

Man-eaters of the Sundarbans

by Khasru Chowdhury

One expert opinion is that shortage of food is responsible to some extent for man-eating. The slain bodies of five man-eaters bear witness to this. All of them were healthy except one, which confirms the notion. When a healthy tiger, for some reasons, kills a human being, it gets to know that man is a slow-footed animal and therefore, an easy prey. This helps the tigers to become habitual man-eater.

SOMEWHERE in the north-east part of the Sundarbans, there still roars and roams a tiger with all the royal majesty. But his late now lies in the hands of rather in the pens of the senior forest department officials. Because he may anytime be dubbed as a man-eater and then the hunters will snipe at him. He will be shot dead for his crime — killing at least 37 people in the

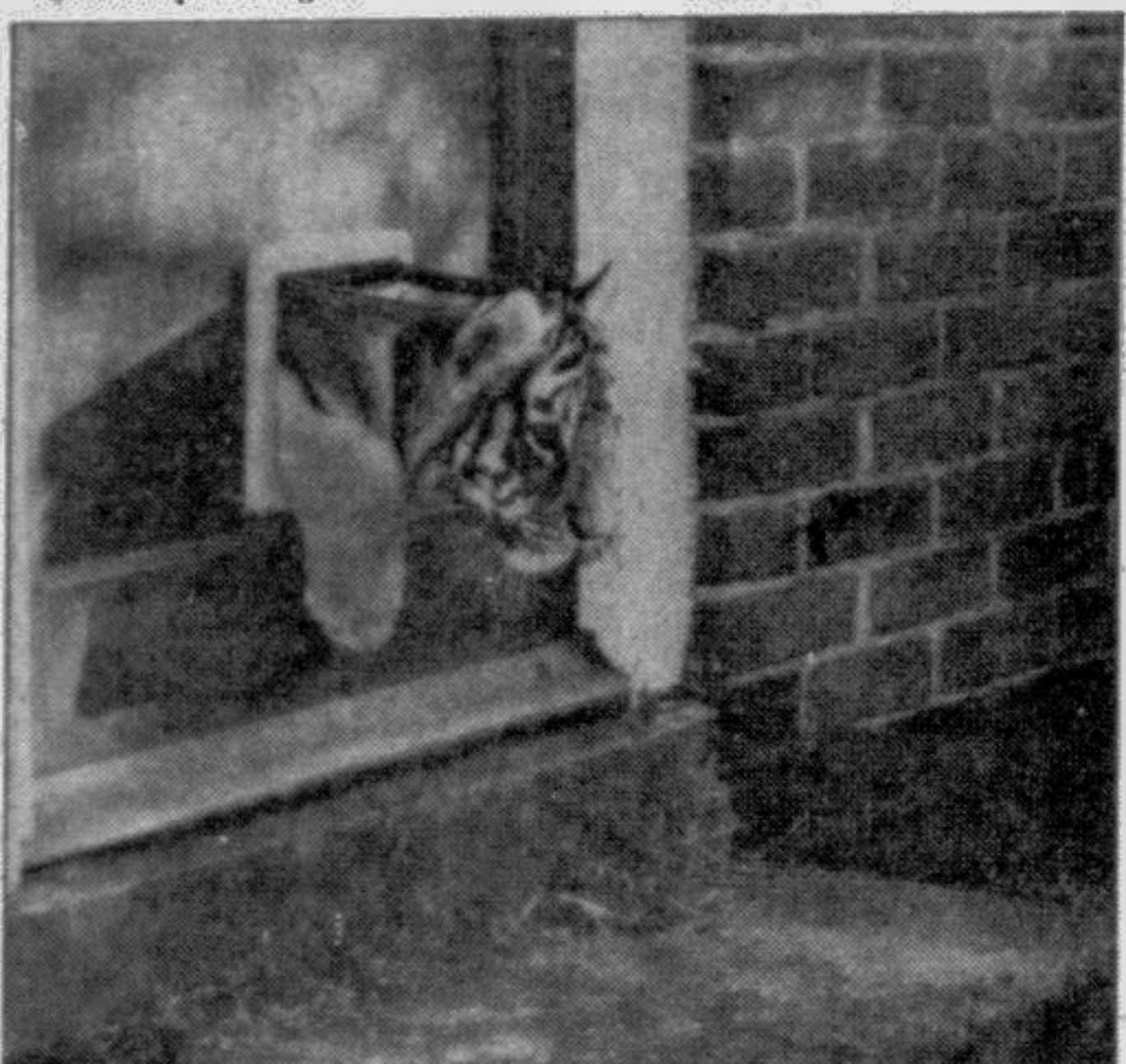
physically unfit to prey on other animals then it turns into a man-eater. Sometimes, it may mistake a human being for a game from behind and strike.

