

Development today, devastation tomorrow

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MOST of the news about the environment either here in Bangladesh and elsewhere in the world is distressingly bad. Reports on disappearance of forests, destruction of wetlands, death of coral reefs and extinction of other natural resources come with frightful frequency. In Bangladesh we hear of threats to wildlife namely tigers, elephants, birds and forest resources as well as aquatic and marine life. Every year species most of us might never have heard of fade into extinction.

THE environmental crisis that we are in points to one salient fact: "poverty is the greatest polluter." Poor people in our regions have contributed to ecological destruction through everyday practices such as firewood burning. True, they are not being malevolent but are simply living off the simple resources available. This galloping poverty is a challenge to all of us just struggling to survive in an unforgiving environment. Everything is connected these days - the rich and the poor, the environment and the economy. The global environment, both ecological and human, now seems worse than 30 years ago when the first "Earth Day" summit was held on April 22, 1970. Encouragingly, such advanced countries as West Germany, Britain, Denmark, Sweden, etc., but for the world's poorest regions as ours, advancement or in many places simple survival seems to mean being cruel to it.

In most parts of Asia, including ours, firewood gathering has produced deforestation on a vast scale. The Washington-based World Resources Institute estimates that just one-fifth of world's original forest cover remains intact. What happens is that every year hordes of land-starved peasants press deeper and deeper into forest areas, clearing patches of earth by putting torches to the trees or by cutting these down. This has proved to be a self-defeating exercise, since the forest soil is unsuitable for farming. After a few seasons, when the land plays out, the peasants move on, clearing more ground and cutting a swath of devastation across the precious ecosystems.

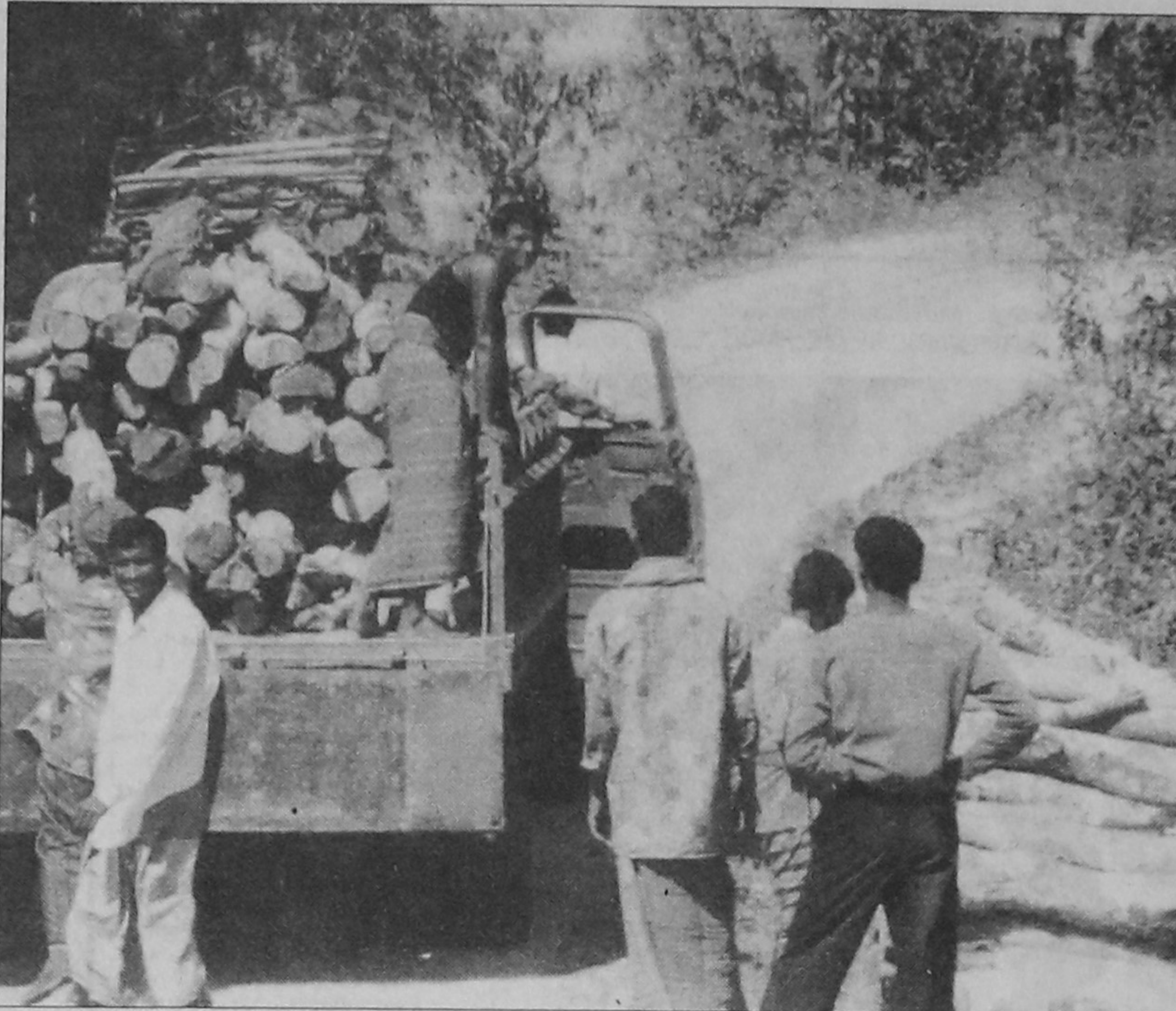
The land is under even greater pressure in our country where a population of 130 million crowds into a river-delta region at the mouth of Bay of Bengal. Rain running off deforested northern hills has badly eroded the soil. Other than this, invisible assault on our forest resources, rampant felling of trees, *jhum* cultivation and poaching in the reserve forest in Pablakhali and surrounding areas of Rangamati in recent times have led to disappearance of at least 37 species of birds including the rare white winged duck, elephants and some other wildlife for good.

