SOUTH ASIAN SEAS PROGRAMME

Agenda Item 5 (m)

PROGRAMME AREA: Development and implementation of preventive strategies in response to perturbations in coastal areas caused by land-based activities

Introduction: The context of environmental perturbations in coastal areas.

South Asia's coastal waters have some of the richest and most diverse marine species and coastal habitats in Asia. It is well known that a wide variety of environmental externalities are generated from land-based activities with a significant negative impact on these coastal areas.

The present concept note highlights some of the imperatives calling for concerted action to reduce the diversity and scale of perturbations at three inter-related locations. These locations are at-source, along the path of transport and at the coastal-sink. While, some attention has been paid to the origin and impact of industrial pollutants and domestic sewage, there is enormous scope for defining and implementing preventive strategies with respect to three other important issues. They pertain to

1. transport and contamination of coastal waters by persistent organic pollutants and other harmful chemical derivatives used in agriculture in particular and

2. susceptibility of coastal systems to natural and artificially induced disasters

3. the need to strengthen coping strategies with respect to impacts of climate change.

We indicate an action plan to address these three issues on a priority basis. of equal importance is the need to tackle industrial pollutants through comprehensive waste minimization and cleaner production approaches including the identification and promoting the use of alternatives.

Some of the overarching approaches include reality checks on existing technical capabilities, assessment of capacity building and technical assistance needs and establishment of pilots through intensive multi-stakeholder involvement at various levels. These approaches will help initiate and sustain action simultaneously in at least three countries namely, Sri Lanka, Bangladesh and India, to start with.

Guiding Principles:

The priority areas have been chosen on the basis of a felt need to

- Contribute significantly to the body of information / empirical evidences which can then be used for defining well-guided integrated environmental action including the development and implementation of multiple interventions

- Prioritize issues of local and regional relevance with implications in fulfilling commitments of compliance to bilateral or multilateral environmental agreements.

Some important issues:

Most pollution loads including municipal, industrial, agricultural wastes and run-off, and atmospheric deposition, emanate from land-based activities. Contaminants are then transported long distances by watercourses, ocean currents and atmospheric processes. They affect the most productive areas of the marine environment, including estuaries and near-shore coastal waters. These areas are threatened also by physical destruction of habitats.

The present concept is designed to assist countries act individually and jointly considering their respective policies, priorities and resources to prevent, reduce, control and/or eliminate degradation of coasts and recover from impacts of land-based activities. Identification and assessment of options for management relate to the nature and severity of problems in relation to food security and poverty alleviation; public health; coastal and marine resources and ecosystem health. Some of the important contaminants include sewage; persistent organic pollutants; radioactive substances; heavy metals; hydrocarbons; nutrients etc. Invasive species in aquatic and terrestrial systems including agriculture pose significant threats

The objective of the proposed interventions is to help develop integrated strategies for protection of the coastal environment from LBA by which it will be possible to

- reduce emissions and discharges;
- find and introduce alternatives;
- identify and initiate use of cleaner production practices / processes,
- educe and/or eliminate hazardous by-products associated with production, incineration and combustion
- consolidate other programmes in progress
- pilot activities
- build capacities of stakeholders to implement preventive and adaptive strategies and
- develop a clearing-house mechanism for providing information on technologies and share experiences regarding coastal-zone-management methodology.

Recent reports show that

- 90 percent of Asia's sewage is discharged into the marine environment waters without treatment, threatening fisheries, mangrove forests, coral reefs and coastal wetlands
- Access to sewage treatment across Asia varies widely
- Discharges from many big industrial plants threaten coasts,
- Land use patterns are changing across Asia as result of continued economic growth leading to increased use of fertilizers, which along with sources like sewage and animal wastes are increasing nutrient loads in coastal waters.
- Two thirds of the world's total sediment transport to the oceans occurs in South and East Asia, and deforestation is adding to soil erosion and sediment loads in water.

The Global Programme of Action for the protection of the marine environment from land-based activities adopted in November 1995 clearly referred to the establishment of national action plans for preventive management, compliance and surveillance of pollutants including persistent organic pollutants. While several activities have been in progress since then, it is important to integrate emerging understanding of the scale and diversity of impacts.

Country-specific contexts:

Bangladesh

Sources of coastal and marine pollution include:

- Industrial waste (including those from ship breaking yards)
- Sewage disposal
- Solid waste
- Agrochemicals and PoPs

- Deforestation
- Salinity intrusion
- Rapid urbanization
- Erosion in the coastal zone
- Extraction of coastal resources
- Coastal tourism
- Land use change
- Climate change

In combating surface water pollution the Government needs to introduce

- land zoning with respect to industries,
- strengthen water quality monitoring;
- enforce conservation
- introduce waste reception and treatment facilities in ports, clean-up and rehabilitate hot spots
- database on coastal resources, coastal pollution, biology and toxicology of biotic pressures and options to minimize negative effects.

Sri Lanka

- Erosion of coastal area (about 1 meter per year) due to river daming, sand mining, collection of coral rubble and removal of coastal vegetation
- Salinisation of paddy land due to reduction of flood buffering capacity of mangroves, lagoons and estuaries.
- Degradation of coral reefs.
- The major sources of land-based coastal water pollution along the West, South West and South coasts are domestic sewage, industrial waste, solid waste and agricultural chemicals. The main industries contributing to water pollution are textile, paper, tanning, distilleries, paints and chemical production.
- Maritime traffic and effects
- Except for Colombo, no other city in Sri Lanka possesses treatment facilities for municipal wastes.
- About 45 to 50 per cent of Sri Lanka's coastline, primarily in the south, is exposed to coastal erosion. On an average, the Sri Lankan coast recedes by about 0.3 metres every year.

