

How Coastal Afforestation Suffers

by M.A. Sobhan

IT is the practice in Bangladesh that as soon as a new formation rises and ecological succession starts with grass coming up as the first colonizer, the new land is taken over by people and cattle start grazing. The cattle not only loosen the soil but also browse all successor vegetation that might otherwise have colonized the new land had there been no human intrusion. Ecological succession is thereby retarded. If there had not been this retardation in the ecological succession, grass would eventually have given way to shrubs and trees. Shallow-rooted grasses when replaced in succession by deeper-rooted shrubs and trees would have consolidated the newly formed land. This cannot happen in coastal Bangladesh.

Interpretations revealed new land accretions in the estuaries of the Brahmaputra, Meghna and Ganges rivers and in the Bay of Bengal within the territory of Bangladesh. It was estimated that about 4,978 sq km of such new lands were in the process of formations. The newly accreted land masses being found to be extremely fragile and unstable were decided to be consolidated and stabilized through afforestation prior to these being lost into the sea.

Realizing the importance of coastal afforestation for the consolidation of newly accreted land, the Forest Department has undertaken extensive afforestation projects in the coastal districts of Bangladesh. By 1976 an area of about 11,000 hectare had been planted. By 1980, about 40,000 hectare of plantation had been completed.

A massive afforestation programme by plantation of about 40,500 hectare in the coastal area was targeted for the period 1981-1985. Up to June 1985, about 37,000 hectare had been planted as estimated by remote sensing techniques.

A massive afforestation programme of 99,905 acres of land in the coastal area of Chittagong, Noakhali, Bhola and Patuakhali was targeted for the period 1986-1992. Up to December 1991, about 87,135 acres had been planted. The programme was initiated with a view to keeping the environment balanced, controlling disasters, developing the country's forest resources and stabilising the newly raised coastal lands.

According to the foresters, present coastal afforestation programme would help stabilise the two lakh and fifty thousand acres of unsettled liquefied lands now emerging along the coastal belts.

It has been observed that the tidal bore is diminished very rapidly on the land, is maximum on the shoreline and almost zero within five kilometers.

It has been further observed that the presence of thickly planted trees diminishes the wind velocity and quickly reduces the tidal height, thus arresting the magnitude of devastation. It has also been found

in many countries. The cyclonic winds and surges become weaker when these are resisted by the coastal forests.

Afforestation is cheaper and ecologically more beneficial than any other technological measures to protect coastal areas.

Afforestation is stabilising and expanding of newly formed unsettled coastal lands. Different studies show over the years million of hectares of lands in the coast formed but disappeared for want of afforestation. A rapid land accretion is an important aspect of economy and cyclone protection.

What should be done
—A green belt and no man land with a width of 5 km will be desirable. This is not only a permanent solution but it will benefit the entire country.

—No farming or shrimp cultivation or salt manufacture be allowed within the green belt. The loss of revenue and earning can safely be compared with the colossal loss in one serious cyclone at least twice in a decade.

—No human settlement should be allowed on the newly emerged charlands.

—A long term programme of afforestation in the coastal areas and offshore islands should be considered in view of the fact that trees can reduce devastation by reducing the wind speed lowering the height and intensity of tidal surge and the fact that trees can also serve as a life saving device enabling people climb on or holding on to them.

—Planting of appropriate species be undertaken as a condition of lease of government land for aquaculture. Private land owners practising aquaculture should be encouraged to plant mangrove in the vicinity of their farms.

that with the increase in population, no island has been left uninhabited irrespective of its size.

The newly emerged charland does not get any scope of developing into a stable landmass. If left untouched for a few years, there would grow grass or mangrove slowly adding to the level of the ground.

What coastal afforestation can do
Coastal afforestation may contribute significantly towards maintaining ecological balance, protection of human lives and above all economic upliftment of the country.

—The afforestation, especially the coastal afforestation has a greater importance for disaster management and geo-physical development.

—Afforestation has proved to be highly effective in protecting coastal habitations from cyclones and tidal surges

The cattle not only loosen the soil but also browse all successor vegetation that might otherwise have colonized the new land had there been no human intrusion.