Both these reasons can be attributed to the casualties in the Sundarbans. But there are more behind this.

From 1985 onward, the incidence of tigers killing human beings are on the rise in the eastern Sundarbans. Some



A derelict canal Khura. The tigers cross the canal and snatch the cow from the nearby villages. Sometimes, the tigers also tempt the tiger. — Photo: Rubaiyat Mansoor



This apparently harmless creature may one day turn into a man-eater for shortage of prey.

Chandpat Range of the Sundarbans. This particular tiger is known as the "kafakhal" man-eater because it is the resident tiger of Katakhal area of the forest.

But the Katakhal man-eater is not an isolated case. In recent times, there has been a sharp rise in incidence of tigers killing men in the Sundarbans. The question remains, why?

It is a proven fact that tigers do not normally prey on human beings. Only when one becomes

most infamous man-eaters are the supati man-eater and the chandeshwar man-eater which killed over 52 human beings together.

One reason behind such rising incidence is that people are invading the forests at random. These people, mostly illegal fishermen and bawalis are disturbing the tigers for which the animals become irritated and attack men.

In Chandpat region, the 1988 flood destroyed the cattle

fodder. The villager then started introducing their cattle inside the forests and in the process, the original habitat of tigers was disturbed. Finding no other food, the tigers started preying on the cattle.

The local people then stopped grazing cattle in the forest. But the tigers cannot go unfed. They had no games to prey upon. So they started invading the villages and often



Illegal fishermen who so often invade the forest become the main victims of the man-eaters. —Photo: Rubaiyat Mansoor

killed people when encountered. It can be said categorically that the certain parts of the forest, where the number of games declined, man-eating incidents have increased. Chandeshwar, Bhedakhali and Chandpat are some of the areas where there are few games with the highest number of man-eating incidents. On the otherhand, Katka and Kachikhali areas are densely populated and there are many tigers, but incidents of man-eating are rare because of the abundance of games.

One expert opinion is that shortage of food is responsible to some extent for man-eating. The slain bodies of five man-eaters bear witness to this. All of them were healthy except one, which confirms the notion.

When a healthy tiger, for some reasons, kills a human being, it gets to know that man is a slow-footed animal and therefore, an easy prey. This helps the tigers to become habitual man-eater.

Now the question is, how many tigers are there in the Sundarbans? The government puts the figure at 450. This has no scientific basis. But for the sake of conservation and forest management, it is a must to figure out the real size of tiger population. On this size would depend the required number of other games.

There is a notion that the number of tigers has increased over the years in Sundarbans as more tiger sightings are re-

ported. But one should also consider the fact that men have been penetrating into the forest too frequently for which sightings have increased.

There is now an urgent need to launch a tiger conservation project. Such a project would also aim at management of other species and the forest as well. This would effectively bring down the incidents of man-eating as has happened in

India. There is a general apathy of the government to start such a project on the excuse that tiger experts are not available in the country. But I know that there are some local experts who can render their services efficiently.

Along with the pure scientific and environmental efforts of forest management authorities, the government can also take steps for promoting tourism which would also bring cash to the national exchequer. Many may raise the question where the money for the tiger project would come from. One solution to this may be, if the government can stop the illegal extraction of wood from the Sundarbans, if the corruption of the forest officials could be stopped, the government would have a huge additional revenue earning. A small part of this earning would be enough to run the tiger project.

Another way of raising funds is that the government can offer lotteries for the project. Whatever can be the way of raising funds for the tiger project, it has become necessary to launch the programme as soon as possible because the Chandpat man-eater still roars and roams the forest. And at any time, another human being will fall prey to it. Like the Chandpat man-eater, many other tigers are on way to becoming man-eaters, unless steps are taken to check it.

ment, poverty always leads to corruption of all kinds. The remaining natural woodlands and forest are fast disappearing because of commercial logging. Proshika resorts to non-violence in blocking loggers from entering forests. Proshika believes that villagers not only have rights to the forest and its produce but when these rights are guaranteed, they can and will make the forest sustainable. Proshika has signed an agreement with the Forest Department to assist organised groups to effectively take part in agro-forestry and woodlot projects of the government. "We have also such schemes leasing out of plants and forest for North Bengal and in its embankment areas," he confirmed.

