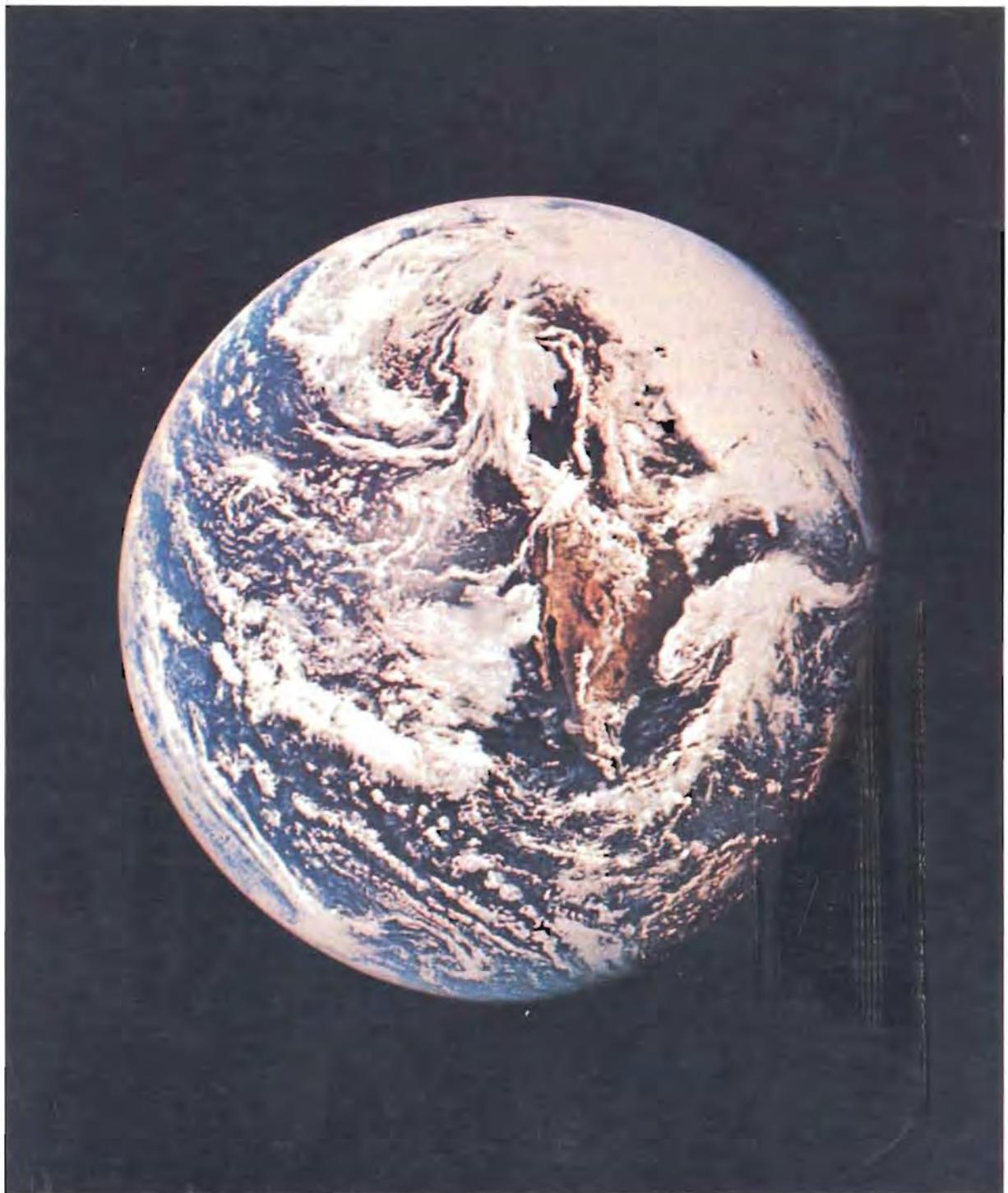


the Sea a heritage to share



South Asian Seas



The boundaries shown on all maps in this publication do not imply official endorsement or acceptance by SACEP.

THE SEA

A heritage to share

The world is more a planet of the sea than of the land. The ocean covers more than seventy per cent of the surface of the Earth. It is a dynamic medium, a continuous eco-system, an indivisible resource.

The interdependent movements of ocean and atmosphere determine climatic flows around the globe. The sea - its mass acting as a buffer against drastic weather fluctuations - is a stabilizing influence on the climate. The dissolved gasses of the ocean help to balance the composition of the air we breathe.