Over population, deforestation, increased use of agricultural land in the fresh accreted land etc. probably lead to non-deposition, erosion of present delta front (Ganges-Meghna delta), whereas the ancient Ganges-Meghna delta was characterised by rapid accretion in the midst of tropical mangrove forests, where the suspended sediments from the Himalaya were trapped.

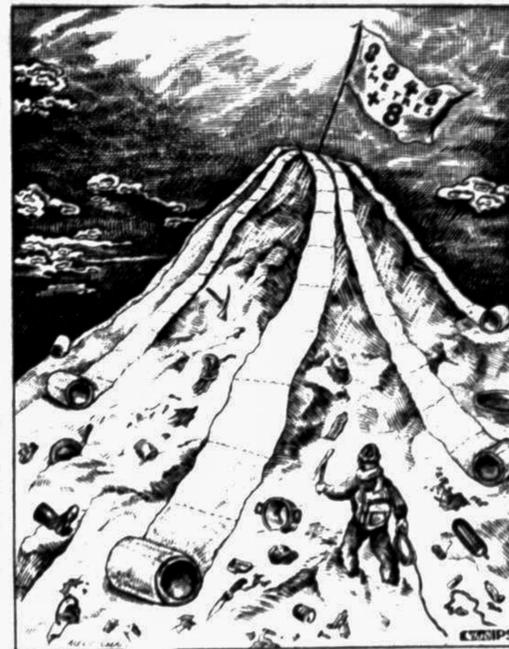
Without the development of deep-rooted vegetation, new formations remain unstable and surface erosion is a continuous phenomenon. Thus, new formations cannot rise much above the surface of the water and stabilize, but are subjected to total surface wash during storm surges or monsoon high tides. Massive efforts in afforestation in these newly formed lands may help develop more such nuclei to give a wider coverage for consolidation of these otherwise seemingly unstable zones.

In early seventies, satellite sensing coupled with images

Braving the Toilet-Paper Trail

by Dhruba Adhikary

Mt Everest, the world's highest peak, has added more metres to its height — courtesy of the heaps of garbage dumped near its summit.



Environmentalists say the problem is not only the garbage. Outsiders cut trees to keep warm and to cook, destroying whatever vegetation is left on slopes already denuded by local villagers.

spent 94 days at the base of the mountain burning some six tonnes of trash on the glacier itself.

A MIDST a spectacular backdrop of snow-capped Himalayan peaks a tourist is hiking along one of Nepal's steep trekking trails lined with rhododendron trees in full bloom.

An unusual pink vegetation in the undergrowth catches her eye. A new Himalayan blossom? A rare orchid? Or a species of hitherto undiscovered lichen? No, it turns out to be toilet paper flapping in the breeze, a tell-tale sign of another careless Western tourist littering the hills.

Nepal is heavily dependent on money from trekkers and tourists, but the fragile ecology of its Himalayan slopes are also being hurt by the sheer number of outsiders.

Many of the foot-paths that crisscross these roadless mountains are now called 'toilet paper trails.' Discarded tin cans, food wrappings, tissue paper and other non-biodegradable 20th century flotsam dot the routes.

During this year's spring climbing season alone, 139 expeditions travelled through the Himalayas littering the trails with an estimated 50 tonnes of trash.

The garbage is not confined only to the Himalayan valleys. They can even be found on the slopes of Mt Everest, the world's highest mountain 150 km north-east of Kathmandu.

About 50,000 trekkers and mountaineers visit Nepal's remote mountains every year. With them come about 100,000 more porters.

The 8,848 metre high Mt Everest is visited by at least 30 foreign expeditions a year. Its base camp on a glacier on the Nepal side of the mountain now has a rubbish dump nearly eight metres high.

It would have been the world's highest placed garbage pile, were it not for another dump even higher up the mountain on a saddle just below Mt Everest's summit called 'The South Col.'

Tourism in Kathmandu, says if people using the Himalayan trails follow official guidelines, the problem could remain under control.

Edmund Hillary, the first man to climb Mt Everest with Tenzing Norgay in 1953 and New Zealand's ambassador to Nepal, has been advocating a moratorium on climbing Everest for at least five years. He says this will not only help clean-up the garbage but also have a beneficial impact on the environment degraded by armies of expedition porters cutting down trees.