The entire northern region of 8542 thousand acres has only 34 thousand acres of forest — a mere 0.4 per cent. The north-western part of Rajshahi district is covered with only brush wood, while Rangpur district has only two Sal forest of six and eight miles, and Dinajpur has few scattered Sal forests, thus leaving the north-western Bangladesh, practically with no forest cover.

Unfortunately the northern part has always been the target of mother nature: severe annual droughts, high fluctuation in temperature, irregular and extreme rainfall variation, extensive soil erosion and degradation and nutrient deficiency, low agriculture production, flush floods and widespread poverty are common features there.

According to a report of International Union for Conservation of Nature and Natural Resources (IUCN) and Ministry of Environment and Forest, in 1991, "the northern Bangladesh has been clearly identified as areas where evidence of desertification is noticeable in dry and bare soil conditions" and the Barind Tract is considered as an ecologically fragile zone with extremely low vegetation cover.

But these possible threats are overlooked and considered to be too premature. According to a report of International Union for Conservation of Nature and Natural Resources (IUCN) and Ministry of Environment and Forest, in 1991, "the northern Bangladesh has been clearly identified as areas where evidence of desertification is noticeable in dry and bare soil conditions" and the Barind Tract is considered as an ecologically fragile zone with extremely low vegetation cover.

But these possible threats are overlooked and considered to be too premature. According to a report of International Union for Conservation of Nature and Natural Resources (IUCN) and Ministry of Environment and Forest, in 1991, "the northern Bangladesh has been clearly identified as areas where evidence of desertification is noticeable in dry and bare soil conditions" and the Barind Tract is considered as an ecologically fragile zone with extremely low vegetation cover.

Environmental Impacts of Leather Manufacturing Industry

by Mohammed Nurul Islam

THE main raw materials in the manufacture of leather are hides and skins. The difference between the two is that the former originate from bigger animals such as cows, buffaloes and camels while the latter are from smaller animals such as sheep and goats. All of them are by-products. As the value of raw hides constitutes a small portion (5 to 10%) of the main product (meat), the supply of this raw materials in leather manufacture is virtually independent of its demand. This by-product nature of the raw material is a major obstacle in improving its quality in developing country like ours. Very often this quality is inferior due to poor slaughtering and flaying. Local customs also affect the quality of supply, for example, in India most of the cattle hides are collected from animals dying of starvation, old age and diseases.

Tanning refers to the process of converting raw hides and skins into leather. Technically, it is the process of converting the protein in hides and skins which is subject to decay into a stable, non-putrefiable material. The two main tanning, agents are vegetable tanning and chrome tanning. In vegetable tanning, raw hides and skins are treated in water containing tanning extracts from plant leaves, barks, fruits, roots etc. In chrome tanning, raw hides and skins go through a process called pickling with sulfuric acid and common salt after which they are treated with solution of basic chromium salts. In the financial year 1991-99, Bangladesh exported 110.55 million sq. ft. craft/finished leather and earned US \$ 148.85 million. Total leather production in the country is usually 150 million sq. ft. out of which 20 million sq. ft. is required to meet the domestic need.

Waste Produced by the Leather Manufacturing Industries:

There are about 250 Nos of leather manufacturing industries in Hazaribagh. The data of the exact amount of the wastes discharged from the tannery

area is not available. The untreated liquid and solid wastes are discharged directly through the drain and deposited to the nearby low-lying areas and finally fall to the river Buriganga.

liquid waste produced from the Hazaribagh tannery area is 15000 m3 per day. The characteristics of the liquid waste from the leather manufacturing processes are as follows:

Environmental Impact of the Leather Industry's Waste		
Contaminants	Source	Effects caused by discharge of waste
Oxygen consuming Substance (biodegradable organic matter)	Proteins, fats, oil, grease, dung, blood	Depletion of oxygen, septic condition
Suspended Solids	Mixed waste effluent	Sludge deposits, development of anaerobic condition
Toxic matter Cr+3	Chrome	Detrimental to tanning
Toxic organic compound	Tanning, Fatliquoring, Dyeing, Soaking	Food poisoning in case of accumulation
Dissolved organic solid i.e. Chloride, Sulphate	Deliming, Drying, Chrome	Increase of salt content in river water
Odours i.e. Hydrogen Sulphide		Public nuisance, Health hazards
Toxic matter Cr+6		Carcinogenic, fatal poisoning and serious health hazards.



The waterbody is all filth, discharged by the processing factories all around.

