured below shall be submitted to AWGCME at the next meeting for endorsement before recommending them to ASOEN.

Development of criteria for the ASEAN marine protected areas (MPAs)

The experts attending the Workshop agreed to develop 2 different sets of criteria: Regional Criteria for National MPAs and Criteria for ASEAN Marine Heritage Areas.

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Regional Criteria for National MPAs

According to the review of existing international criteria for MPA, the IUCN Criteria for protected areas were considered to be the most compatible and applicable to those existing national criteria of ASEAN countries. The IUCN criteria were classified into social, economic, ecological, pragmatic and regional. These were further classified into sub-criteria, which were the bases for the discussion. In developing regional criteria for national MPAs, the IUCN Criteria were adjusted to suit the existing criteria of member countries obtained by deleting and integrating IUCN sub-criteria. The draft criteria are in ANNEX 1a. The Meeting also identified action to do if the draft is adopted (ANNEX 1b).

• Criteria for ASEAN Marine Heritage Areas

The discussion was based on the criteria proposed by the ASEAN Working Group on Nature Conservation and Biodiversity for ASEAN Heritage Park. The working group evaluated such proposed criteria and considered that they are applicable for proposing as the criteria for ASEAN Marine Heritage Areas. The group however recommended the addition of a criterion on transboundary since it is one of the concerns of ASEAN countries. See ANNEX 2a for draft Criteria for ASEAN Marine Protected Areas. The Meeting also identified action to do if the draft is adopted (ANNEX 2b).

A. Proposed ASEAN marine water quality criteria

For Aquatic Life Protection

Parameter	Criteria values	Note
Ammonia (NH ₃ -N)	70 mg/L	
Cadmium	10 mg/L	
Chromium (VI)	50 mg/L	Criteria value proposed by CPMS-II ¹ is 48 mg/L. The Meeting recommended to adopt 50 mg/, following the existing national standards of member countries.
Copper Temperature	8mg/L Increase not more than 20C above the maximum ambient temperature	As the proposed value 2.9 mg/L is too stringent, the Meeting agreed to use round-up value of 7.7 mg/L, the product of the lowest LOEC from a chronic study 77 mg/L for reproduction for <i>Mysidopsis bahia</i> and a safety factor of 0.1.
Cyanide	7mg/L	
Dissolved oxygen	4mg/L	
Lead	8.5 mg/L	
Mercury	0.16 mg/L	
Nitrate (NO ₃ -N)	60 mg/L	A single criteria value should be derived for nitrate and nitrite combined in future.
Nitrite (NO ₂ -N)	55 mg/L	
Oil and grease	0.14 mg/L	Other related parameter, e.g. PAH, should be proposed in the future.
Total phenol	0.12 mg/L	
Phosphate (PO ₄ 3--P) (Dissolved reactive phosphorous)	15 mg/L (Coastal) 45 mg/L (Estuarine)	
Tributyltin	10 ng/L	
Total suspended solids	Permissible 10% maximum increase over seasonal average concentration	

¹ ASEAN-Canada Cooperative Program On Marine Science 1992-1998.

For human health protection

Parameter	Criteria values	Note
Bacteria	100 fecal coliform/100mL 35 enterococci/100mL	Coastal water quality for recreational activities

B. List of CPMS-II proposed Water Quality Criteria requiring further review

Parameter	Criteria values	Note
Arsenic	120 mg/L	Need further review of existing concentration in the environment and criteria derivation
Zinc	50 mg/L	Need further review in view of large variation between existing national standards of member countries and proposed value.
		Additionally, the existing concentrations in the environment are higher than the proposed value. Do not have adequate toxicity data.

C. Proposed actions for implementation of ASEAN Marine Water Quality Criteria**• Chemical and biological monitoring**

Priority should be given to establishing a systematic chemical and biological monitoring program in all ASEAN member countries. Due to the lack of data of some parameters in the region, the monitoring program should be encouraged to fill up the data gaps and update the existing data. Biological indices could be additional measurements to monitor the effect of some parameters on living aquatic organisms as they provide direct and clear pollution status.

• Capacity building

There is a great need for training on marine pollution monitoring and analytical techniques in many countries. Some parameters, such as tributyltin (TBT), exist in the environment at very low concentrations and require a high degree of skill for accurate analysis. Moreover, the necessary equipment and materials are lacking in many member countries. In order to apply common standards over the region, capacity building in terms of technique, knowledge and human resources, as well as inter-calibration is therefore necessary. Common practice of Quality assurance/quality control (QA/QC) of the laboratories and QA/QC network should be established to ensure precision of the data when comparing the data among member countries.

• Additional water quality criteria

Apart from reviewing the derivation of criteria values for Arsenic and Zinc, there is a need to develop criteria and standards for additional parameters of concern, such as PAH's (polycyclic aromatic hydrocarbons), phthalate esters, and pesticides.

• Effluent criteria

Besides water quality standards for the protection of the coastal and marine environment, there is also a need to formulate ASEAN effluent standards to ensure and enhance the coastal water quality in ASEAN.

- **Sediment quality criteria**

Whilst water quality criteria and standards are being developed, there is also a need to develop sediment quality criteria and standards in order to provide better protection of the aquatic environment. The monitoring of contaminants in sediment would provide information on both the current as well as past levels of pollution. The concentration of contaminants accumulated in sediment is usually higher than that in the water column, and this allows a higher precision of chemical analysis.