The sea is also the home of countless forms of animals and plants - including some of the world's most unusual mammals. Microscopic sea plants produce about a quarter of the world's oxygen. The creatures and

vegetation of the sea constitute a vast resource on which human beings are becoming more and more dependent.

The wealth of the ocean - its fish and the habitats on which they thrive - are always in a state of motion, recognises no human boundaries. There is therefore, a compelling need to manage the seas with care: both in harnessing it for food and in using it as a 'repository' for our refuse.

Some species of animals and plants of the sea have already become endangered because of both over-exploitation and pollution. It is now becoming quite clear that the capacity of the sea to absorb wastes is not unlimited. We can also no longer treat the sea as an inexhaustible reservoir of resources.



We are destroying the land - It's fertile top soil and forest covers - faster than we are replacing or conserving it. The ocean might, quite well, prove to be more useful - or necessary - than we would think.

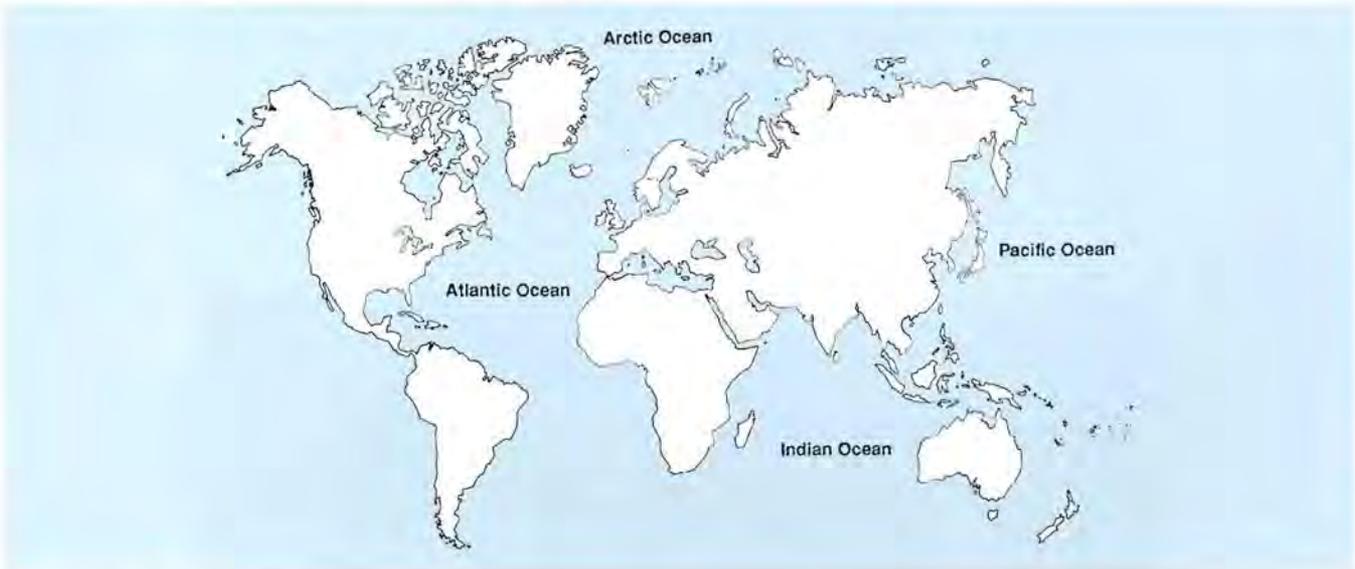
The sea is the dumping place for most of the world's waste material: about 20 billion tonnes a year. Almost 90 per cent of this mostly untreated, frequently toxic, refuse remains for years in coastal waters. This disrupts, and often destroys, these most productive breeding grounds of fish and other forms of marine life. The threat to the coasts and the oceans by increased pollution - thoughtless, irrational and sometimes accidental - has become a serious one.

It is clear that marine pollution is not caused by activities carried out directly in the oceans alone. About four-fifths of the pollution that invades the seas comes

from the land - mainly sewage, industrial waste and coastal mining, energy production and ocean-going vessels.

More than two-thirds of the world's population live within 80 kilometres of the coast, and almost half the world's cities are built on or near an estuary. Environmental degradation is caused by industrial installations, the development of the tourist industry and by the growth of settlements and cities.

The effects of developmental insensitivity are now clearly visible in the extremely sensitive coastal areas: the nearshore and territorial sea zones. Coastal eco-systems are an extremely valuable resource. It is perhaps not surprising then, that they are seriously threatened by human activity and interests.



