

NATURAL CALAMITIES AND THEIR REMEDIES

BANGLADESH remains one of the problem-ridden and poorest countries of the world. Eighty-six per cent of its population live an inhuman life below the subsistence level. Besides innumerable social, political, economic and cultural problems, the country is beset with such calamities as flood, drought, tornado, cyclone, tidal bore and erosion. Despite the fact that these elements of nature visit us almost regularly, we have failed so far to learn any lesson from them and to find the remedies that lie in the Nature itself.

Cyclone-Prone: Main Reasons

a) The cyclone that is formed in the Bay of Bengal generally heads for north-west, north and north-easterly direction. But at times, under the influence of westerly wind, it changes its course and moves towards the north, north-east and eastern direction to hit the coastal areas of West Bengal-Bangladesh, Bangladesh and Burma.

b) Up to a distance of 700 km off the coast of Bangladesh, the sea is less deep (0-600'). This shallowness warms up the surface water, which in its turn, attracts the cyclonic storm.

c) Incidence of cyclone is also explained by the fact that depression forms frequently before and after the rainy season.

Causes of High Tidal Bore

a) Over a stretch of up to 700 km, a process of siltation and creation of continental shelf has been going on for hundreds of years. The depth here ranges from 0 to 600 feet, which makes the sea more active here. Due to this siltation, even a 5-7 feet tidal bore swells up a few times when it crosses over the shallow continental shelf.

b) The Bay of Bengal is

comparatively wider in its southern part, while it is narrower along the coast of Bangladesh, assuming a funnel-like shape. This also makes the surging water to bulge up, sometimes up to a height of 25-30 feet.

c) And then there is the law of sea tide. If the cyclonic storm takes place at the time of high tides, water tends to go up.

There is no denying the fact that water lies at the root of all these cyclone, tidal bore, tornado, drought, flood and erosion. Therefore, it needs reasonable management of water resources, coordination and control of natural laws in order to prevent and reduce the intensity of, and the havoc done by, these natural calamities.

Water Management

a) Withdrawal of water by India through Farakka barrage is undoubtedly a major problem for the distribution of water in Bangladesh. Moreover, the distribution of water of another fifty-four common rivers is also unplanned and irregular. Our national water management presupposes an overall and justified solution of these issues.

b) Regular dredging, planned canal digging, erection of embankments etc. ensure optimal distribution of water round the year and facilitate improved farming activities and navigation. This will lessen the pressure of water flow at the confluence of Meghna, and the western region of the country will get enough water for its use.

c) Planned plantation should be done in the fallow and non-crop lands.

d) Vegetables should be grown on rooftops, fences and strips around the houses. It will prevent the sunrays to heat up the earth and thus help lower the intensity of depression.

e) Reclamation of land from the continental shelf, marshes and rivers is also a necessity.

Warning System

The people of concerned area should be informed, through Radio, TV and other

media, of the actual position of the cyclone, its size and nature. It is essential to erect a radio relay station in Bhola to serve the coastal and char areas of Greater Noakhali, Bhola, Patuakhali, Barguna and adjacent districts. The warning should be precise, simple and specific about when, where and at what velocity the cyclone will hit, what will be the height of tidal bore and what precautionary measures should be taken. The present set of signals from No 1 to No 10 should be modified or given up, since the people cannot make anything out of it. It would be better if they are told of the real state of cyclone and probable tidal bore through siren and loudspeakers. The warning system should be such that with the sounding of a particular signal, people will leave their home and go to the nearest shelters. For trawlers, fishing boats, passenger boats and ships, signals should be given by black flags and main lights during daytime, by red lights during nighttime and by both black flags and red lights on cloudy days. At the same time, there must be arrangements for an alternative system in case the conventional signalling fails. As soon as the news of the imminent cyclone is heard or received, all the vessels should return to the coast and take refuge in safer places. There must be radio sets and life jackets in these vessels. Those who cannot afford the life jackets may look for an alternative using plastic, hollow bamboo or shola. Foreign ships and planes should be advised not to navigate or fly through the disaster areas.

There is No Alternative to Training/Exercise

To face any probable disaster, coastal and char people should methodically be taught, through radio, TV and other agencies, about how to save their lives and properties.

It is essential to conduct joint exercise with the participation of armed forces and concerned agencies so that dealing with the disaster be-

Maj Gen Mohammed Wajhiullah (Rtd)

comes speedy and easier.

Permanent Measures

A number of short, medium and long-term measures should be taken by the government, non-government, private bodies and NGOs.

