

Feature Environment

Karotoya: The Fate of an Endangered River

by Monwar Hossain

THE Karotoya river heavily polluted by distillery wastes at Panchagarh is quietly destroying the vitals of agro-production in thousands of acres of land in the northern region of the country.

The Karotoya river enters Bangladesh at its north-western most corner and flows by Panchagarh town to meet the Atrai river, a few kilometers down. From there, the joint flow of Karotoya-Atrai moves southwards to discharge itself into the mighty Jamuna.

The principal cause of the Karotoya water pollution at Panchagarh is the liquid waste discharged into the river by Jazz Distillery. In early 1987, the waste released into the Karotoya caused large-scale death to the fish population. Since then fish population in this part of the Karotoya in Panchagarh district is absent.

Besides, during the last four years, aquatic grass and shrub, earthworms and frogs disappeared from the river. In fact, about one kilometer of the river from the distillery plant site has virtually become dead.

The effluents of distillery contain high oxygen-sucking and degrading elements in liquid form which destroy nutrients for fish and vegetation making the water acidic and oxygen-starved and destroying the fertility of soil. As a result, fish and other aquatic lives cannot survive and vegetation growth stunted without or with little bearing capacity.

Dr. Ikhtyar Omar, Professor of Chemical Engineering of BUET, said that Biochemical Oxygen Demand (BOD) in the distillery waste is in between 60,000 to 80,000 mg/litre. The distillery waste mixed with water absorbs all oxygen molecules present, leaving nothing for aquatic lives to survive.

Besides, distillery waste is highly acidic (pH varies from 2 to 3, pH of neutral water is 7). It quickly acidifies water or soil when it comes in contact with them. Highly acidic water or soil is always damaging to the reproduction and growth of fish and shrub vegetation like paddy. Dr Omar stressed that, this has been the case at Panchagarh. The distillery plant caused the water of Karotoya river to turn acidic and oxygen-starved.

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At the first thrust of chemical reaction, fish population in the river died. Now the soil on both sides of the Karotoya is becoming acidic, as the river water feeding the surrounding land is also used for irrigation by the farmers. The effect of this soil condition is seen in the paddy and sugar-cane grown on the land on both sides of the river in Panchagarh.

This reporter while visiting the outskirts of Panchagarh, about 500 kms north-west of Dhaka city, found that paddy grown in the field is not healthy (as it should be) and turned yellow, although the ripening time is still two months ahead. The same was the condition of sugar-cane grown around. Top-dying of most of the sugar-cane bunch was visible. The colour of the water was different from the normal colour of river water.

Local people said that quality of river water improves during

the monsoon as the water from the upper reaches flushes the distillery waste down. But during the dry season, the water of the river becomes turbid and assumes 'khatry' (like chocolate) colour. There is no fish in the river, frog is not seen even in the monsoon. Bovine animals do not graze near the river banks as grass is very short and seemingly not suitable for the consumption of the animals.

Agriculture extension officers and the Department of Environment Pollution Control said that this condition of the vegetation was caused by oxygen-starvation and high acidity of the Karotoya river. The Environment Pollution Control Department in a report said that waste discharged by the Jazz Distillery is polluting the Karotoya river water.

Sources in the Water Development Board (WDB) said that variation between the dry and wet season flows of Karotoya-Atrai is wide. The mean average flow of Karotoya-Atrai is around 54 cubic metres per second in the dry season and 279 cubic metres per second in the wet season. The river is very important as agriculture in a vast area in the northern region is largely dependent on its water. The 370-mile-long Karotoya-Atrai serves an area of 2500 square miles. Active pollutants in the upper reaches of

the river are carried down by the water flow. So water and soil pollution do not remain confined to a particular area. An agronomist in the Bangladesh Agriculture Research Council (BARC) emphasised that polluting wastes released in the upper reaches of the Karotoya-Atrai are definitely affecting the fertility of soil on the banks of the river. Polluted water is penetrating deep inside the land quietly due to natural process. The effect of this pollution is not seen instantaneously, because of monsoon rainfall which dilutes the concentrated waste to a large extent. But monsoon does not last more than three months. For the rest of the year, the pollution process continues actively. So the effect of pollution on the vegetation on the ground and aquatic lives would be definitely visible in the wider areas along the Karotoya-Atrai in the near future. We should be cautious about the disaster emerging quietly, the agronomist said.

