

SACEP NEWS

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Editorial

Two Sides of the Same Coin: No Water and More Water



Source: Daily News, June 3, 2003



Source: The Island, June 8, 2003

The picture on the left shows people in Gujarat, India trying to reach deep into a huge well in search of water. The wells, reservoirs and ponds went dry as temperatures rose above 44°C leaving 900 dead in 17 days. The picture on the right is from Ratnapura, Sri Lanka where during the same period (in May), heavy rains caused floods and landslides. This was the worst flooding in Sri Lanka in 60 years, and it left in its wake over 200 dead and 25,000 homeless in the south and south east parts of the island.

As these pictures indicate, the proper management of freshwater resources is critical for the survival of people in South Asia. In Gujarat, the increasing abstraction upstream is causing a growing imbalance between supply and demand downstream, where reserves are in short supply, especially during the drier periods of the year. While in Ratnapura, unplanned urban development and lack of disaster management has resulted in casualties and damage to property.

Government policies and strategies with regard to water management have traditionally been concerned mainly with increasing supply to the irrigation sector. However, policies have recently become more focused on an integrated approach to water resource management by emphasising demand side management measures such as efficient water use, conservation and protection, institutional arrangements, legal, regulatory and economic instruments, public information and inter-agency cooperation. Common elements in national policies and strategies that are being adopted now include assessment and monitoring of water resources, protection of water associated ecosystems such as wetlands and watersheds etc. Progress has also been made in adopting a basin wide management approach. The Indus basin water-sharing accord between India and Pakistan, the acclaimed water sharing treaty between India and Bangladesh, the India-Bhutan cooperation on hydropower development, and the India-Nepal cooperation in harnessing transboundary rivers are examples of transboundary cooperation on water management in South Asia.

In recognition of the central importance of water resources as a key to sustainable development, the United Nations General Assembly proclaimed the year 2003 as the International Year of Freshwater with the slogan "water - two billion people are dying for it". The International Year of Freshwater provides an excellent opportunity to raise awareness globally, promote best practices, motivate people and mobilise resources in order to meet basic human needs and manage water in a more sustainable manner. Therefore, this edition of the SACEP Newsletter highlights some water issues we are facing today.

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Sharing the Water Resources in the Ganges-Brahmaputra-Meghna River Basins

The Ganges-Brahmaputra-Meghna (GBM) is one of the largest freshwater river systems in the world and more people live in this area than in all the countries of Western Europe combined. It crosses five national boundaries thereby increasing the magnitude and complexity of the problems and the solutions needed to sustain the river network that supports millions of people and a host of other species.

are transboundary, therefore management also has a regional focus. This would mean having to agree on standardised policies and a permissible level of dumping upstream and downstream. This runs into problems of how to standardise a range of sectoral policies in each country, how and who will monitor pollution, how to determine the point of pollution and how to take action against violations.

Sharing of the Ganges-Brahmaputra-Meghna River System (%)

Countries	Ganges (1,087,000 km ²)	Brahmaputra (580,000 km ²)	Meghna (78,000 km ²)	Total (1,745,000 km ²)
India	79	34	54	63
China	4	50	-	19
Nepal	13	-	-	8
Bhutan	-	8	-	3
Bangladesh	4	8	46	7

Source: Ahmad et al, (1994) in Ahmad, Q.K. and Ahmed, A.U. (2003).

Water sharing issues have been debated and fought over throughout history. The building of the Farakka Barrage in India in the mid 1970s, highlighted the politically charged issues of water sharing in the South Asian region. Some of the attempts to share the water have been through bilateral agreements among the co-basin nations. The treaty between Bangladesh and India in 1996 (on the Ganges), and the treaty between India and Nepal in 1997 are some examples. There have also been efforts to build partnerships to exchange information and data for flood management between India and Bangladesh and between Nepal and Bhutan. These actions are positive developments that have changed the atmosphere in terms of water sharing and management. Some practitioners and policy makers are of the view that this could be taken a step further to sub-regional agreements as in the case of the Mekong river delta.

In the wake of the global climate change phenomenon predictability of natural disasters are becoming more uncertain. Coping with disasters and sharing limited water resources equitably is a challenge the countries in the GBM basin face today. Some contentious issues surrounding the sustainable management of this river basin are as follows:

- **Augmentation of water:** The annual water flow is not uniform and periods of too much and too little water are the norm. Therefore if water is to be available to all throughout the year, water flows need to be artificially controlled. This runs into problems of where to put the barrage or storage tank or channel, how big should it be, who will pay for it, how many of which nationality are to be displaced and who will compensate them. In addition the control of water could be a sore point among the countries.
- **On the issue of water pollution:** The effects of pollution

- **Access to information:** Adequate and timely information can lead to better control and preparedness in the face of disasters such as floods and droughts. This would mean that politically and nationally sensitive information might have to be shared. In addition it would raise questions on how valid the information that exists is and how to authenticate it.

- **Equity:** Who benefits and who loses, how and by whom this is to be determined is the main obstacle. In addition, stakeholder participation is a must for development interventions but determining the level of participation and reaching consensus will be an arduous task.
- **Water for the river:** Along with man-made and man-benefiting scenarios there also needs to be adequate quantity and quality of water and flows to keep the river alive and to sustain all other ecosystems (such as mangroves and wetlands) depending on these water bodies. This requires further research into the sustainable capacity levels and setting standards for all types of water use. How do you assess which ecosystems and species will be protected and how much of whose land will be conserved are also issues that need to be resolved.