But Nepal earns money from trekkers and mountaineers who have to pay a royalty to climb Himalayan peaks.

In fact, the government just doubled the fee for climbing Mt Everest to US\$10,000 for a nine-member expedition. Every extra member has to pay US\$1,200.

Sonam Gyalpo, director of 'Mountain Travels' that arranged the clean-up expedition, feels there is no cause for alarm. He says reports of mountains being covered by trash are exaggerated.

But there are new schemes to remove the piled-up garbage. The Nepal Mountaineering Association (NMA) is preparing to launch the biggest-ever campaign to clean Everest next year.

NMA President Tek Chand Pokharel says their aim is to remove existing trash and find a way out for the systematic disposal of waste materials in the foothills.

NMA plans to spend nearly US\$ 600,000 on the scheme in an initial two-year period. Though the sum is far from adequate to clean-up the mountains, Pokharel says: 'Let us at least begin by doing something.'

Environmentalists say though clean-up campaigns can help generate awareness, the only systematic way to reduce litter in the area is to involve local people.

West Guilty of Environmental Pollution

by Maneka Gandhi

Former Indian minister of state for environment and forests Maneka Gandhi details the incalculable damage that the Western world is causing by dumping environmentally inefficient machinery and harmful chemicals on the Third World. She believes that the United Nations Environment Programme needs to monitor this strictly.

I think practically all environmental degradation in the East is due to consumption in the West. Consumption has many facets. First, the excessive and wasteful use of resources by the West — resources they do not have and consequently extract forcibly, using the new colonial weapons of the International Monetary Fund, the World Bank and aid to tie us up permanently in debt and thereby make us more amenable to exporting our primary and irreplaceable assets.

Second, in order to keep their own industries going, inefficient, outdated and harmful machinery and chemicals are forcibly dumped on the East.

Most important, however is the constant brainwashing to the effect that ideal living, prosperity, means the Western way of life — more of everything, bigger, faster, more waste-generating. This generates imitation and raises consumption levels of people and countries who cannot afford it.

It also destroys a biomass-based economy without replacing it with anything better.

The generation and distribution of electricity is one example. India has bought the Western models of huge thermal plants and dams (and now nuclear plants) outright — and 90% of the machinery in both comes from the West itself. These thermal plants work at less than 50% of their capacity and the centralised distribution system — poles and wires — cannot stand the weather or the inefficient maintenance over thousands of miles.

For instance, 1,600 dams provide only 2.5% of the country's power, and the damage they cause, by flooding the area around them in the mon-

soon, runs into billions of rupees.

They do not provide irrigation as only a few have canals and even those do not get the water released onto them. They cause malaria (70% of our health budget goes into malaria-combating pesticides — again sold to us by the West).

Less than 10% of our villages are electrified because the system does not work. But that does not prevent the West from selling, or giving us as 'aid', new power plants — that will naturally need new machinery after a few years, which can then be sold at double the normal price.

The World Bank announced a \$1.1 billion Environment

Fund recently — low rates of interest for environmentally sound projects. Top of the list was retrofitting thermal plants, or, in other words, money to buy more machinery.

Seventy per cent of our water is polluted. A large part of that is due to pesticides that have been sold to us by countries who have banned their use for themselves.

Look at the diversion of land for export crops to help pay our international debt — a debt incurred by oil and the above-mentioned machinery: in a country where the staples cannot be given to our own people, the best land goes into tea, coffee, sugarcane, tobacco and spices. All of which use a heavy concentrate of pesticide and enormous amounts of water and all of which are sold on the international market at prices fixed by the West that are lower today than they were in 1980!

The most amazing land use is for fodder and flowers. Every seventh kilo of meat eaten in Europe is made from fodder grown in the East. So, our people who do not even have the staple foods, grow fodder for animals so that people in the West can eat meat, or grow vast quantities of hybridised roses and lilies to adorn Western homes.

And what happens to the money we earn? It goes to pay the debt we owe to the West for buying outdated and left-over machinery.

Consumption in the West needs to have sanctions put on it: it must not only be cut down; it must be rationalised. The Eastern countries are told their poverty and environmental degradation were due to their population. Pollution is not caused by the number of people living but what they do while living.