Local people seem to be indifferent to the danger of pollution. This reporter did not notice any attitude of protest in them against the danger caused by the distillery. This might be due to their ignorance as illiteracy is rampant in this part of the country. While talking to them, many said that they are now taking their livestock to places far from the river bank for grazing as the animals do not eat the grass grown along the river banks. Some of them said that they used to net fish during their leisure time in the past. Now the question of catching fish does not arise due to non-availability of fish in the river. Some others said that they are not getting the desired harvest of paddy. During the last two years, per acre yield of rice has declined to a halt.

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Indian Farmers Assert Collective Rights to Third World Biological Diversity and Knowledge

by Vandana Shiva

ON 15 August, India's Independence day, farmers throughout the state of Karnataka gathered with traditional drums and trumpets at the offices of the District Collector (DC) in each District to assert collective intellectual property rights (Sanad) to biological knowledge and to ask the DC to pass on the Sanad to the Chief Minister and Prime Minister for guiding negotiations. The object was to counter

of collective innovation. The assertion of collective intellectual property rights (CIPRs) made by Indian farmers also poses challenges to the IPR frameworks pushed by the North in multilateral platforms such as the General Agreement on Tariffs and Trade, and the Trade-related Intellectual Property Rights (GATT-TRIPs), the US interpretation of the

understanding how the use of commons is strictly regulated and limited. This failure to understand that commons are both socially as well as environmentally bound led to Garrett Hardin's much celebrated but totally misplaced Tragedy of the Commons.

CIPRs are a recognition that knowledge is a social product. The farmers proclaim in their

cal products. Patents are private property rights, which in the area of living systems lead to the ethically outrageous position that biological organisms and their parts and products can be owned as private property and hence can be exploited and manipulated without limits for increasing profits.

CIPRs, in contrast, are a collective, custodial right which on the one hand reaffirms the social and community nature of innovation and on the other hand state the responsibility to protect biological wealth along with the right to use it for human needs of sustenance.

CIPRs are common to a community, while they exclude pirates. IPRs are based on piracy. IPRs allow space for ecological and ethical limits. IPRs have no room for such concerns and are only aimed at protecting corporate profits.

The farmers' Sanad at the District Centres were assertions of their rights, not a memorandum of demands asking the state or corporations for favours or concessions.

The assertion of CIPRs has a potential to change the content and implications of TRIPs, especially article 27, which according to India's Commerce Minister needs an amendment to protect farmers.

This particular demand has come in response to the statement by John Hamilton, the Chief Executive Officer of Cargill Seeds in India, that Cargill is a 'source' of improved genetic material. Indian farmers have responded saying that Third World farmers are the source of all parent material.

The farmers' movement on seed issues, called the 'Seed Satyagraha', is an attempt to clarify that when it comes to matters of biodiversity and knowledge of the properties and utilisation of biological resources the real source is Third World communities. They see the denial of their prior collective rights to their biological wealth and knowledge based on it as theft and piracy. Protecting themselves from this piracy is the new meaning to freedom that they are giving in the era of 'free trade'. — Third World Network Features

Challenging Northern corporations' attempts to rob the Third World of its biological diversity and knowledge by putting them under patents, Indian farmers have asserted collective intellectual property rights over such resources and knowledge.



Indian farmers gather at Mysore in Karnataka state to assert their collective intellectual property rights to agricultural innovation.

The intellectual property rights claims of northern corporations which are using Third World biological diversity and Third World people's agricultural and medical knowledge of plant properties for their manufacture of proprietary products like pesticides and pharmaceuticals.

Carrying branches of the neem tree (sadirichtur indica), they challenged the rights of US corporations like W R Grace to hold patents for neem-based pesticides, since both the tree and knowledge of its pesticide properties have originated in India. Biological resources like neem and knowledge of its utilisation in health care and agriculture are the collective heritage of Indian farmers and healers, built up over centuries

Biodiversity Convention as well as in unilateral threats of the Special 301 clauses of the US Trade Act. Firstly, CIPRs as articulated by Third World farmers' organisations are different from the 'common heritage of mankind' categorisation that the North has used for gaining free access to the South's biological wealth and biological knowledge. The concept of collective rights and common heritage is defined with respect to communities acting within ethical and ecological frameworks of limits and reciprocity.

Free exchange within a community sharing a commons does not allow free access to those outside the community. To translate local common rights into global free access is part of the Northern flaw in un-

slogan that their knowledge is protected by a 'Samuhik Gyan Sanad', a collective knowledge patent. Any company using their local knowledge and local resources is engaging in intellectual piracy, and the farmers' organisations see it as their right to punish the violators of CIPRs in their own village organisations. They will protest against the attempt to snatch away their traditional knowledge, processes and assets and will not be subjugated to the foreign patent holders, according to Professor Nungundawamy, the leader of the farmers' movement.