Efforts towards water management in a river network such as the GBM, also indicates the need to have national policies aligned with international objectives. For example India's proposed project to interlink rivers to transfer resources from water rich areas to water scarce areas has caused much trepidation among the people in India as well as her neighbours. Negotiation and collaboration at national and regional levels are crucial for sustainable water management.

References

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Facts and Figures on Fresh Water

Globally

- The absolute minimum water requirement for a person per day is 50 lt: 5 lt for drinking; 20 lt for sanitation; 15 lt for bathing; 10 lt for food preparation.
- 1.1 billion people lack access to safe drinking water while 2.4 billion have inadequate sanitation.
- 1/3 of all people (2.7 billion) are said to face water scarcity by 2025.
- Agriculture accounts for 70% of water withdrawal from freshwater sources world wide.
- Floods are increasing in frequency and severity: Examples: Floods in:
 - 1971 – 1995 – affected 1.5 billion;
 - 1983 – 1987 – affected 31 million;
 - 1993 – 1997 – affected 130 million.
- By 2020 water use is expected to increase by 40% and 17% more water will be needed for food production.

In South Asia

- Fresh water availability is between 1000 – 2000 m³ per capita per year (one of the lowest in the world).
- Agriculture is the biggest water user, using as much as 86% of the available fresh water.
- 90% of waste water is discharged untreated into water bodies. The main pollutants are organic wastes.
- The Ganges is one of the most polluted rivers in the world.
- Some ground water sources with shallow aquifers in Bangladesh and West Bengal contain high levels of arsenic – ranging from 0.06 – 1.86 mg/lt (the WHO standard for drinking water is 0.01 mg/lt). It is estimated that 68,000 villages are at risk.
- Inappropriate agriculture practices, increasing and unplanned industrialisation and urban expansion are seen as the main reasons for deteriorating water quality.

Sources: 2002. UNEP. GEO 3;
2003. WWC. 3rd Water forum;
UNEP 2002. SoE-South Asia.

SACEP Co-hosts the Final Workshop on Global International Waters Assessment, Sub Region 53

SACEP in collaboration with UNEP, GEF and Kalmar University of Sweden organised the final workshop for the Global International Waters Assessment, Sub Region 53 - Bay of Bengal assessment programme, in Colombo, Sri Lanka from 28-30th June, 2003.

The Global International Waters Assessment (GIWA) was initiated with the aim of producing a comprehensive and integrated global assessment of the ecological status and the causes of environmental problems in 66 international water areas in the world. The main purpose of this study is to provide politicians and other decision makers with information about where they should concentrate their efforts to mitigate environmental degradation in international waters.

The workshop brought together experts from various fields (ecologists, economists, engineers, planners, politicians etc.) from South and South East Asia. There were 27 participants representing Bangladesh (4), India (3), Indonesia (1), Malaysia (1), Myanmar (2), Nepal (1), Sri Lanka (2), Thailand (3), and regional/international organisations (10).

The meeting focused on analysing root causes and recommending policy interventions to tackle the problems, which were identified earlier at the scaling and scoping stage of this assessment. The analytical processes used to achieve this were *causal chain analysis* and *policy option analysis*. The main issues analysed were:

- 1) Modification of stream flow due to abstraction, diversion, navigation and land use patterns; and
- 2) Modification of ecosystems - habitat loss through agriculture, aquaculture, unsustainable harvesting and human settlements.

The main sites that were chosen for in-depth analysis were the Ganges-Brahmaputra-Meghna river network - focussing mainly on the Ganges under the modification of stream flow, and Mangroves - focussing on Merbok and Sunderbans under habitat loss.

A panel discussion that ensued on policy matters highlighted various aspects that are deemed necessary for a policy to be successful. Some thoughts shared by the panel are given below:

- Spatial and temporal aspects need to be addressed in policy making.
- The worth of a policy is in its implementation and this depends on finances, stakeholder participation, political willingness and equity balancing. In addition it will depend on capable institutions and personnel to implement the policy.
- Inter-sectoral policy integration is necessary for better coordination and management.
- Policies should be supported by adequate data and technical details.
- Policies should support natural systems not just those that affect human development.
- Developing policies should address the fundamental questions of for whom? and by whom? This needs engagement in all sections and also depends on suitability to existing conditions.

Some of the policy interventions recommended for modification of stream flow were to address conservation and augmentation of water through interventions such as utilisation of waste water for agriculture, constructing storage reservoirs, harvesting rain water (medium sized ponds), proper pricing policies and sub-regional water agreements for the sharing of water. Some of the interventions recommended for addressing the modification of ecosystems were to strengthen protection and restoration efforts such as increasing participatory decision making, zonation planning, stricter enforcement of laws, reducing disruptive activities in ecologically sensitive areas by introducing alternatives, replanting mangroves and addressing activities geared to keep the rivers alive upstream.

For more information on the Bay of Bengal Assessment contact:
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Over 60 stakeholders met to prepare the South Asia Regional Plan for GPA

The UNEP Coordination Office for the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) in association with SACEP and the International Water Management Institute (IWMI) organised the South Asia Regional Consultation Workshop to prepare the 2003-2006 Regional Plan of Action for GPA from 28-30th April, 2003 in Colombo, Sri Lanka.

This workshop was convened in line with the results of the 1st Inter-governmental Review Meeting of the GPA held in Montreal in November 2001 and the commitments pertaining to GPA in the Plan of Implementation of the World Summit on Sustainable Development. The workshop identified activities requiring regional collaborative efforts emphasising the potential for public and private partnerships, capacity building, and specific activities to which the GPA Coordination Office could add value.