Is it necessary to use a large part of our metals in making arms and then forcing Eastern countries to buy them? Is it necessary to produce such hazardous chemicals that Western governments refuse to accept them in their dumping sites — and instead fly this poison by night ships under the Panamanian flag to dump it secretly in Third World countries?

The greatest harm done to the environment by the West is through the spread of an ideology on growth which has taken firm roots among our Third World elite. The axioms of this ideology are simple: more growth is good; less growth is worrying; negative growth is disastrous.

The relationship between growth and welfare is ignored. Are the goods produced valuable? Are they beneficial? Have they been distributed to all?

How can we tackle the consumption problem? Western governments should have to regulate what they give of sell to the East. Individuals in the West and companies should cut down on wasteful buying and production of items that are not necessary. (Fabric softeners? What a scam!).

At the same time, politicians in the East — for they, more than their counterparts in the West, control the patterns of development in their countries — should be held accountable for all the wasteful and suspicious buying they do from the West (Westland helicopters, for one).

Multinational companies who open factories in the East should be monitored strictly for their safety procedures. Hundreds of units in India spew poison into the waters daily. Of course, Union Carbide is a case in point — making a chemical in India that they were not allowed to make in their own country, and then making it in the most careless way possible.

The UNEP (United Nations Environment Programme) should be strengthened. At the moment, it exists from conference to conference and does practically no concrete work. But it has the power of the UN. It should be given sanction-making powers. If UN members can impose sanctions on Iraq and South Africa, environmental pollution and wasteful consumption are on less an act of war and a violation of the human rights of the East.

The UNEP could act as a monitor for restraining environmentally inefficient machinery and harmful chemicals from being passed off forcibly to the East. Where it is established that a developing country has been coerced into consumption, the debt should be written off.

It could be the channel to pass on the latest technologies that are suitable for Eastern land, water and weather conditions. It could also enforce the 'polluter pays' principle, which would in time have its effect on Western governments and companies. It could come up with solutions that sustain life, not destroy it.

Too Many Reindeers Pushing Their Herders from the Land

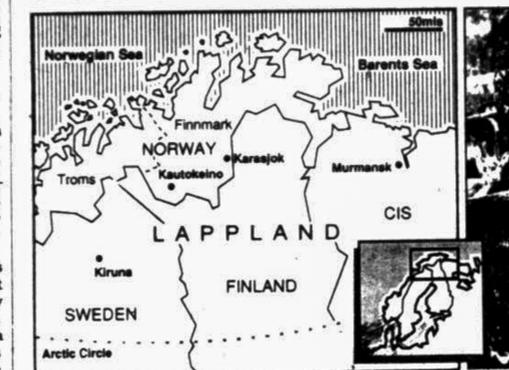
by Ross Brown

MANY of the Sami people of northern Norway, used to hardship, are now faced with losing their way of life. The reindeer herds they manage and depend on are gradually wearing away the resources of their vast yet vulnerable landscape.

While the picture-postcard impression of the Sami is often that of stocky people wearing brightly-hued dress and surrounded by reindeer, only 10 per cent of Samis make their living from the milk, flesh and hide of reindeer.

A family dependent on

Sami territory



The Sami, previously known abroad as Lapps, are concerned about a report from the Norwegian parliament. It is based on the findings of a scientist in the Arctic city of Tromsø who, aided by satellite photos, claims that reindeer grazing areas are close to permanent damage.

There are 160,000 reindeer in Finnmark county today, a 20 per cent drop from three years ago. The department of agriculture is offering nearly \$8 million in an effort to get 500 of 2,200 reindeer herders to find other work which would help reduce the size of herds.

Many Samis, like Johan Haetta, 30 view the proposal as suspect. 'If I have to give up reindeer-keeping, there's not much else I can do,' he says. 'We are experiencing a head-on conflict with an age-old Sami tradition and authority's demands for modern economics. They forget that reindeer-keeping is basically a way of life for us, not a business.'

The Sami minority have seldom been free from strife, facing a climate of biting cold and driving blizzards in winter, and biting sandflies in the brief midsummer, combined with racial discrimination, cultural repression, and the challenges of modern civilisation.