At present these wastes cannot fall into the river Buriganga due to the obstruction of the Dhaka Flood Control Embankment. This causes serious environmental hazards and public nuisances and a continuing source of environmental complaints for the local community and passer-by.

Liquid Waste:

The approximate amount of

Parameters	Quantity
BOD	450-1300ml/l
COD	1350-4900ml/l
PH	0 to below 7 = Acidic 7 to 14 = Alkaline
Sulphides etc.	10-150 ml/l
TOC	115-9000 ml/l
SS	1950 ml/l
Cr3 + (Water)	1.5 ml/l
(Chrome Liquor)	2500 ml/l
Water consumption for tannery	is 74-83 m3 per ton

Zambia Changes Archaic Laws to Save Nature

by Elias Nyakutemba from Zambia

WHEN Zambia's President, Frederick Chiluba created an Environment Ministry soon after coming to power 17 months ago his critics saw the move as nothing but a ruse to provide jobs for politicians belonging to the ruling Movement for Multiparty Democracy (MMD).

Public criticism has been piling up against Chiluba and the seemingly ineffective Environment Ministry, the Environmental Council of Zambia (ECZ) and the Environmental and Population Control Act (EPCA).

Said one environmentalist: "After a year in power, all these organs have done nothing to fight environmental destruction. They are toothless entities and nothing but a huge drain on the empty state coffers."

But much of this despair and even anger now seems to have vanished and is replaced by hope, even praise, for Chiluba and his Environment Ministry. This is being largely attributed to Chiluba's new law reform initiative aimed at fighting the country's worsening environmental problems.

According to Environment Deputy Minister Suresh Desai, four new tough laws have been added to the EPCA "to give it enough teeth to bite industries, organisations or individuals who violate environmental control regulations."

Areas to be covered include stringent controls on air, land and river pollution, excessive noise, toxic substances and waste disposal management.

Desai explained: "What it means is that from now on, the

state through the ACZ, organisations and even individuals will have the right to litigate against industries for damages caused to health, crops, land and rivers through suspected pollution and poor waste management disposal. In the past, the law did not adequately provide for litigation."

But the fact remains that since independence 28 years ago, Zambia has been denied real rights to sue polluters. The country's old Mines Act has a specific clause which insulates the whole mining industry, under the Zambia Consolidated Copper Mines (ZCCM), from prosecution for causing pollution to the environment "not even by the state" or people whose lives may be endangered by the state or people whose lives may be endangered by emissions of toxic fumes such as sulphur dioxide.

Desai said a new bill has already been prepared and "aims to remove ZCCM's immunity and leave it open to prosecution, like any other industry."

Said Desai: "In the interest of the people's health and the danger to the environment, we feel that the Mines Act should be amended so that ZCCM operations do not live above the

law." This, at a time when Desai said the majority of people who complain of respiratory infections and other pollution related ailments come from the mining towns, mainly in the copperbelt region.

Zambia's environmental problems are enormous, compounded by ingrained poverty and lack of new anti-pollution technologies and in many cases, plain ignorance of the green issues among commerce and industry managements.

Each year, for instance, official statistics say up to 200,000 tonnes — although independent experts double this figure — of toxic sulphur dioxide, mostly from ZCCM's over 50-year-old smelters, is emitted into the air.

An estimated 400 tonnes of toxic waste (including Hebrides, fertilizers and scrap metal) remains lying around several industrial sites.

In addition, Zambia's forests are being cut at the rate of 200,000 hectares a year. In 20 years time, ecologists warn, the forests could be wiped out completely unless the rate is brought down.

Primitive farming methods, wanton charcoal burning and lack of an agro-forestry drive,

The data on the exact amount of solid waste discharged from the leather manufacturing industries is not available. The solid wastes produced from the tanneries at Hazaribagh are discharged indiscriminately on the roadside of that area which are kept for several days or weeks even.

The nature of the solid wastes discharged are as follows:

—Trimmings of the untanned hides with hair
—Trimmings of limed, untanned hides without hair (fleshings, glue stocks etc.)
—Chrome tanned and vegetable tanned shavings, spats & trimmings
—Sludges from the preliminary clarification.

Gaseous Waste

The characteristics of the gaseous waste produced from the leather manufacturing processes are as follows:

— Gases from the boiler plant: SO₂, CO₂, NO₂
— Deliming, during drying of wet leather after tanning and dyeing (H₂S, liquor vapours etc.)
— In the finished processes (contains solvent vapours, formaldehyde).