Dr. Mohammed Ali Reza Khan, an expert and author of several books on wildlife, indicated while delivering a speech arranged by the Forum of Environmental Journalists of Bangladesh last year that almost 10,000 hectares of the reserve forest of Rangamati that once comprised 60,000 hectares have already disappeared. Along with it are gone the massive civet trees about 150 feet in height, sunder and garjan trees. Reports have it that the forest was being gradually destroyed as people from the plains were settling there after it was declared a sanctuary in 1983. The report further says that out of 80 species of birds discovered in the Rangamati forest in 1980, only 43 species including owls and common mainas were found. Fish population in the wetlands has also declined. Tetapia, an alien species, as we all know, now dominates the wetlands harming the native species of fish. Indiscriminate felling of trees or plundering the forest without permit and payment of revenue to the proper authorities are going on unabated. Forest department officials seldom venture out to the ranges beyond their beats. Reports have it that in August last year while a lot of 17,000 cubic feet of teak, all properly sized, were being smuggled out from Baghaihat forest, intervention by the law enforcers brought this illegal move to a halt but these seized timbers worth millions of taka were being wasted.

Home to 330 species of plants, over 270 species of birds, and 42 species of mammals including the majestic Royal Bengal Tiger and the spotted deer, the Sunderbans is under assault. The biggest mangrove forest in the world that once comprised 10,000 square kilometers is now left with only half of that. Once the rulers of their forest home, the tigers are now prisoners of human intruders and disappearing faster than any other large mammal. Inside the forest, they are succumbing to poaching and relentless pressure of human population growth around the forest territory. Almost four million people now depend directly or indirectly on this forest for their livelihood. Over-fishing and over-exploitation of plant and wildlife species are placing increasing amount of stress on the viability of this delicate ecosystem. Other than logging slash-and-burn practices resorted to by a group of criminal gang of businessmen, illegal quarrying has stripped the earth of its foliage, which like deforestation loosens silt that eventually clogs the rivers and waterways and worsens flooding. Environmental reports say silt has caused the bed of China's Yellow River to rise by more than four metres over the past four decades. In almost all places, including ours, greed, shortsighted environmental policies and corruption cause much of the damage. Perhaps the worst culprit is the indiscriminate logging, much of it illegal, around watersheds. As already mentioned cutting trees loosens the topsoil reducing its ability to retain liquid. Such indiscriminate felling of trees from natural forests has been stopped in the neighbouring country India by an order of the Supreme Court. The court order banned felling of trees in all "natural forest areas" except under state working plans and suspended the running of saw, plywood and veneer mills making central clearance mandatory under state governments for their operations.