Fishing Activities

For fishermen in particular, things are very serious. Most of the world's fishing catch - as high a measure as 90 per cent of it - comes from coastal waters. Pollution of the seas has now reached proportions excessive enough to seriously threaten this catch. Fish is the major source of animal protein in many countries. In Asia, for example, it accounts for 55 per cent.

Environmental problems, particularly in the vulnerable coastal areas, are rarely confined to one nation alone. Substances introduced to the environment cross national borders and territorial waters with total

impunity. Most of the sea's pollution show up in coastal waters and often have specific regional characteristics.

It is essential that our coastal waters, on which so many people depend, are kept safe.

The behaviour of both individuals and institutions contribute to the nature and extent of environmental damage. Each country's pollution can degrade the environment of it's neighbour. Therefore, international co-operation and strategies are as important as national measures to combat pollution.

SAVING OUR SEAS

What then, would be the prescription to preserve the health of the ocean? How do we design a formula which would help save our seas from destruction?

There is little doubt that we must control what we dump into the ocean and what we take out of it. But it is also

clear that we must understand more about how our marine environment and ocean systems work. We must learn more about the consequences of ocean pollution. We must find alternatives for our existing negative practices.

THE REGIONAL SEAS PROGRAMME

The UN Conference on the Human Environment held in Stockholm in 1972 recognized the vital importance of the ocean for humanity. UNEP, the United Nations Environment Programme, was created by the UN General Assembly in December 1972. From its inception, the health of the seas was one of UNEP's main concerns.

The Stockholm conference had recognised the need for regional co-ordination in controlling ocean pollution.

This was also endorsed by the governing council of UNEP. The Regional Seas Programme was established in 1974. Its first programme covering the highly polluted Mediterranean was drawn up by a task force of scientists and officials and was set up in Barcelona in 1975. The Regional Seas Programme is managed by the Ocean and Coastal Areas Programme Activity Centre of UNEP.

THE ACTION PLAN

For each region, UNEP adopted a strategy which included an Action Plan to tackle both the causes and consequences of environmental degradation in the coastal areas.

All the components of the plan are interdependent. It is a frame work for action which would contribute to both the protection and the continued development of the region. Each activity is intended to help governments strengthen the process of environment policy formulation and to improve the quality of information on which they are based.

An Action Plan outlines scientific research activities which include assessment and management. A legally binding Convention is drawn up embodying general commitments. Protocol to deal with specific issues such as dumping and ways of co-operating in pollution emergencies and conservation activities are discussed and agreed upon.

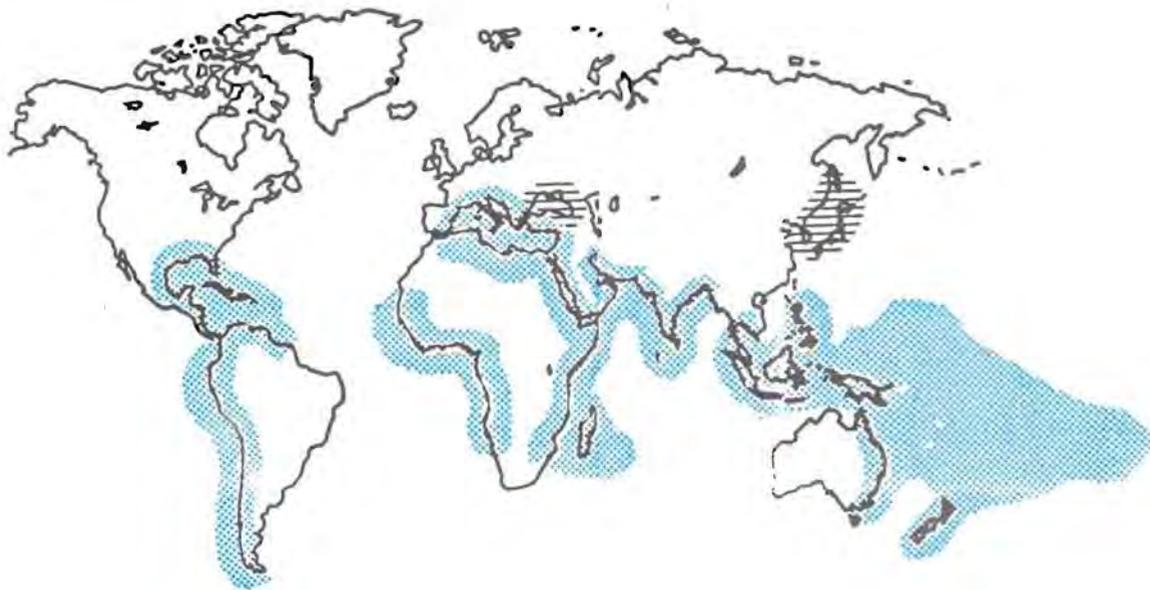
UNEP works with governments in the formulation of an Action Plan. Once it is adopted, national institutions are nominated by governments to implement the programme. UNEP provides the initial finance to launch programme but expects governments to gradually take over the financial responsibilities.