Participants included representatives from governments, international financial institutions, bilateral donors, the private sector, civil society and NGOs currently involved in GPA-related activities in Bangladesh, India, Pakistan and Sri Lanka. A draft Action Plan was developed for each country.

The Silent Killer of South Asia

Over 36 million people in Bangladesh, India, and Nepal are being poisoned without their knowledge, by drinking well water contaminated with arsenic. The problem has also been encountered in China and Latin America. Worldwide, a total of about 100 million people are believed to be dependent on arsenic-contaminated drinking water. The sheer magnitude of this disaster means that we face new and unique challenges and tasks.



Village women learn about arsenic, by Mr. Altaf Hossain
Source: wbln1018.worldbank.org/SAR/so.nsf/

Over the last two decades, untreated tube well water was heavily promoted and developed as a safe and environmentally acceptable alternative to microbiologically unsafe untreated surface water. In the 1980s, scientists began finding evidence of arsenic contamination, but only in the mid 1990s has the crisis emerged into broad public awareness, particularly in the context of the presence of arsenic in ground water extracted from the alluvial aquifers underlying West Bengal and Bangladesh. Here arsenic in ground water occurs naturally when weathered minerals and rocks dissolve.

Arsenic associated health risks have been observed even by drinking water with arsenic concentrations of less than 0.05 mg/l. Symptoms appear in the form of keratotic lesions mostly on the feet and hands. They are painful and make it difficult for affected people to work and carry out their daily chores. Since their work efficiency drops, they are often misunderstood and considered lazy. As a result, many also suffer psychological distress. Even worse is the fact that arsenic is carcinogenic. Skin and lung cancer caused by arsenic has been confirmed in many places. Taking into account the

incubation period, researchers predict a sharp rise in the number of arsenic-induced cancer patients in Asian countries within the next five to ten years. Disorders in the peripheral nervous system and circulatory organs are also expected to increase. The situation is also serious because arsenic affects the central nervous system of children.

International organisations and researchers have recently started looking into the effects of arsenic on human health and

providing support for preventive measures. However, there are several major aspects of the crisis needing attention both at the technological and policy development level. These aspects include water treatment technologies, safe water options, fate of arsenic in the environment, treatment of arsenicosis patients, community involvement and strategic policy orientation.

Taking steps to combat this problem demands the serious attention and cooperation from policymakers and researchers alike. Information from scientific research should be fed directly into the development of strategies to cope with the problems related to arsenic contamination.

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www.bicn.com/acic/;

www.unu.edu/WSSD/files/docs/Arsenic.pdf



A Workshop on the Implementation and Enforcement of MARPOL 73/78

The South Asia Regional MARPOL 73/78 implementation and enforcement workshop, hosted by the International Maritime Organisation (IMO) and SACEP was held from 30th June to 4th July in Colombo, Sri Lanka. Hon. Mr. Rukman Senanayake, Minister of Environment and Natural Resources, Government of Sri Lanka, inaugurated the training. Two participants from each country were trained in national and regional implementation and enforcement of the convention. MARPOL 73/78 is a legally binding Convention, initiated to regulate different types of ship generated pollution, laid down in 20 Articles and 6 Annexes regarding pollution from: I)oil, II)chemicals carried in bulk, III)packaged goods, IV)sewage, V)garbage and VI)air.

The following table gives the status of ratification of the Convention by the five maritime countries of South Asia.



Inauguration ceremony of the workshop

discharge requirements and other related issues. Parties to the Convention undertake to provide IMO with the following:

- The text of laws, orders, decrees and regulations and other instruments which have been published on matters within the scope of MARPOL 73/78
- A list of nominated surveyors or recognised organisations authorised to act on their behalf in the administration of matters relating to the design, construction, equipment, and operation of ships carrying harmful substances.

Table 1: Status of ratification of MARPOL Annexes (up to June 2003, X = Ratified)

MARPOL Annex	Entry into force	Number of Ratifications	Status of South Asia				
			Bangladesh	India	Maldives	Pakistan	Sri Lanka
Annex I/II	02/10/1983	125	X	X		X	X
Annex III	01/07/1992	107	X			X	X
Annex IV	27/09/2003	91	X			X	X
Annex V	31/12/1988	112	X			X	X
Annex VI	-	10	X				

In order to enforce MARPOL 73/78, a State Party must give full effect to the provisions of the Convention under the national law. This includes the passing of enabling regulations in respect of all the technical Annexes to which the State is bound, and the incorporation of a framework of sanctions against violations within the jurisdiction of a State Party. Annexes 1 and II are mandatory for parties to the treaty while the rest are optional and non-binding unless a party has specifically accepted them.

MARPOL implementation is a complex issue, as it is a combination of shipboard technology, environmental

- A sufficient number of specimens of their certificates issued under the provisions of the regulations.
- A list of reception facilities, including the location, capacity, available facilities & other characteristics.
- Official reports or summaries of official reports in so far as to show the results of the application of MARPOL.
- An annual statistical report in a form standardised by IMO, of penalties that have actually been imposed for infringement of MARPOL.

This five day training programme conducted by IMO consultants, provided the participants with the necessary knowledge to deal with each of the above issues.