The recent move by the government to introduce an act banning felling of trees in the natural forest brings hope that situation in Bangladesh will change for the better. However, people would be happy if the apex court of the country played the jungles' messiah. In a situation when the forest cover of the country has come down to just seven percent in place of the required limit of 25 per cent, the bill to be passed by the parliament will come as a long overdue panacea for deforestation. Experts have ruled out the sceptics' apprehension that the economic fallout in the wake of such ban on felling of trees for some years will be that great. In fact successful social forestry

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schemes will take care of the locals' requirement for firewood and other products.

The situation, not only in Bangladesh but also around the world, is assuming serious proportions. Much of the world's land is too rocky, arid or salty for agriculture. Forests that haven't already been cut deserve protection: they harbour the habitats of earth's endangered wild life. This has to be done because we are not yet aware of the full dimensions of this biodiversity and the problems that lie ahead of us. Fewer than two million species of animals, plants and micro-organisms have been identified. Yet tens of millions more may exist - in oceans, rainforests and everybody's gardens. In fact, nature does not seek to make a connection with us, nature does not care if we live or die. The hard truth is that we can't survive without the oceans or the forests, for example, but they can do just fine without us.

Speaking about the forests, home to two-thirds of all species, forests temper climate and capture and store water. Their timber has been a springboard for economic development. Forest stores 40 per cent of terrestrial carbon and can slow the build up of carbon dioxide in the atmosphere. Deforestation in mountains can worsen floods in grasslands or agricultural lands below, as was the case in China and more recently in Madagascar. Humans have hurt coastal and marine ecosystems directly by draining wetlands, cutting mangroves, trawling oceans for fish, and destroying reefs and lagoons. Besides, we also damage these ecosystems indirectly as rivers transport to the coasts the effluents and by-products of agriculture, industry, urban areas, logging and dams. This interference with our ecosystems brings in its wake serious catastrophes. That means man-made climate change threatens all coastal areas, as melting glaciers send more water seaward and the warming and expanding of the oceans cause sea levels to rise. Vast coastal areas in the US, India and Bangladesh may someday be inundated and entire islands of Kutubdia, Sandwip, Hatia in Chittagong region as well as coastal areas in Bhola, Patuakhali and Khulna region could disappear beneath the waves.

The extinction of forests has come in the wake of unprecedented population boom, especially in the Third World. Much of the land becomes less arable by the minute, assaulted by urbanisation, chemical pollution, desertification and overuse of limited water supplies. The exhaustion of land in many areas has created a new class of displaced person known as "environmental migrant." While wars so long have always been fought over territory, the future may see "green wars" triggered by shortages of such basic resources as topsoil or water. Let us look at the trend of phenomenal population growth. It took the species about 150,000 years of fits and starts to reach one billion-mark around 1800. Since then an additional five billion have been added to the headcount and if trends continue, the population could pass 10 billion before the middle of this century. One consequence is certain - this would cause an unavoidable pressure on woodlands, especially the tropical

forests that are reservoirs of the majority of the earth's animal and plant species. Between 1980 and 1995, experts indicate, an estimated eight per cent of the world's tropical forest cover was cut, burned or otherwise destroyed. The loss of such irreplaceable biological treasure is disturbing, especially if we consider that the impact of deforestation goes far beyond the felled trees. As already mentioned, as a region loses its forests, it loses its ability to trap and absorb water, and so run-off from denuded woodland worsens the natural process of soil erosion. If at the same time, farmers harvest crops year after year or make intrusion into the existing forests either by *jhum* cultivation or by felling trees or by burning jungles, the soil is constantly exposed to wind and water. The result: the world wears away 24 billion tonnes of topsoil a year. When dry areas are worn down by the wind, by intensive farming or by the hooves of too many grazing animals, the region may eventually become a sterile desert, a fate that has befallen 30 per cent of the world's drylands. Three quarters of dry lands in Africa and North America are in some stages of desertification.