A Regional Seas Programme, then, can be divided into four parts:

- * Assessment
- * Management
- * Legislation and
- * Support resources

The success of the Regional Seas Programme so far has been attributed to the fact that each action plan reflects a region's particular priority, needs and ability to manage its environmental problems.

THE PROGRAMMES



Map Showing Existing Regional Seas Programme

The thirteen regional seas programmes now under development or in operation are; The Mediterranean, The Kuwait Region, The Wider Caribbean, West and Central Africa, Eastern Africa, East Asia, Red Sea and

Gulf of Aden, South Pacific, South-East Pacific, South Asia, the Black Sea, The North-West Pacific and South-West Atlantic.

THE SOUTH ASIAN SEAS PROGRAMME

The South Asian Regional Seas Programme includes Bangladesh, India, Maldives, Pakistan and Sri Lanka. It is one of the most highly populated regions in the world, and coastal marine pollution is becoming a serious concern.

The seas of the South Asian region include the Arabian Sea, the bay of Bengal and the Andaman and Laccadive Seas which all belongs to the Indian Ocean.

These seas are polluted with sewage, oil, food processing wastes, mine tailings, siltation from agriculture and coastal development, and from sea salt extraction and thermal effluents. The most significant contaminants are bacteria and viruses arising out of human activities.



MEMBER COUNTRIES
AFGHANISTAN
BANGLADESH
BHUTAN
INDIA
IRAN
MALDIVES
NEPAL
PAKISTAN
SRI LANKA

MARINE MEMBERS
BANGLADESH
INDIA
MALDIVES
PAKISTAN
SRI LANKA

Map of South Asian Seas Region

The Indian Ocean contains the world's biggest oil tanker traffic. It is estimated that about 35,000 tonnes of oil are discharged each year into the open sea in the Western Indian Ocean, including much of the South Asian Seas region.

The South Asian Seas programme was launched as result of initiative taken by the South Asia Co-operative Environment Programme (SACEP) and the concerned Member States. UNEP together with SACEP and the governments of the region formulated a plan of action in the context of the Regional Seas Programme.

In the preliminary phase of the development of the South Asian Seas Action Plan, UNEP's Ocean and Coastal Areas Programme Activity Centre in co-operation with the Government and the scientists of the region prepared and published national reports on the



marine and coastal problems of the countries involved. On the basis of those reports a regional overview was also prepared and published. Countrywise areas of concern covered in national reports are stated below.

BANGLADESH



"Coastal Mangrove Forest of Bangladesh"

Bangladesh, with a population of 111.4 million, is the most densely populated country in the world. Growing numbers of people exert increasing pressure on the country's limited resources. Bangladesh is also subject to severe weather conditions: the country is regularly devastated by heavy monsoonal rains and by cyclones.

Mostly the township and human settlements of Bangladesh do not have domestic waste treatment

facilities; sewage and effluents are discharged to the adjacent sea or estuaries.

Industrial development is increasing in the Chittagong area, along the Karnaphuly river and in the Khulna industrial zone. Untreated waste has been identified as the cause of Bangladesh having the highest rate of faecally-transmitted diseases.



The marine environment is the great global common, playing a vital role in the functioning of the biosphere. Bangladeshi fishermen prepare their nets before setting sail from Cox's Bazaar.

The country has a good reserve of natural gas and a number of gas based fertilizer factories have been established. They have been found to release untreated effluents into water-ways frequently killing fish.

Localised oil pollution has been found to be heavy in the regions of the Chittagong and Chalna harbours and there have been frequent sightings of oil slicks in the territorial waters of the country.

The most noticeable environmental concern resulting from coastal tourism has been the high quantity of corals collected for sale.



The Chittagong Port handles nearly 1000 ships and forty oil Tankers annually

INDIA



In India, mangroves are extensively cut for fodder and firewood destroying the habitat of various species of fish which depend on them. Mangroves also contribute to coastal productivity and stability and their removal is likely to cause flooding.

The north west and south west coast of the country contain coral reefs and atolls of great significance. These areas have been declared as endangered zones out of bound for commercial activity, However, due to oil pollution from heavy tanker traffic and the collection of coral for ornamental purposes, some of the coral reefs have already been damaged.