Hydrogen Sulfide (H₂S) and its danger:

There is a greater risk of sulphides from lining liquor being carried over into the subsequent operation (deliming, pickling). During this operation for carrying out in neutral and acidic PH range, poisonous hydrogen sulphide gas may be released. At a concentration of 700 ppm, hydrogen sulphide in the inhaled air there is a danger of acute, fatal poisoning after only brief exposure. However, irritation of mucous membrane and various symptoms of poisoning such as nausea, vomiting, hatching, diarrhoea, respiratory distress, cyanosis, unconsciousness, tetanus, cramp and occasionally a state of agitation may also be observed at a lower concentration, depending on the duration of exposure.

The writer is assistant director (EIA) Department of Environment, Dhaka.

Desertification in North Bengal Looms Large

by Raffat Binte Rashid

WHAT North Bengal definitely needs now is trees. Deforestation and the acute decline in the water level is turning this part of the country into a desert. All the symptoms of desertification are unmistakably there: a scorching sun staring unblinkingly down at the barren lands, the vast acres of silver sand without a trace of green, deflecting all the heat into the atmosphere, and the evening's howling winds turning into shivering cold nights.

The entire ecosystem is in a shambles. It is no more working in North Bengal. The cycle of the elements has gone awry and before long only one thing will remain of this life sustaining system: collapse. Without trees there can be no rain, no rise in water-level and simultaneously no green. The silver sand is flowing instead of rivers in these areas. Sand, which stands for an end to all connection with life, is spreading like an infection and turning all the soil into sandy banks.

In fact, this region has always lacked in green but whatever it had, it was enough to balance the environmental equilibrium. Actually what happens without trees is, when rain drops fall on barren lands the soil becomes muddy, the rain water on the surface washes away the soil, making the rocks come out, as it moves along. But if trees are planted throughout the catchment area of rivers, the raindrops are mostly absorbed by their roots, leaves and other parts, leaving the soil intact. And preserving much of the rain water for later vaporisation and precipitation. If the soil constantly moves away from the surface in this manner, the land will no longer be fit for any sort of farming, not to speak of massive afforestation programmes.

Trees all over the catchment areas can control the flow of silt in water. If the silt deposits are strong, floods will be frequent, the river basins will rise and when water flows in from higher places, the river will not accommodate the excess water which will move over to the land, as a result, flooding it.

Only afforestation, which is now a pressing issue in the northern part, can improve such hostile conditions.

"I think our people in the North should start planting more and more trees right now, then the desertification problem could be avoided," says K N M Katebi, the Chief Conservator of Forests. North Bengal has always been relatively barren with a few private forests owned

The entire ecosystem is in a shambles. It is no more working in North Bengal. The cycle of the elements has gone awry and before long only one thing will remain of this life sustaining system: collapse. Without trees there can be no rain, no rise in water-level and simultaneously no green. The silver sand is flowing instead of rivers in these areas. Sand, which stands for an end to all connection with life, is spreading like an infection and turning all the soil into sandy banks.

by a handful of land-lords. These were later given to the government for management and its growth. Chopping up of these can be prevented but what about the trees owned by local people? These people are in poverty, whenever they feel the need they will axe down the trees, or contact the brickfield officials and sell off two or three trees without hesitation. With this bargain, the immediate gain is Tk 30,000, which for him is urgent and important. He cannot be bothered about "Tomorrow's environmental impact." In simple words when a poor farmer is in need of cash, nothing we offer can help, other than money," Katebi says.

"Recovering the loss is time consuming. In the meantime, our people have to live. I agree to their chopping down of trees, it is my job to replace the damage and the challenge will continue, we will keep on planting trees," he accepted.

Along with this growing population, the forests have not grown and this crisis has been created. We thought of planting, outside the marginal land, for example the roadside, railways, embankments to meet the people's demand for fire-wood. But it took us 20 long years to make the engineers of roads and highways understand that acci-