The concept of the CIPRs of Third World farmers' communities is also a philosophical and ethical challenge to the concept of patents in the area of biologi-

Rediscovering Vietnam's Wildlife

by Chng Soh Koon

WHEN wildlife experts went trekking through some of Vietnam's remote and almost forgotten natural areas, they were pessimistic of what they might find.

Much of Vietnam's forests and wildlife were lost or damaged during the 30 years of uninterrupted war and the chances of finding anything significant were, therefore, low. But much to their surprise, they made some startling discoveries — several possible new species, some of the world's rarest primates and even a herd of wild elephants trapped in a bomb crater.

In one survey alone, of the Vu Quang Nature Reserve in north central Vietnam, close to Laos, the wildlife experts from WWF — world wide Fund for Nature and Vietnam's Ministry of Forestry (MOF) stumbled on a possible new fish species, tortoise, parrotbill, and, most exciting of all, a new large mammal.

"We do not know exactly what the animal is, having seen only the front of the head and horns," said Dr John MacKinnon, WWF's senior Conservation Advisor who co-lead the survey in May this year. "It certainly is a member of the bovid family. The local people call it a forest goat but its horns are quite unlike any of the other goats."

During their three-week foray in Vu Quang, team members didn't see any live specimens. They only saw trophies of the animal in the houses of village hunters, alongside those of the Asiatic black bear (Selenarctos thibetanus), tiger (Panthera tigris) and serow (Capricornis sumatraensis), all of which are endangered.

"The locals hunt the animal for meat and they grind its teeth to use as a tonic. They keep the trophies as prized items to be displayed or sold to visitors," added Dr MacKinnon.

He said that the dagger-like horns, measuring 47 cms, resemble that of the Indonesian anoa (Bubalus quarlesi), a wild buffalo, except that the anoa's are much shorter and more triangular.

Dr MacKinnon brought a specimen of the animal's skin and hair to the USA for genetic comparisons with other bovid species. If the tests confirm it as a new species, it would be the sixth new large mammal found this century.

At the end of the survey, the team had recorded an impressive number of wildlife species in Vu Quang: 62 fish species (41 more than the number previously recorded), 20 species of amphibians, 37 reptile species, 72 larger butterfly species and over 200 bird species.

"We were still adding bird species to the list up to the last day of our survey," said Dr MacKinnon, who described the area as "like a lost world cut off from the rest of Indochina and somehow spared from the war."

A mountainous area with steep narrow valleys and fast-flowing boulder-strewn streams, Vu Quang was declared a national reserve in 1986 originally

as a cultural site in honour of freedom fighter Phan Dinh Phung's movement against the French.

The reserve has not been as thoroughly studied as other parts of the country until the WWF/MOF survey. "Not only did we find the area to have relict populations of rare and endemic species but some really common and well distributed species such as spangled drongo (Dicrurus bracteatus) and black-crested bulbul (Pycnonotus melanicterus) seemed to be strangely absent", said Dr MacKinnon.

horse-back. The survey team spent five weeks studying the area.

The team concludes that although all the animals and plants occurring in Muong Nhe have not yet been identified, its preliminary survey suggests that the area supports many important species.

For instance, of the more than 300 plant species recorded, 68 were found to be used by local people to treat various illnesses. These species include Alstonia scholaris used for de-worming and treating malaria, and Holarrhena an-

Another primate survey in March this year of northern Vietnam located several groups of the endemic Tonkin snub-nose monkey (Rhinopithecus avunculus). All were well outside any protected area, and there was even a young one being kept as a pet in a village.

Scientists have not seen this species in the wild for almost 30 years. There are probably less than 300 of this species left in the world today. The Primate Specialist Group of the World Conservation Union (IUCN)'s Species Survival Commission (SSC) has given the monkey the highest conservation priority.

The Vietnamese government has increased its efforts to protect the animals. It has recently made Cat Ba a national park and is controlling hunting activities. But efforts to protect the animals, other wildlife and the country's natural areas are hampered by the lack of technical expertise and funds.

WWF is already helping the government to revise its protected area system and draft management plans for the selected sites. In addition, last April, WWF sent an expert to assist the Forestry Department to develop techniques for translocating elephants.