Now efforts are underway to right some of the wrongs. It is time to put environment or ecosystems at the centre of decision making in government, industry and the home. Examples are there. China, whose factories spew out poisons that fall as acid rain on its neighbours, is cutting back on the use of coal and thus reducing sulphur dioxide emissions. In Hong Kong plans are in hand to clean up the city's ever thickening air by replacing diesel fuel for taxis with less noxious liquefied petroleum. Seventeen sites in Singapore, it is learnt, - already in some ways, an environmental blueprint for much of Asia - have been designated "Nature Areas."

For poor countries as ours, the top priorities should be to reduce rapid population growth and urbanisation. Overpopulation means overloading the earth's carrying capacity - and that translates into diminishing resources for development and deteriorating quality of life. In developing countries, which contain more than 80 per cent of the world's six billion people, poverty, population growth and environmental damage are closely related. Rapid population growth in poor countries has begun to cause permanent damage to the environment in the form of deserts, infertile topsoil, barren hillsides and most notably deforestation. This damage will accelerate as our population swells. In consequence social unrest that we are witnessing now will erupt in more vicious form.

In a bid to arrest such trends especially in this age of globalisation and inter-dependence, all our activities has to be linked with sustainable development to create a hybrid concept of user - friendly economic growth. Permitting rampant destruction of forests for fuel, either in our houses or brick fields, we will only identify ourselves as major contributors to global pollution. We have to think now as to how we can prevent today's unconstrained development from becoming tomorrow's environmental devastation.

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The price tag doesn't reflect the ecocide involved

A paradox underlies the global aquaculture: the diversity of fish farming fast-tracks a solution to the shortage of food, but also is a contributing factor in the collapse of ecosystem. Fish produced from farming activities currently accounts for over one-quarter of all fish directly consumed by humans. As the human population continues expanding beyond six billion, its reliance on farmed fish production, an important source of protein, will also climb. Some types of aquaculture, including shrimp farming - a case in point in Bangladesh - which poses potential danger to coastal resources through habitat destruction, waste disposal, sipping of saline water into the subterranean aquifers, accumulation of sodium chloride and pathogen invasions, have a deleterious impact on the already threatened ecosystem.

Bangladesh took up shrimp cultivation as part of its extensive aquaculture, lusting for massive profit. Shrimp farming - a major worrying concern for the past decade - has thrown up an image with serious portents. The coastal belt of Bangladesh has been devastated by the assaults of shrimp culture. More than 60 per cent of the brackish water zone in the coastal area fit for shrimping has been devoured by unplanned cultivation. It poses a great danger to coastal ecosystem with complex nature. The problem it churns out is two-pronged, to say the least. On the one hand, it causes serious environmental damage and denies marginal farmers their basic human rights, and accelerates the rate of landlessness and nips the means of livelihood, on the other.

From the 1980s, shrimp has become a viable export commodity in Bangladesh attracting outside investors especially from cities. However, shrimp - harvested from the wild - had been exported from Bangladesh in the late 1960s. The coastal environment, which has directly suffered due in large part to embankments, built from 1962 to 1963, was exposed to more risks posed by the unplanned and unscientific shrimp cultivation, which has been promoted in some parts of the country as a monoculture.

Destruction of flora and fauna apart, aquaculture diminishes many indigenous fish varieties through habitat modification, collection of wild feedstock, disturbance of food web interactions, introduction of exotic species and pathogens and nutrient pollution. As a review article published in Nature on June 29, 2000 shows:

"In India and Bangladesh, up to

Unplanned shrimp culture poses a two-pronged problem: it causes serious environmental damage and denies marginal farmers their basic human rights, and accelerates the rate of landlessness and nips the means of livelihood, writes Arun Devnath

160 fish and shrimp fry are discarded for every fry of the giant tiger shrimp, *Penaeus monodon*, collected to stock shrimp ponds."