India

Under the Coastal Ocean Monitoring and Prediction System (COMAPS) programme water quality monitoring was carried out by various agencies including the CPCB and identified hot- spots in Indian coasts with respect to industrial and domestic pollution.

- The total quantity of wastewater generated by 87 coastal cities and towns is 5,561 MLD, which is one third of the wastewater generated by 644 class I cities and class II towns in the country. Only 78% of total wastewater generated in the coastal cities and towns are collected. The coastal cities and towns have facilities to treat only 9.38% of the wastewater generated.
- Pollution from use of persistent organic pollutants (POPs) such as DDT for crop protection and the issue of adoption of a legal instrument on the control of POPs.
- The effect of antifouling paints used on ships on marine organisms and the adoption of the ban
- Transfer of exotic species through ship fouling and ballast water

- ❖ Provide adequate and appropriate support from developed countries to ocean related capacity-building in developing countries
- ❖ International involvement in the management of the high seas fishery resources, as observed by the UN Conference on Straddling and Highly Migratory Fish Stocks.
- ❖ There is no data yet on the transfer of exotic species through ship fouling and ballast water

- Inventory of land-based sources and coastal outfalls transporting pollutants from the land to the seas
- Sector-wise identification of different uses of coastal waters, zoning/ classifying them in terms of respective designated-best-use classes
- Assessment of actual state and extent of pollution, if any, in coastal waters through systematic monitoring

Maldives

- Coral and sand mining
- Coastal erosion
- Dredging and land reclamation
- Sewage and solid waste disposal
- Over-fishing and Use of Destructive Fishing Practices

Pakistan

Coastal pollution by toxics and sewage with major portion of oil pollution at Karachi port.
www.american.edu/TED/karachi.htm

Three overarching questions in this context are:

1) How do current coastal zone regulations in countries of South Asia help communities prepare for and mitigate effects of natural disasters and degradation of coastal resources?

2) What are some adaptation strategies for coastal communities to better respond to coastal disasters and degradation relating to

- Changes in occupations and living areas post-disaster with a special emphasis on rehabilitation
- Physical restoration of disaster-affected and prone zones;
- Strengthening natural barriers

3) What is the role of credit and insurance markets in reducing risks associated with natural disasters?

Reality checks on integrated assessments of coastal zone vulnerability, prevailing process of adaptation, capacities of stakeholders and political institutions to tackle challenges, realistic cost estimates for various adaptation options will generate empirical evidences and help address the questions indicated above.

The proposed integrated approach will centre on a logical framework with well-defined goals, activities and expected output and outcome.

1. A detailed desk-based study will be the starting point. The desk-based study will collate information on a significant number of the most important prevailing interventions. This information will pertain to the spread and depth of empirical evidences, statement of actions needed with special reference to gaps either In

conceptualization or in the implementation status. Adequate care will be taken to gather information on the science and the management aspects including such mechanisms as regulations, incentives and disincentives, technical preparedness and institutional mechanisms

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2. Stakeholder consultations focusing on the above-stated aspects will follow. These consultations will be aimed at verifying the learnings and help establish the much needed link to implement concepts. Importantly, a clear understanding of the technical preparedness of stakeholders to engage in concerted action will emerge and help define the framework for capacity building.

3. The desk-based study and the consultations can be completed in a period of three months as part of the project process of developing the larger proposal focusing particularly on the implementation aspects.

4. A detailed roadmap highlighting the barriers to be addressed and the expected output/outcome will emerge as part of the process of development of the detailed proposal for the implementation phase. This will provide the basis for developing a scheme of activities including

   a. selection of site for development and establishment of a pilot,

   b. the technical and methodological approaches to fulfill the objectives of the pilot,

   c. scope for optimizing stakeholder involvement and

   d. demonstrating the feasibility of interventions on a location-specific basis.

5. Based on the above, it will be clear that the tasks indicated will constitute the preparatory phase before actually launching on the implementation phase of activities. While a large number of crosscutting issues will obviously be integrated into the assessments as part of the reality checks it is important to recognize that the above mentioned pertain to each of four areas namely, the work on persistent organic pollutants; improving preparedness to tackle disasters; facilitating adaptation approaches and reduction of priority- pollutants at source.

Outline of the budget

The project proposal development phase including the desk-based analysis and stakeholder consultations is expected to cost around USD 2,00,000 (USD 0.2 million). The actual implementation costs will relate to the allocations for full size projects.
Footnote:

Some of the expected outputs of the final implementation phase are indicated in the following:

1. In the case of the work on persistent organic pollutants a comprehensive plan for surveillance, a list of viable alternatives which could be used in pest management; demonstration of the successful use of some of the alternatives and capacity building of a segment of personnel associated with operations with respect to un-intentional releases will be achieved.

2. In the case of disaster mitigation preparedness with special reference to coastal areas a framework for identifying potential disasters particularly through chemicals and handling them will be developed. This is an addition to highlighting mechanisms for improving preparedness to tackle natural disasters. An information clearing house on options for mitigating impacts will be developed; with a special emphasis on best practices.

3. Pilot projects on adaptation will be of immense value to the respective governments in understanding the diversity and value addition opportunities for optimal use of locally available resources in addition to the development of a capacity-built cadre of stakeholders. A SWOT analysis of the various options will also emerge.

4. The feasibility of employing cleaner production options will be demonstrated in a representative set of firms in order to promote the use of such practices in several clusters close to water bodies. The links between substitution energy efficiency enhancement, mitigation of local environmental impacts, value addition to wastes to enhance recovery and recycle; thereby significantly reducing loads on aquatic systems and the

coastal systems in particular will be demonstrated. This is expected to help develop other complementing mechanisms including appropriate incentives and disincentives to promote mitigation.