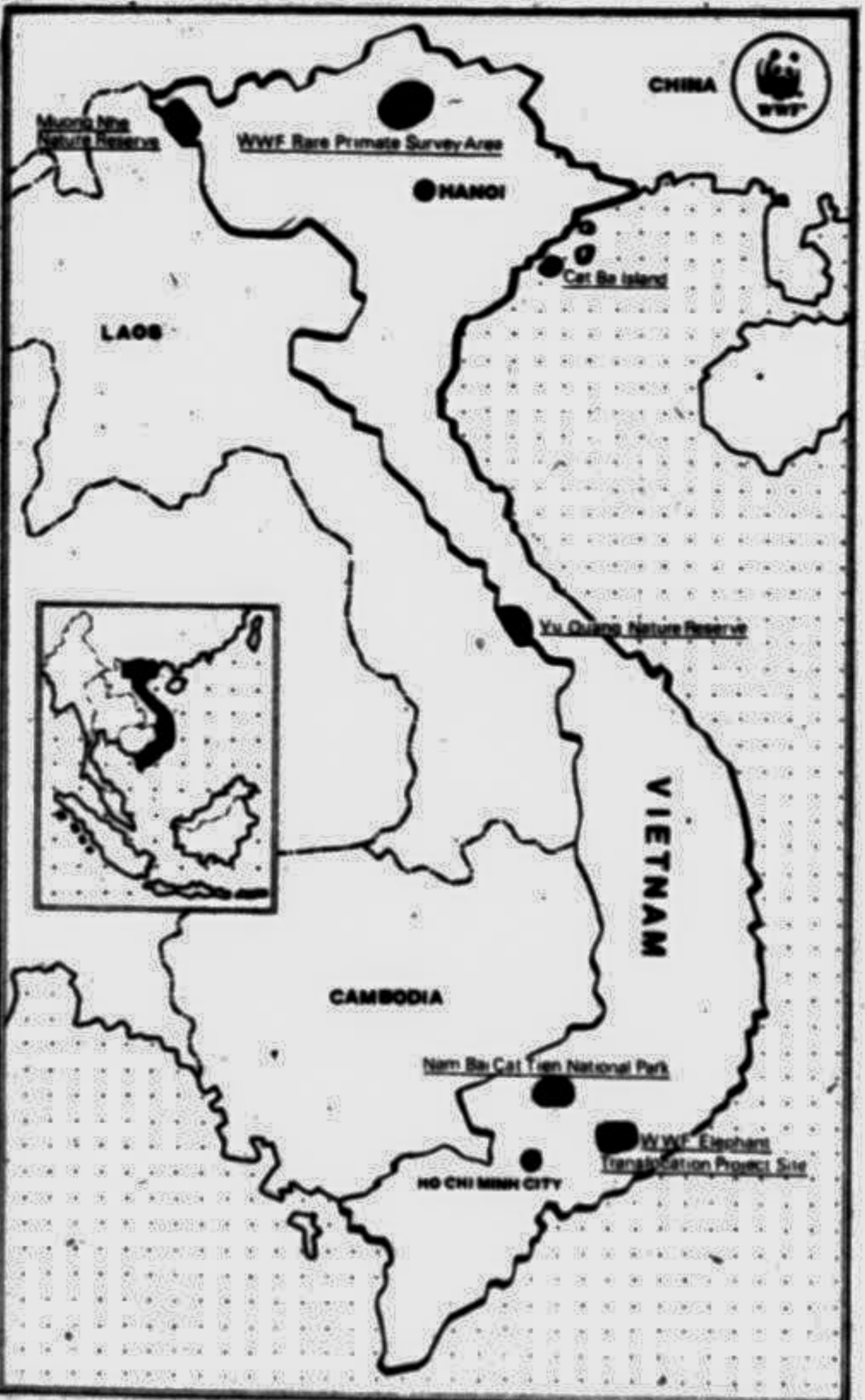
Conflicts between people and elephants are becoming critical in several provinces in southern Vietnam as the expanding population battle with the animals for space.

In two of these provinces, wild elephants are terrorising local villages, destroying gardens, breaking houses and killing people. In January last year, a herd of about 10 elephants completely flattened one house killing a man and his four sons. Altogether, over 20 people have been killed during the elephant raids. The villagers in turn have killed at least ten elephants.

But the villagers are not completely heartless to the elephants' plight. When 11 elephants were trapped in a bomb crater filled with water, over 300 villagers came out in full force to rescue them. All but one of the elephants were saved and returned to the wild. The one elephant which didn't make it had to be shot since after being rescued, it attacked the villagers.