In Southeast Asia, hundreds of thousands of hectares of mangroves and coastal wetlands have been transformed into milk fish and shrimp ponds. This transformation results in a loss of essential ecosystem services generated by mangroves, including the provision of nursery habitat, coastal protection, flood control, sediment trapping and water treatment. Mangrove forests serve as nurseries that provide food and shelter to indigenous fishes. Loss of mangrove forests increased sediment transport onto downstream coral reefs.

Rice cultivation is also threatened by shrimp farming. Experts say saline water brought into the embankments and stagnated in the fields increases salinity of the soil and helps sodium chloride accumulate on rice production.

The shrimp industry is split both geographically and financially. The geographical divide is determined to a large extent by the environmental requirements of the two types of shrimps that Bangladesh exports. Along the south-eastern coast, between the city of Chittagong and the village of Teknaf at the southern-most tip of Bangladesh, a salt-water variety of shrimp - known as the black tiger shrimp - is farmed in coastal ponds. Shrimp production here is developed on a large-scale commercial basis. In south-western Bangladesh, on the other side of the Bay of Bengal in the Khulna district, a different variety of brackish water shrimp is being produced in the less saline water. Here mainly Bangladeshi businessmen have invested in the industry on a much more modest scale than the investments in the Chittagong area.

The Chokoria Sundarban - located in Chokoria thana of Cox's Bazar - has been entirely destroyed and replaced by thousands of shrimp farms. What was a unique mangrove patch has become a veritable saline desert - worrying fallout of shrimp farming. The total disappearance of 21,020.45-acre mangrove stretch is largely thanks to hectic shrimp cultivation. A few

columns of the remaining mangroves on the banks of Maheshkhali channel and other rivers stand only to deceive the tourists who are unmindful of what lies beyond the dikes - only thousands of shrimp ponds in which lurk shrimp fries, killer virus and poison.

As of 1996, 67,500 acres had been brought under shrimp cultivation in Cox's Bazar. Of these, 30,346 acres are government land; 12,182 acres *khas* land and 1,138 acres other (Source: Bangladesh Environment: Facing the 21st Century). To make shrimp cultivation in Cox's Bazar and Khulna a success, the IDA (World Bank) and UNDP provided infrastructural support under a project - Shrimp Culture Project (World Bank credit no. 1651 BD).

The World Bank has another follow-on shrimp project only in Khulna district, which began in 1991. The bank's role in promoting shrimp cultivation and its consequences is all the more precise, though it is reluctant to share its bad consequences.

The World Bank claimed that the proper construction of dykes required by the industry would stop saline water seepage into the agricultural lands. However, in the experience of farmers in the Khulna area, shrimp cultivation is causing salinity, and thus harming crop production. There is also some evidence to show that dykes, weakened by cutting to let brackish water go onto the land, are then more prone to flooding with saline water.

The case of Bangladesh shrimp industry highlights a serious problem: economic development in the country is not matched with any environmental objective. The government has sacrificed the fragile coastal ecosystem on the grounds that shrimp for export earns much-coveted foreign exchange, necessary for strengthening the country's economy. At the other end of the spectrum, a handful of people benefit and a greater number of farmers become dispossessed. The high price of shrimp on the western market lulls anyone into thinking that shrimp is a shortcut to economic development in the country. But the price tag does not reflect the ecocide involved.

The Bush blow to Kyoto protocol

EKRAM KABIR

GOVERNMENTS and environmentalists around the world have reacted angrily to the announcement by President George W. Bush's administration that it will not implement the Kyoto treaty on combating global warming.

"I will not let greenhouse gas reduction harm the economy and jobs of the United States," Bush said. "We will not accept a plan that will harm our economy and hurt American workers... we're now in an energy crisis."

The Kyoto protocol requires that thirty-eight industrialised nations cut emission of the main gases produced by human activities, which are blamed for climate change. By 2012, they would have to cut emissions by an average of 5.2 per cent on their 1990 levels and the US by seven per cent. The US is responsible for about 25 per cent of global emissions of carbon dioxide (CO₂), the main pollutant covered by Kyoto.