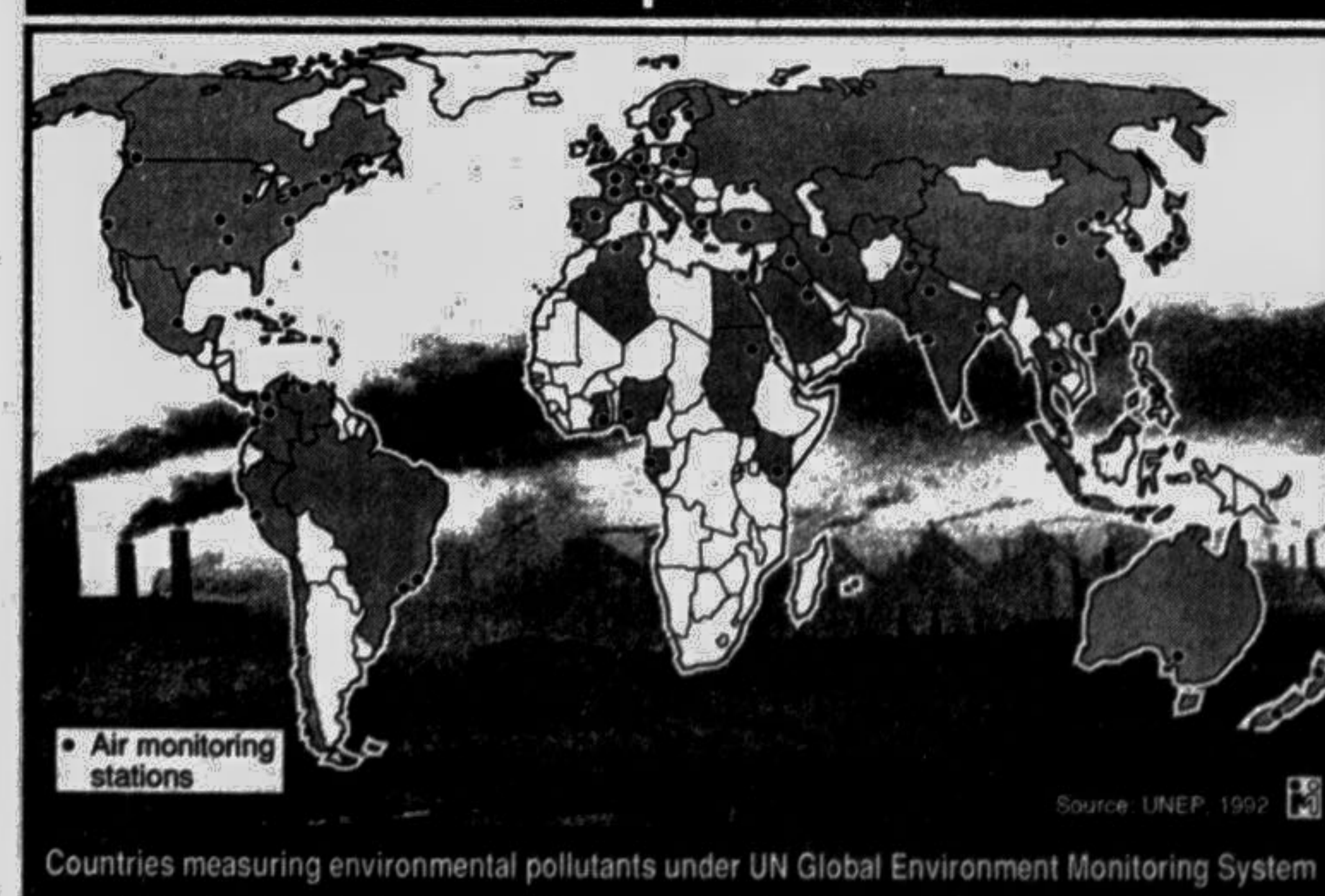
dents might be fatal, but rare. Now we are at last being allowed to do it," he said. Katebi further adds that it is not yet too late and nothing is irreversible, if deforestation is minimized and coming up of rocks are avoided, desertification will not occur.

Land is a scarce resource in our overcrowded Bangladesh where population density is 800 people per square kilometre, a

situation that is getting worse each year. Sixty per cent of the population here is landless. Forests and protected areas are frequent targets of these poor landless farmers, and instead of allowing this mass labour to destroy the forests, the best possible solution should be chalked out of this situation. Any positive approach should be encouraged. These people who threaten the forests should now be enlisted to preserve it. This will also offer an answer to their survival needs.

"Misery often leads to looting of environment" is what Gazi Faruque Ahmed of Proshika Manobik Unnayan Kendra has said. His is one of the few NGOs that has pioneered environmental activities. Agro-forestry, social forestry are few important solutions, he believes. "There is a misconception about the rural people, they won't cut down the trees, if it belongs to them. Given ownership of these planted trees, they'll protect them with life. Like other food for work programmes, if these people are offered 5 kg of flour or food, they'll plant trees and protect them. These poor people are actually not chopping down trees; they are employed by illegal contractors who work in coalition with forest depart-

Protection from pollution



Countries measuring environmental pollutants under UN Global Environment Monitoring System