IMO-SACEP to organise 5 more workshops within this year

The IMO has informed the SACEP Secretariat that it will finance the following 5 workshops in the remainder of 2003:

- A Regional Oil Spill Preparedness, Responses and Cooperation (OPRC) Level 2 Training
- Three National OPRC level 3 training courses for Maldives, Pakistan and Bangladesh
- A National MARPOL/Ship Recycling workshop for Bangladesh

This financial assistance was obtained as a result of the proposal submitted by SACEP to IMO for capacity building in the development and operation of national oil spill contingency planning. The OPRC Level 2 training is scheduled for September 2003 for senior officials who have a supervisory or superior management role in the response under the contingency plan while the Level 3 training courses will target the important stakeholders who would be involved in the preparation process of the national contingency plan.

Of the five maritime countries of South Asia, only India has both the plan and the resources to respond effectively to an oil spill. Sri Lanka has a good plan, but lacks trained people and material resources to implement it. Bangladesh is in the process of developing their Action Plan while, Maldives and Pakistan are yet to develop their plans. A country should look beyond the initial plan to its long-term maintenance, through exercising and training to respond to a major oil spill incidence.



Water: Human Right or Commercial Resource?

By Ruana Rajepakse

On 26 November 2002, the United Nations Committee on Economic, Social and Cultural Rights issued General Comment No.15 of 2002 that declared:

"Water is a limited natural resource and a public good fundamental for life and health. The human right to water is indispensable for leading a life in human dignity. It is a prerequisite for the realisation of other human rights."

1. Summary of the General Comment No. 15 of 2002.

- 1.1 The elements of the right to water must be adequate for human dignity, life and health. Adequacy should not be interpreted narrowly by mere reference to volumetric quantities and technologies. Water should be treated as a social and cultural good, and not primarily as an economic good. The manner of the realisation of water should be sustainable, ensuring the right of present and future generations in line with the definition of sustainable development adopted at the 1992 Rio Conference on Environment and Development.
- 1.2 The principal elements of the right to water are availability, quality and accessibility. Supply must be sufficient for regular personal and domestic use including drinking, sanitation, food preparation and personal and household hygiene. Some individuals or groups may require additional supply due to health, climate and work conditions. Water should be made available to deprived urban areas, even to those in temporary dwellings. There should be no arbitrary disconnection, and where disconnection is based on failure to pay for water, a person's capacity to pay must be taken into account. "Under no circumstances shall an individual be deprived of the minimum essential level of water."
- 1.3 Water should be of a quality that is free from harmful substances and of an acceptable colour, odour and taste for each type of use. WHO provides guidelines for developing national standards.
- 1.4 Accessibility is divided into the physical and economic. Physical accessibility requires access to adequate water supplies for all sections of the population. There must be proximity to households, educational institutions and workplaces, and with regard to gender, lifestyle and privacy requirements.
- 1.5 Economic accessibility means that water and water services must be affordable to all, inclusive of direct and indirect costs. The price of water must not compromise the realisation of other Covenant rights. Access should also be non-discriminatory, with special care for vulnerable and marginalised groups. Recognising that the Covenant prohibits communities from being deprived of their means of subsistence, the statement also recognises the water needs of subsistence farmers and indigenous peoples.

2. Obligations of State Parties to the Covenant

- 2.1 The UN Committee recognised the constraints operating on State Parties due to limited resources, but declared that certain requirements such as non-discrimination and equitable access were mandatory. Furthermore, any regressive measures in relation to water rights would be prohibited. Inappropriate resource allocation was criticised as leading to covert discrimination. "Investments should not disproportionately favour expensive water supply services and facilities that are often accessible only to a small fraction of the population, rather than investing in services and facilities that benefit a far larger part of the population" (Paragraph 14 of the General Comment).
- 2.2 The obligation of States was threefold: to respect, protect and fulfil water rights. Respect implies refraining from arbitrary interference in the enjoyment of water rights including traditional systems of water allocation. This includes refraining from causing pollution, and also from destroying civilian water facilities during armed conflict.
- 2.3 The obligation to protect includes preventing third parties, whether individuals, groups or corporations, from denying access to, or polluting or inequitably extracting from, water resources. Where water services are controlled by third parties, there is an obligation on the State to ensure that safe and acceptable water is made available at an affordable price.
- 2.4 In order to prevent abuse, the State is required to set up an "effective regulatory system" that will function in accordance with the Covenant and this General Comment. Such a system should include independent monitoring, genuine public participation and the imposition of penalties for non-compliance. Public participation includes "the right to seek, receive and impart information concerning water issues". Women are expressly required to have a place in the decision making process.
- 2.5 Fulfillment of a State's obligations requires legal recognition to be given to the right to water within the national political and legal system, preferably through legislation. Each State is also expected to adopt a national strategy and plan of action for ensuring that water is available and affordable to everyone, and to establish competent institutions to carry out these strategies and plans. The General Comment makes express reference to appropriate pricing policies including free or low-cost water to needy sections of the population. Other measures include reducing depletion of water resources through unsustainable extraction, diversion and damming, and elimination of contamination of watersheds and water-related ecosystems.
- 2.6 Even where the implementation of the right to water has been delegated to regional or local authorities, the State



Party retains the responsibility to comply with Covenant obligations. Persons denied their right to water should have access to effective judicial and other appropriate remedies. Institutions such as ombudsmen and human rights commissions should be permitted to address water rights issues.