Because of increasing population, urbanisation and industrialisation, the volume of sewage and industrial waste in India is constantly on the increase. Many of the country's rivers have now become heavily polluted.

Of the large number of highly populated cities, only 42, with a population of over 100,000 have arrangements for sewage treatment. The result has been high counts of bacteria have been detected on the beaches and in the coastal waters. India has a long coastline of a little over 2 million kilometres.

The country also has a developing off-shore oil exploration programme. The volume of drilling mud and it's oil content is still not accurately known.



Fisherman in the Bay of Bengal

MALDIVES



Tourism - Maldives

The Republic of Maldives is an archipelago of 22 coral atolls comprising of 2,000 Islands, spread over a million kilometres in the Indian Ocean. The country is acutely dependent on the marine environment for its survival and marine resources for its sustenance.

The island surface consists of coral sand with scarcely any topsoil which does not encourage vegetation other than coconut palms and scrubs.

The main industry of the country is fishing and fish is the most important component of the Maldivian diet. The annual export value of fish accounts for 90 per cent of the country's foreign exchange earnings.

The collection of certain species of coral for sale as souvenirs - both for commercial and non-commercial purposes is causing the localised degradation of the exploited habitats.

Mining for sand has been practised for a long time but the more recently introduced coral mining for construction purposes is causing increased erosion and changing the pattern of the sea currents. Other development activities that create threats to the environment include land reclamation project based on the filling of reef flats.

The islands of the Maldives are transient: growing and eroding at a rapid rate. Some large islands, once populated, have completely disappeared.

Although Maldivian society had learnt to co-exist with nature in a rational way the more recent commercial exploitation of resources and an accelerated pace of development have begun to alter this picture.

PAKISTAN

Pakistan has a coastline of about 825 kilometres bordering the Arabian Sea. Although the country is not located directly on international shipping lines, a fair amount of oil pollution reaches it's coast. The waters of the Manora Channel where the Karachi port is located is the most affected by oil contamination. The effects of oil pollution on marine life is most evident in the Karachi harbour area.

There are several sources of sewage and garbage on the coast. Raw sewage and untreated effluents enter the Manora Channel from several drainage outfalls. The discharge of garbage and human wastes find itself into the open waters of Karachi. Dumping is also carried out by vessels awaiting entry to the harbour.

Exploration for oil and gas on the continental shelf causes a fair amount of pollution in the marine envi-

ronment. Some of the drilling activities have also been found to disrupt the sea bed.



Shark landed with her unborn young in the Karachi harbour

SRI LANKA

Along the 1,500 kilometres coastline of Sri Lanka, there is a concentration of human settlements, urban centres, commercial and fishing harbours and tourist hotels which violate the fragile eco-system of the coasts.

The major change in the environment has been the loss of land due to erosion - not just because of indiscriminate coastline construction but also because of the mining of sand and coral.

Dynamiting - which has been found to cause severe reef destruction - is also being used as fishing technique.

In Sri Lanka, there is a major concentration of about 20,000 industries around the main urban centre, Colombo. Most industries do not have the facilities for the proper separation of sediments and waste material from the effluents.

The dumping of industrial refuse and domestic sewage have affected the quality of three or four thousand hectares of mangroves. Mangroves are a vital buffer for shoreline and river bank protection from winds, currents and erosion. They are also threatened because of their exploitation for fuelwood.



Ecotourism (top) and Coral collection (bottom) in Sri Lanka

AN OCEAN THE FUTURE

It is essential that marine resources - food, minerals and energy - are used in a rational way and the marine environment is conserved without giving into short-term development imperatives.

The crisis of the ocean is both ecological and political. There is agreement among nations that pollution should be prevented and controlled. But there continues to be disagreements both at national and international levels about priorities, mechanisms and finance.

The regional seas programme has helped create agreements and consensus among nations in the solution of marine pollution problems based on sound scientific advice - in many parts of the world.

Through lack of understanding - and even misunderstanding - we have been jeopardising our marine resources and degrading and disrupting our marine eco-systems. With a better understanding about the ocean we will learn how to benefit from the resources and 'services' it offers in a sustainable way.

While Marine States in South Asia are alive to the problems and have been taking several measures through various policies and programmes, the South Asian Seas programme will give a new sense of direction and approach to this issue.

The South Asian Seas Programme will attempt to save the seas of our region from degeneration and ensure that the ocean remains a heritage to be shared by future generations.

UNEP
REGIONAL SEAS PROGRAMMES