2,000 on Russia's Kola peninsula. Sami have often been cautious about admitting their ethnic roots.

The formation in 1989 of a Sami parliament, called the Sametinget, in Karasjok, as well as broadcasting and teaching in the Sami language, and the Nordic Sami Institute in Kautokeino, have created a new ethnic awareness.

The vast Arctic wilderness of northern Norway is struggling to cope with the 160,000 reindeer that graze its sparse soil. Now the Norwegian parliament has offered cash incentives to the Sami reindeer herders to leave their business, cutting the number of animals but also taking away the Sami's traditional way of life. Gemini News Service reports on the conflict that is threatening one of the world's smallest minorities.

President Ole Henrik Magga of the Sametinget urges more hunting and fishing regulation of Finnmark county, wanting his people to have priority in the shooting of ptarmigan or ducks, and in fishing salmon and pike. This brings him in conflict with the Norwegian Hunters and Fishermen's Association.

reindeer needs a hard of 350 animals. Otherwise they must rely on small-scale agriculture, selling berries, or perhaps working at mining sites or power stations.

Last year, the average reindeer-keeper in the district around Karasjok earned only \$1,600, while their counterparts in central Norway earned an average of \$35,600. In Oslo, the minimum income level is considered to be \$20,100 a year.

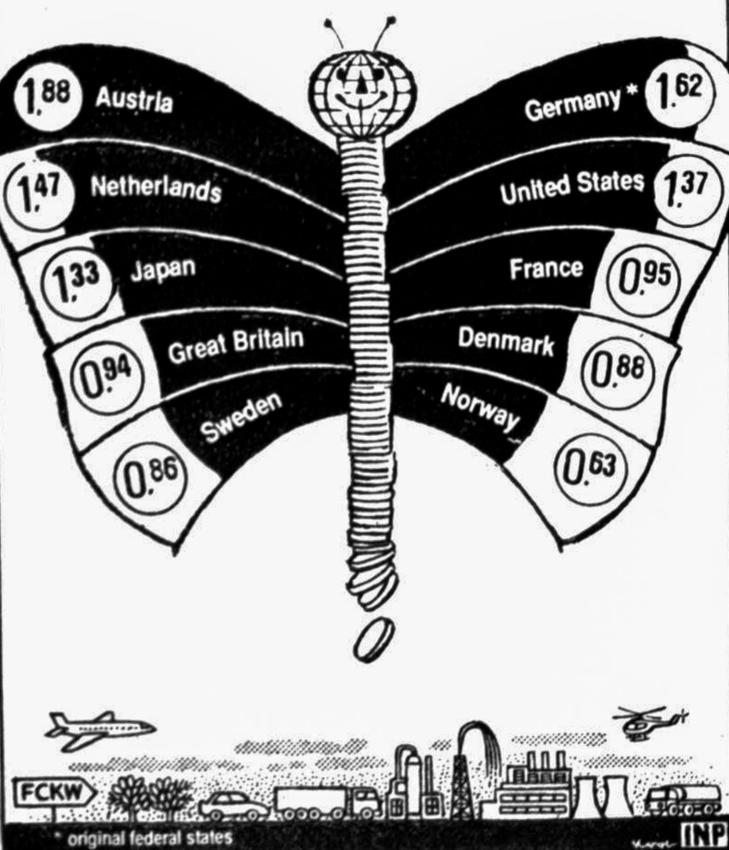
Such poor economics are a result of the state of the 'vidda' in Finnmark — the sprawling plateau of stunted birch, conifers and lichen.

Dam projects in Finnmark have flooded land to generate electricity for industry hundreds of kilometres to the south. Forest have been cleared at a sweep, often without replanting.

Many new roads and electronic surveillance sites have been built for the military in an area that borders Russia.

Yet the greatest threat to the remote land is probably tourism. Hikers tramp down the lichen on reindeer paths, and those paths are then abandoned by reindeer. Tourists generally live outdoors, spreading litter, and campers start forest fires. Distances are vast, and tourists tend to drive fast, killing hundreds of reindeer each year on the roads.

Contributions for Environmental Protection as a percentage of economic performance in 1990



FCKW original federal states

Maneka Gandhi is India's ex-Minister of State for Environment and Forests.