3. International Obligations of States and Obligations of Multilateral Agencies

- 3.1 The General Comment calls for international cooperation and assistance to achieve the full realisation of the right to water. Action taken within a State's area of jurisdiction should not deprive another country of the ability to realise the right to water of its people. "Water should never be used as an instrument of political and economic pressure."
- 3.2 Steps should be taken by State Parties to prevent their own citizens and companies from violating the right to water of individuals and communities in other countries. International assistance should be provided in a manner that is consistent with the Covenant and other human rights standards, and such assistance should be "sustainable and culturally appropriate". "Agreements concerning trade liberalisation should not curtail or inhibit a country's capacity to ensure the full realisation of the right to water."
- 3.3 International financial institutions should take steps to ensure that the right to water is taken into account in their lending policies, credit agreements and other measures.

4. Conclusion

- 4.1 The wording of the General Comment makes it clear that the ownership of water as such is not transferable. It is a public good. This coincides with ancient traditions in this country and with the principles of Roman-Dutch law. The rights of the citizenry of this country over its natural resources and the role of the State as guardian in the public interest are well set out in *Bulankulama v. Secretary, Ministry of Industrial Development and others*, 2000 (3) Sri L.R. 243.
- 4.2 The General Comment does not rule out water services being in private hands, but places on the State the duty of effective regulation so as to ensure sustained availability, quality and equitable access. In particular water must be affordable even to the poorest and the price of water must not directly or indirectly interfere with the other human rights set out in the Covenant.
- 4.3 However it is also clear that each State must be free, within the framework of international law, to make its own decisions regarding its water resources, and these decisions must be made in participation with the public. Secrecy in the framing of laws and policies goes against the requirement of access to information set out above.
- 4.4 The ability of a State to effectively regulate water services, control pricing, ensure equitable distribution and hold third parties accountable are all relevant factors in determining the best water policy.

From a public lecture given by Ms Ruana Rajepakse, Attorney-at-Law, and Executive Director, Citizens' Trust at a seminar organised by Sri Lanka Foundation Human Rights Commission in collaboration with Citizens' Trust, February 26, 2003.

The Use of Constructed Wetlands for Wastewater Treatment



Constructed wetlands for wastewater treatment is becoming widespread all over the world due to the demand for water quality improvement for reuse; and also to compensate for the loss of natural wetlands. Malaysia began using constructed wetlands in 1999 with the creation of the 650 ha Putrajaya Wetlands which is believed to be one of the largest constructed freshwater wetlands in the tropics. Constructed wetlands are engineered wetlands that are built to emulate the functions of natural wetlands to absorb by-products from human activities. The system can tolerate various pollutants and could be used by various users including governmental departments and agro-based industries to treat wastewater before it is discharged into natural waterways. In addition to water purification, constructed wetlands also serve as a wildlife sanctuary and provide habitat for wildlife. The system can be aesthetically pleasing and serve as an attractive destination for tourists. Aside from that it can also be developed into a wetland education centre. Therefore, this system can serve as a low-cost alternative for wastewater treatment.

A report on the use of constructed wetlands for wastewater treatment has been recently published by Wetland International. The booklet provides a valuable introduction to constructed wetlands and it can be used to raise awareness of their value among environmental professionals. It demonstrates how this system promotes sustainable use of local resources while relying on renewable energy sources. Wetland plants and microbes are the active agents in the treatment processes.

You can download the report from: www.wetlands.org/pubs&/ConstructedWetlands.htm



Coastal and River Basin Managers Met in Chennai to Discuss the ICARM concept

Twenty Three coastal and river basin managers from Bangladesh, India, and Sri Lanka, together with resource persons from Denmark and the

Lagoon of Sri Lanka and Polder river basin project of Bangladesh. The discussion at the end of each presentation, led to a clear understanding towards the application of ICARM to sustainably manage the water resources.

On the 3rd day of the workshop, the participants were taken on a field trip along the Chennai coast to get a practical understanding about the problems associated with not applying the ICARM concept.

The workshop came up with the following conclusions:

Netherlands met at the National Institute of Ocean Technology Centre, Chennai, India from 7-10th April, 2003 to discuss Integrated Coastal Area and River basin Management (ICARM) issues in the South Asian Seas region.

The workshop was organised by SACEP in collaboration with UNEP-Regional Seas Programme, UNEP-GPA and the Integrated Coastal and Marine Area Management Project Directorate of India, with the following objectives:

- Raise awareness on the link between river basin and coastal area issues and the benefits of integrated management
- Identify key management elements for ICARM
- Make recommendations for ICARM cases
- Identify possible pilot projects in the region
- Create awareness on the international initiatives for collaboration and information exchange on ICARM
- Identify ways in which SAS and GPA could provide and support the framework for regional cooperation and developing regional strategies for ICARM

The ICARM concept developed by the water branch of the UNEP provides the context to consider explicitly aspects of natural and socio-economic systems that have previously been seen as outside the scope of interest of policy makers and planners, concerned with only the sectoral development of river basins or coasts. Recognising the linkages between the river basin and the coastal zone will lead to better coordination of policy making and action across sectors (water, forestry, agriculture, urban development, fishery etc) which will ultimately result in more rational use of the resources.

At the meeting, eight case studies from the region were presented: Guatami-Godavari, Krishna and Chilika Lagoon of India, Kelani, Mahaweli, Kirama Oya, and Negombo

- True linking of the management of rivers and coastal areas is at the moment more the exception than the rule, but linking the two fields is clearly feasible. The ICARM approach will be more beneficial to coastal ecosystem management.
- Making Policies and Action Plans are not a sufficient condition for action. Planning and monitoring instruments are widely developed, but do not deliver the expected results. It is the local focus that delivers results. Governments and NGOs are powerless in Natural Resources Management without mobilisation and participation of the dependent communities. Therefore, creating public awareness and mobilisation instruments is a key factor for successful implementation. People must be involved in both planning and implementation and contribute to the process with their own resources. People need tangible results quickly and they will like to see concrete benefits to take participation seriously.
- Capacity building should be promoted by sharing positive and negative experiences as cases evolve through establishing a regional and inter-regional network. This can be made more concrete by identifying interesting ongoing cases in each country, developing demonstration projects preferably with low external funding, and building partnerships and twinning arrangements.