The US argues that its decision is not unreasonable, as it produces more wealth than any other country. The US objects to the protocol on the grounds that it concentrates on emissions created from industrialised countries, and refuses at this stage to seek to limit pollution from developing nations.

The decision of America is really unfortunate. There's no question that America discharges a quarter of the polluting emissions of CO₂ across the world, and for them not to be part of the agreement is almost unthinkable. The most dangerous and fearful challenge that the humanity faces over the next 100 years is that if temperature rises by six to 10 degrees, parts of the world will become uninhabitable and have droughts on such a scale that the world has never seen along with tornadoes, floods and extreme weather conditions.

Bush is speaking only about the narrow economies of the oil and coal industries. An oilman himself, Bush is thinking of only the fossil fuel economy. He is not addressing the entire US economy. If he were, he

would know that the economy and the US insurers are being buffeted by extraordinary weather events related to man-made greenhouse gas-induced climate change. He would know that this is causing a number of major disaster relief draws in billions of dollars to repair that of the extreme weather events. He would know that the US is quickly losing competitive advantage to Europe on the development and deployment of energy efficient motors and renewable (non-GHG) energy sources.

A report by insurers who are members of the United Nations Environment Programme's (UNEP) Financial Services Initiative found that global warming will cost the world US\$300 billion a year unless urgent efforts are made to curb emissions of CO₂ and other gases linked with greenhouse effect. The economic costs will include:

- dam and dyke-building to keep rising sea-level out of coastal cities and farmlands;
- damages to farmlands and crops resulting from weather extremes created by GHG;
- diminishment of fresh surface and groundwater drinking supplies in dry areas;
- forest fire fighting costs, including loss of productive timber forests and loss of tourism from burned over areas;
- reduction of salmon and other coastal fisheries affected by global warming;
- damage and repair costs to buildings, roads and infrastructure associated with extreme weather (cyclones and tornadoes).

Dr Gerhard Herz, head of Munich Re's Geoscience Research group is reported to have said, "Studies have indicated, disturbingly, that climatic changes could trigger worldwide losses totalling many hundreds of billions of dollars per year."

"Most countries can expect their losses to range from a few tenths of a per cent to a few per cent of their gross domestic product (GDP) each year."

So, there is no escape from the dangers of environmental degradation. And it has now become a security issue. Why? Because environ-

mental security is the relative public safety from environmental dangers caused by natural or human processes due to ignorance, accident, mismanagement or design and originating within or across national borders.

However, there's hardly an official definition of environmental security that unifies thought and action in every country. There have been many attempts to be more specific in identifying the linkage between environment and security. To date these efforts have focused on the integration of security definitions into the issue of environmentally caused scarcities and conflicts. There are evidence indicating that environmental threats have global implications of not only damage to the environment, but to public health, genetic integrity and resulting scarcities of resources such as water, food and forest products. The displacement of people as a result of conflict is ageless, but population migration caused by overt environmental compromise is a newly recognised problem.

Now this issue is important in the global context. In today's interdependent world, environmental plight in one part of the world is likely to have dire consequences for the whole world.

Most of the developing and underdeveloped nations would say that it is essential everybody proceeds along the lines of Kyoto, because it is the only game in town, which was signed up to every single nation on earth.

Critics would argue that the protocol was widely debated, often criticised and even deeply divisive. But by discarding the document, President Bush has assumed a huge responsibility; he must not only come up with an alternative to Kyoto protocol, he must do it quickly. The last word, however, on Kyoto treaty has not been said. Much will depend on the kind of move Bush administration makes between now - in New York - and July - in Bonn. The world awaits a new global warming initiative from the White House, failing which the US will be exposing its shallowness about its environmental policies.

Taste of freedom



Two polar bear cubs play with each other as their mother yawns in their compound at the St. Petersburg Zoo on Wednesday. The cubs, born in St. Petersburg's Zoo four months ago, left the winter shelter the day before for the first time in their life.

PHOTO AFP