A detailed plan for translocating wild problematic elephants to Vietnam's Nam Cat Ten National Park, which has been proposed as an elephant sanctuary, has been drawn up.

However, until funds are available, this plan and initiatives for managing Vietnam's reserves such as Vu Quang and Muong Nhe will have to be put on hold. (WWF Features)



Over at Muong Nhe Nature Reserve in Vietnam's far north-west, another joint WWF/MOF team, which surveyed the area in November 1991, recorded more than 300 plant species, 37 large mammal species, 222 bird species, 37 reptile species, 9 amphibian species, and approximately 50 species of freshwater fish.

This list is, however, incomplete. "We still have to collect information on the reserve's small mammals such as bats and rodents," said Roger Cox, who runs the WWF field office in Hanoi and who led the Muong Nhe survey. "Studies of the areas near Muong Nhe in the 1960s suggest that the reserve could contain some very interesting species."

Like Vu Quang, Muong Nhe was also declared a nature reserve in 1986. The reserve, which is virtually rugged hills, is only accessible by foot or

Like the elephant, which has been hunted to almost extinction because of the high value of its ivory, the tiger is also threatened by hunting mainly because it preys on domestic livestock and attacks people.

Another survey last May of scenic Cat Ba island in Ha Long Bay observed the world's last wild troops of the white-headed langur (Trachypithecus francoisi poliocephalus), now totally confined to the island.

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Need for Environmental Mapping

by Fayza Haq

A workshop on environmental mapping was recently held at the Goethe Institute, at which a number of papers were read out.

Mr. Haroun Er Rashid, president of Bangladesh POLUSH in his paper said, "The loss of natural resources, particularly trees, fishes and top-soil is of great concern to the environmentalists in Bangladesh. Their concern has been expressed in the National Conservation Strategy, and in the first draft of the National Environment Management Action Plan. However, not much progress has been made in the past two years."

He added, "Environmental Mapping is almost unknown in Bangladesh, with very few attempts having been made and those too were on large scale maps. A map showing 33 areas of environmental concern has been produced but this can only be a sketch from which to begin producing theme-focused small scale maps. We need an atlas of maps, on scales of 1:1,00,000 or smaller, to show where the losses of natural resources threaten substantial economic development and also to illustrate the geographical locations where growing urbanization and industrialization may threaten life-supporting processes."

Golam Monwar Kamal, an environmental scientist from ISPAN said, "The concern for environmental degradation and ecological destruction is a major debate in the western and as well as in developing countries. In Bangladesh also there has been a process of changing attitude towards environmental management and its related policies."

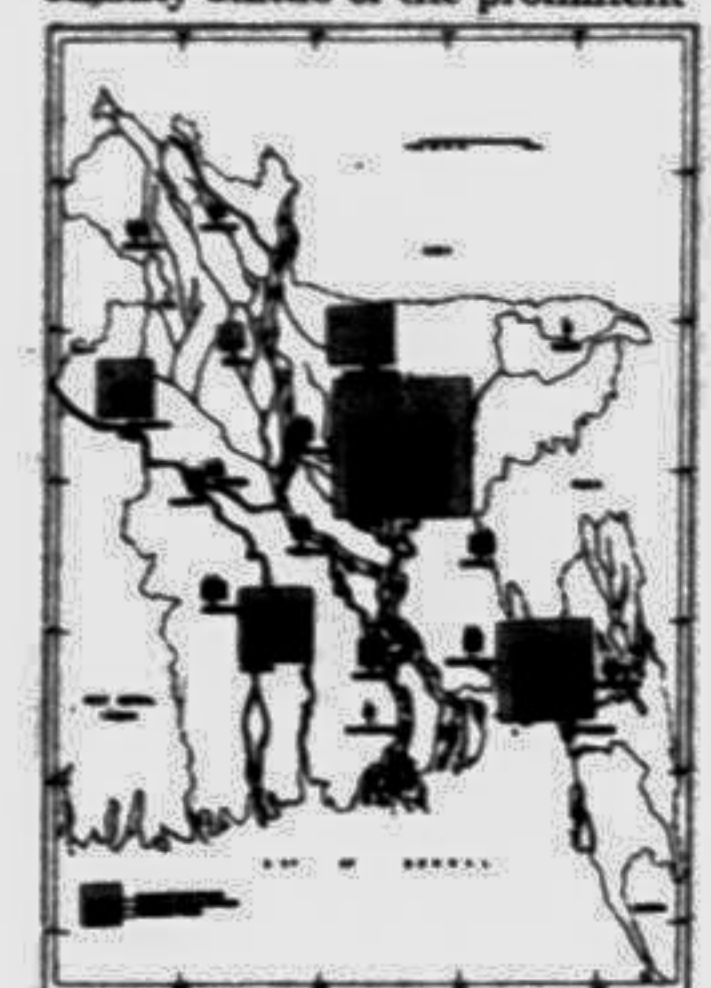
He added, "Environmental management plan needs a multi-sectoral information base. Without enough information, it is always hard to predict the impact and make comprehensive eco-development plan. Remote sensing is the advancement of technology, which provide us an ocean of information source on our earth's environment."