It is expected that the countries will develop a few pilot projects for the demonstration of good ICARM implementations.

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Chilika lake, which is a Ramsar Site, is the largest brackish water lagoon in the East-coast of India. The Lagoon was facing a number of problems: siltation, choking of the inlet channel, decrease in salinity, increase of invasive fresh water species, decrease in fish productivity, an overall loss of biodiversity etc. The Chilika Development Authority (CDA) was created in 1992 to restore the degraded lake ecosystem. They adopted an integrated approach inclusive of community participation. A Ramsar Advisory Mission to Chilika lake in 2001, stated that Chilika Lake is an exemplary case study of good practices and application of Ramsar guidelines, tools and approaches. The CDA was awarded the Ramsar Wetland Conservation award for their work. The process used is seen as an appropriate eco-restoration model that can be replicated elsewhere.



Fishing boats landing: Lake Chilika
Source: www.ramsar.org

For more information visit: www.ramsar.org/ram_rpt_50e.htm; www.chilika.com



Update from the FAO-executed Bay of Bengal Large Marine Ecosystem Programme (BOBLME)

By Dr. Philomene Verlaan

In view of the importance of the Bay of Bengal Large Marine Ecosystem to the health, well-being and livelihoods of the millions of people living in the BOBLME region, the Global Environment Facility (GEF), through the World Bank as the Implementing Agency, and Sweden, through the Swedish International Development Agency (SIDA), are funding a project for the Sustainable Management of the BOBLME.

The project will culminate with the development of a Strategic Action Plan providing a comprehensive framework to address the priority transboundary problems in the region. Potential investment, technical assistance and capacity building interventions, both national and regional, would also be identified. This will be carried out in two phases:

1. A 24-month preparatory phase in which the national and regional coordinating mechanisms will be put in place to ensure broad-based stakeholder participation in the development of the Transboundary Diagnostic Analysis (TDA). This initial phase will also develop base-line national reports and regional thematic papers and preparation of the main phase project document for GEF and other donor financing.
2. The main project phase during which the TDA would be undertaken and the SAP developed.

The work of the eight BOBLME countries, Bangladesh, India, Indonesia, Malaysia, Maldives, Myanmar, Sri Lanka and Thailand, is being assisted by FAO as the Executing Agency for this GEF/SIDA Project. The Project Office is hosted by the Government of India in Chennai.

The first BOBLME Programme Steering Committee (PSC) Meeting was hosted by India in Chennai, 28-29 January, 2002. The second PSC Meeting and the first Regional Workshop was hosted by the Government of Thailand in Pattaya, 17-21 February, 2003. Representatives from the eight participating countries, the World Bank, Sweden, NOAA, invited guest speakers and FAO attended this Workshop, which was designed to foster multi-dimensional, regional team building and stimulate "brainstorming" to define and address the key transboundary issues facing the living marine resources and the related environmental health of the BOBLME.

The Workshop began with keynote presentations from international speakers who addressed the LME approach to ocean resources management, including lessons learned from LME Programmes (PDF Block B and implementation phases) already developed and carried out in other parts of the world. Each BOBLME member country presented a national overview of the principal threats to its living marine resources (fisheries in particular) and environmental health. They also suggested priority actions to be addressed at the LME level. The presentations and discussions provided the conceptual background for the structured analysis in Working Group sessions on the second and third days of the Workshop.



The Themes for Regional Studies were established by a country vote in plenary from the total list of themes proposed by the individual Working Groups. Over-exploitation of living resources, status of stocks & assessment capability, critical habitats (especially mangroves & coral reefs), land-based sources of pollution, livelihood & food security, and legal mechanisms & instruments for enforcement & management will be the subject of Regional Studies for the BOBLME Programme. The suggestions for pilot projects that the countries would like to explore further include GIS mapping, trawling effects study, stock assessment of shared resources and highly migratory species, monsoon effects on primary productivity.

The timeframe for completion of the BOBLME PDF Block B Phase is as follows:

- All countries to hold the second National Task Force meeting by 8 September, 2003
- All National Workshops are to be held by 1 November 2003
- The second Regional Workshop is to be held in April 2004
- The BOBLME draft Project Brief should be agreed by countries in June 2004
- The final Project Brief should be submitted in time for the GEF Council in October 2004.

A BOBLME website is being developed to facilitate the dissemination of information relevant to BOBLME Programme.

For further information, please contact
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Coral Reef Update – Outcomes of ITMEMS 2

The second International Tropical Marine Ecosystem Management Symposium (ITMEMS2) was held in Manila, Philippine from 24 - 27 March this year. It brought together 200 people from 36 countries reflecting a broad range of experience of managers, scientists, private sector, non-governmental organisations, development and funding agencies to review progress to share and discuss lessons learned in implementing the ICRI Framework for Action. A specific objective of the Symposium was to identify gaps and priorities for implementation in the ICRI program of action to manage tropical marine ecosystems.

The symposium identified priority areas for action in the next 5-10 years in line with the World Summit outcomes such as protected areas, the contribution to sustainable fisheries, the need to engage all key stakeholders, including the private sector and improved capacity building.

The South Asian participants took this opportunity to discuss and exchange ideas on how to proceed with developing ICRAN activities in the region, whilst maintaining and building the existing networks such as GCRMN and CORDIO. One outcome of these discussions was to produce a white paper, which will illustrate the status of coral reef related activities and identify priority issues and needs with regard to conserving coral reef and other near-shore ecosystems within the region.

To facilitate the communication between the partners during this phase, a password protected section on the ICRAN website has been established (www.icran.org) to store relevant

background documents and the draft paper/s. The 1st draft of the white paper is now available in this site.

The following are the recommendations achieved from the South Asian stakeholder discussion:

- The establishment of a South Asia Coral Reef Unit to facilitate implementation of various regional and international initiatives in the management of coral reefs.
- Promote the involvement of stakeholders in identifying viable alternative employment options, opportunities and resources in order to reduce pressure on coral reef ecosystems.
- Strengthen effective enforcement mechanisms and improve capabilities within countries to fulfil requirements under all treaties and conventions.
- Improve funding for biophysical and socio-economic monitoring, restoration, capacity building, establishment or improvement of databases, networking including sharing of information and experiences.
- Recommend the implementation of MPA concept and the application of long-term monitoring results in decision making for effective conservation and management of coral reef ecosystems.
- Recommend the strengthening of education and awareness programmes at all levels to ensure sustainable use of coral reefs.

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Water Poverty Index (WPI)

Experts in Keele University and the Centre for Ecology and Hydrology in Wallingford, UK have developed a "Water Poverty Index" (WPI) aimed at measuring the degree in which water scarcity affects human populations. It is derived through a process similar to the Human Development Index (HDI). The categories used for indicators are: 1) physical availability of the resource, 2) population with access to water, 3) socio-economic indicators to determine capacity to enjoy access to water, 4) water use per capita and 5) the importance placed on environmental management. Given below are the WPI results for some South Asian countries. It shows that South Asia's countries fall in the middle range.

South Asia								
Country	Resources	Access	Capacity	Use	Environment	WPI	HDI	Falkenmark
India	6.8	11	12.1	13.8	9.5	53.2	0.571	1.9
Bangladesh	9	13.8	10.1	12.3	9	54.2	0.47	5.1
Nepal	10.2	8.7	11.2	12.6	11.8	54.4	0.48	8.5
Bhutan	14	12.8	9.9	8.1	11.2	55.9	0.447	44.7
Sri Lanka	7.5	12	15.3	10.6	10.8	56.2	0.735	2.7
Pakistan	7.3	13.5	11.5	14	11.5	57.8	0.498	2.4

Note: The Falkenmark index measures water resources per capita per year.

For more information: www.nwl.ac.uk/research/WPI



Capacity Building for Air Pollution Monitoring

The Malé Declaration, adopted in 1998 is an inter governmental agreement to address regional air pollution issues. Countries party to this agreement are Bangladesh, Bhutan, India, Iran, Maldives, Nepal, Pakistan and Sri Lanka. The implementation is a collaborative effort of UNEP-RRCAP, SACEP and the governments of countries party to it. Technical assistance is from SEI and financial support is from SIDA (RAPIDC initiative).

Under the aegis of the *Malé Declaration on Control and Prevention of Air Pollution and its Likely Transboundary Effects for South Asia*, a series of training programmes and installation of air pollutant monitoring stations are underway. The first programme was held in Nepal in March 2003. Fifteen personnel from a number of institutions in Nepal were trained in sampling and analysis of air pollutants. The first monitoring station was set up in Rampur (Chitwan District). A training was also held in Bhutan where 10 technicians from the various institutions were trained and a monitoring station was set up in Golephu. The most recent training was held in Sri Lanka in June 2003 and trained 10 staff members from the Central Environment Authority. A monitoring station was set up in Dutuwewa (Anuradhapura District).

A "Training Manual on Monitoring Transboundary Air Pollution" has been developed by this project. This manual describes how to use equipment, and sample and analyse wet and dry deposition.



A technician gathering data in the monitoring station in Golephu, Bhutan

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Or visit:

www.rrcap.unep.org/issues/air/maledec/
A bi-annual newsletter is also available.

Biosafety Protocol Enters into Force on September 11, 2003

Ratification by the Republic of Palau triggers the countdown to the entry into force of the Cartagena Protocol on Biosafety. It is the first legally binding international agreement governing the transboundary movement and use of living modified organisms (LMOs) that may have adverse effects on the biological diversity and human health. The Protocol, adopted by the member governments of the Convention on Biological Diversity (CBD) on January 29, 2000, will come into effect on September 11, 2003 after more than five years of negotiation.

The Cartagena Protocol will ensure that the development and use of biotechnology are subject to adequate and transparent safety measures, known collectively as biosafety. At the date of entry into force, certain provisions will take effect immediately:

- Countries shipping LMOs for intentional introduction into the environment will have to give prior notification of the first shipment to an importing country that is a party to the Protocol under what is referred to as the "Advance Informed Agreement" procedure. Sufficient information will have to be provided to enable importing countries to make informed decisions.
- Member countries of the Protocol will also be required to use the Biosafety Clearing-House (BCH) to fulfil a number of specific obligations. The BCH is a largely Internet-based facility established under the Protocol to facilitate communications and exchange of information between the Parties.
- All shipments containing LMOs for intentional introduction into the environment will be clearly identified as such in the accompanying documentation which must specify the identity and characteristics of the specific LMOs contained in each shipment.