M. Abdus Salam, Director (Tech.) Department of Environment, Government of Bangladesh said, "Environmentalism emerged from the crisis of green house effect and ozone depletion resulting from industrial development in the first world countries. Pollution control was earlier thought to be a reply to such crisis. Environmentalism is now a contradiction between modern economic activity and regenerative capacity of natural

resources. For a sound environment demand-supply relationship between population and natural resources and their regeneration has been thought to be the holistic approach. Having in mind the indirect relationship between statistics and environment, a comprehensive statistical study on the demography and the natural resources, their regeneration, demand, consumption, is necessary for framing policy and programming for environmentally sound sustainable development."

Md. Nefaur Rahman in his paper Mapping of Industries said, "Bangladesh is a poor, predominantly agricultural developing country. Industries in Bangladesh are in a take off stage. It contributes around 12 percent to the GDP whereas contribution of agriculture sector is 46 percent. Agriculture employ about 61.3 percent of

resources. For a sound environment demand-supply relationship between population and natural resources and their regeneration has been thought to be the holistic approach. Having in mind the indirect relationship between statistics and environment, a comprehensive statistical study on the demography and the natural resources, their regeneration, demand, consumption, is necessary for framing policy and programming for environmentally sound sustainable development."



Map showing Distribution of Industries and Environmental Mapping Areas in Bangladesh.

the country's labour force, industry accounts for only 12 percent. Man-land ratio being very low, growth in agriculture is not likely to exceed 4 percent per annum. Industry is the most important sector which could provide job opportunity to the vast number of unemployed people and could help in their economic uplift."

He added, "Industrial development through manufacturing activities is directly associated with hazards to ecosystem. The policy planners need to take into consideration the ecological factors when planning for development."

M. Raisuddin Miah, Chief Chemist, Khulna Power Station, Water Treatment Plant, Bangladesh Power Development Board said "Bangladesh is a riverine country over which so many small and big rivers are flowing. In addition to potable and agricultural uses, the in-

"Bangladesh is one of the most densely populated countries of the world. The present estimated population of Bangladesh is about 115 million with an annual average growth rate of around 2 percent. Wastes, pollution and degradation of environmental quality are related to population, resources consumption and adoption of effective waste management technologies. The densely populated urban centres with unplanned and unregulated residential, commercial and industrial growth lack in adequate facilities for proper disposal of liquid, solid and industrial wastes."

Anisuzzaman Khan, President Nature Conservation Movement, in his paper said, "Based on our (NACOM's) own field observation, research and experiences, we have identified and listed a total of about 950 species of wild fauna (which includes amphibian, reptiles, birds and mammals) from Bangladesh. More than 150 species of wildlife are threatened with extinction and 17 species of wildlife have completely disappeared from the country. Bangladesh has 12 protected areas, including 4 national parks, 7 wildlife sanctuaries and one game reserve, covering an area of about 110,000 ha, 0.75 percent area of the country, gazetted under the provision of Bangladesh Wildlife (Preservation) (Amendment) Act, 1974. Forestry Master Plan, 1992, in their 'Draft Forest Policy Framework for Bangladesh' stated that, the principal aim of the forest policy is to ensure ecologically sound and sustainable development of forest resource (which is renewable), and to support economic development through balanced and appropriate measures of forest resource expansion, conservation, management and utilization with all its backward and forward linkages and involving people in all stages of development. It is important that a rational balance between the ecological and economic roles of forest is established."

Methodology of Eco-Mapping, Application of Environmental Atlas, Role of Remote Sensing in Environmental Mapping, Mapping of Salinity in the River system of Bangladesh, Role of Statistics in Environmental Management, Mapping of Wildlife and Flora of Bangladesh, Mapping of Salinity in the River system, Mapping of Forest Resources, Waste, Pollution and Water Quality Atlas of Bangladesh were the various subjects at the seminar.