Table: Status of ratification

Country	Status
Bangladesh	20th May 2000 (sign)
Bhutan	26th August 2002 (acs)
India	17th January 2003 (rtf)
Maldives	02nd September 2002 (acs)
Nepal	02nd March 2001 (sign)
Pakistan	04th June 2001 (sign)
Sri Lanka	20th May 2000 (sign)

As of June 30, 2003, 52 instruments of ratification or accession have been deposited with the UN Secretary-General. In South Asia, the Protocol, will come into force in Bhutan, India and Maldives. The other countries are only signatory to the protocol (see table).

Following the agreement's entry into force, the first meeting of all the parties, is scheduled for the first quarter of 2004 in Malaysia.

To help developing countries assess the potential risks and rewards of genetically engineered crops, UNEP, with funding from GEF, is overseeing the largest capacity building project ever conceived in the field of biosafety. The \$38.4 million scheme is helping up to 100

countries develop the scientific and legal skills needed for evaluating the health and environmental issues surrounding imports of so-called Living Modified Organisms (LMOs), as they are known under the Protocol.

For further information visit: www.biodiv.org/biosafety



Appreciation: Dr. Leslie Herath

by Prasantha Dias Abeyegunawardene

SACEP with deep regret announces the passing away of its founder Director Dr. Leslie Herath in March this year after a short terminal illness.

Dr Herath was appointed as the Pro-Tem Director of SACEP in February 1981 and became its first Director in July 1982, when the organisation became a legal entity.

During his tenure, Dr Herath took many bold steps to keep SACEP thriving. He had the foresight to see any looming problems and took adequate measures to circumvent them. A classic example is the establishment of South Asian Seas Programme, where India was showing some hesitation. He sensed this and took steps to obtain the approval & blessings of the Indian Prime Minister for the programme.

He, along with his close friend Dr. R. D. Deshpande, was instrumental in initiating the review process of SACEP in 1982 with UNEP-ROAP's assistance, of which SACEP and the South Asian Seas Programme are now reaping benefits. He also took a lead role in the setting up of the South Asian Environment and Natural Resources Information Centre (SENTRIC), now functioning under the SACEP umbrella.

My association with Dr. Herath dates back to July 1983 when I first joined SACEP. As a boss, he was personally concerned of the well-being of his entire staff and stood by them in good times and in bad. Even after finishing his tenure at SACEP, he had its interest at heart. The last official SACEP function, which he attended, was the 2nd Inter-governmental Meeting of the South Asian Seas Programme and I still recall him telling me "*Prasantho (that's how he called me), I am very happy that what we strived for against immense difficulties is now bearing rich fruit.*"

Our condolences go out to his wife Pauline who was his constant companion and his three sons.

May he attain Nibbana.

Strategy and Work Programme for SACEP

SACEP is currently engaged in a process to review past and present activities to identify strengths and weaknesses to develop avenues and mechanisms to increase SACEPs' impacts and visibility in the region. The origins of this review was based on an evaluation by the SACEP Governing Council in 2001. Initially a 3 member panel conducted an external review in June-July 2002, and the recommendations were generally endorsed by the SACEP Governing Council. Building on this, a Strategy and Work Programme for SACEP up to 2008 is being prepared. Towards this end, opinions were gathered (through a questionnaire) and consultations were held with members from

SACEPs' Governing Council and Consultative Committee, National Focal Points, International Organisations and Funding Agencies. The work programme focuses on administrative and financial needs, strategic directions, project areas and opportunities for networking and collaboration.

Mr. R. Rajamani, former Secretary, Environment and Forests, India was appointed as the consultant to prepare the strategy and work programme. This process was made possible through funding from UNEP.

As SACEP commemorates 21 years of work in the region, the next issue of SACEP NEWS will highlight its future directions.

Share your news with us

Please feel free to write to us with your comments, letters or articles. You are also welcome to submit your name or the names of your colleagues to our mailing list.

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The Mission of SACEP is to

promote and support the protection, management, and enhancement of the environment of the countries of South Asia collectively and co-operatively

For further information about SACEP please visit our website: www.sacep.org

The Newsletter does not necessarily reflect the official views of the contributing organisations.

UPCOMING EVENTS

Training Programme and
Installation of Air Pollution
Monitoring Station
27 July - 2 August, 2003
Malé, Maldives

Regional Refresher Course on
Wet Deposition Monitoring
4 - 9 August, 2003
New Delhi, India

SACEP National Focal Point
Meeting
4 - 5 September, 2003
Kathmandu, Nepal

Training Programme and
Installation of Air Pollution
Monitoring Station
8 - 12 September, 2003
Iran (Tentative)

Asia Pacific Workshop on
Compliance with and
Enforcement of Multilateral
Environmental Agreements
14 - 19 September, 2003
Colombo, Sri Lanka

IMO Regional OPRC Level 2
Training Course
22 - 26 September, 2003
Colombo, Sri Lanka

IMO National OPRC Level 3 -
Contingency Planning Workshop
29 September, 2003
Maldives

3rd Special Session of the SACEP
Governing Council
13 - 14 October, 2003
Thimpu, Bhutan

IMO National OPRC Level 3 -
Contingency Planning
Workshop
27 - 31 October, 2003
Bangladesh

IMO National OPRC Level 3 -
Contingency Planning
Workshop
25 - 28 November, 2003
Pakistan (Tentative)

National MARPOL/Ship
Recycling Workshop
December, 2003
Bangladesh (Tentative)