These are:

Changing the Pattern of the House

The thatched huts, tin-roofed houses and brick-built structures of the coastal and offshore islands are mostly rectangular or nearly square shaped, comparatively wide in length and breadth. This very shape and size make the houses completely vulnerable to the pressure of cyclone and tidal bore. Therefore, the

storm and surging water. Even if the storm lashes at a speed of 300 km per hour, it will affect only a part of the house and, therefore, the damage will be minimum. The pillars should be installed at a depth of 1 to 2 feet in the original earth under the elevated foundation. At the bottom of the pillar there should be rectangular or cross-barred wooden/metallic rods attached to it so that the pillar is not uprooted. The earth of the elevated foundation may be mixed with hay and husk to increase its compactness. This may not be an welcome idea to many, but they should be motivated. Government initiative is needed here. Architects and engineers may also help popu-

larise this new method of building houses.

Construction of Cellar
Cellar is an alternative system where household usefuls and valuables may be safely preserved. It should be a one to two feet deep underground ditch, excavated in the floor of bed room, kitchen, drawing



Hundreds of miles of roads and embankments were washed away and thousands of boats lost in the April 91 cyclone.

houses should be designed in a fashion so that it evades that pressure as much as possible and withstand the onslaught. The houses, their foundations and the fence-walls around them should be circular. Overhead roofs should also be round-shaped like mushrooms. This circular shape will help evade the pressure of cyclonic

fishery boats, may be saved by submerging in water and binding them to poles in a place where there would be no or less current. Big boats, launches and ships should be sent to upstream or be kept in safer places. In a word, it is possible to save almost all the household belongings if precautionary measures are taken.

These learning centres, business and industrial units can be built on the slopes of embankments at a minimum cost.

room, cowshed, shop, barn, mosque etc. to be furnished with polythene paper to make it watertight. On its top, a platform should be made with bamboo or wooden planks with an opening hole through which household goods are to be kept inside. Then it should be closed and covered with earth. Similar cellar may be made for preserving poultry and cattle fodder.

Homestead ditches and ponds should be re-excavated to hold more water for the sake of floating the wooden bedsteads, tables, chairs and other furniture, binding them firmly with poles so that they are not washed away. Fishing nets, coconuts and other fruits can also be saved in the same manner. Small and medium sized boats, including the

Provision must be there that these centres can be used as schools, madrasahs, colleges, mass literacy centres, Post Office, health centres, community centres etc. Besides, arrangements may be made for bazars, improved variety cattle breeding centres, poultry farms and fish cultivation.

Afforestation and establishment of nursery in its slopes will encourage the people to further afforestation. Developed agriculture should be assured. There should be model agricultural farm among each 3/4 ponds. Possibilities of setting up locally based cottage industries, fish farming, milk processing, blanket making with sheep's fur should be explored.

It simply calls for a plan and practice.

Making Shelters

Most of the existing cyclone shelters in the coastal areas and offshore islands are not useful enough. If these shelters are adequate in number and meet the basic needs, only then people will leave their houses to take refuge in them.

Protection centres should be completely secured and hygienic and there must be arrangements for keeping cattle, poultry and few essential belongings. The centres should be easily accessible, and communication facilities should be such that relief goods could reach there smoothly.

Ponds with 25 feet high and wide banks may be excavated.

These learning centres, business and industrial units can be built on the slopes of embankments at a minimum cost.

Our slogan should be that agriculture is our main resort, industry is our inevitable link and appropriate technology is our strength. Rich and middle strata people should be encouraged to build multi-storied buildings, and arrangements should be made for extending to them easy loans for this purpose. Government and private insti-

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tutions, NGOs and others should also be asked to build multi-storied buildings for their offices and resthouses, so that these edifices can serve as shelters in time of disaster.

Afforestation

Scarcity of trees in the coastal belt and off-shore islands is one of the reasons behind the high intensity of cyclone storms there. In order to prevent and lower it, on the one hand, and to ensure a safe refuge for the people and provision for fuel and fruits, on the other, afforestation is a must for these areas. To this end trees should be planted in the new char lands, on the either side of the coastal embankments, in and around office premises, rest-houses, pond banks, roadsides i.e. wherever there are spaces to do so. Initiative in this regard should be taken both at government and non-government levels and people should be motivated. Big trees are to be planted on either side of embankments and highways, and less leafy trees should be planted on the south, south-eastern sides of smaller roads and streets. No matter wherever the trees are planted, government agencies or institutions, union parishads and the proprietors of the adjacent holdings will be responsible for looking after their upbringing and maintenance. The proprietors of the adjacent holdings will get a share of these trees and the rest will go to the government.

There must be a provision of punishing the proprietors of adjacent holdings in case of theft or damage done to the trees.

Besides, steps should be taken to plant trees in and around the homesteads. There must be fruit-bearing trees including at least one palm tree, a number of coconut trees, one bamboo grove and some banana trees.

It will be expedient to sow seeds of different plants in the hilly areas of Chittagong, Hill Tracts and new char lands with the help of helicopters, since it is worthwhile to sow, not plant, over vast tracts of land. (To be concluded)

Colombia's Black Community Joins Hands with the Forest Indians

by Ruth Mayne

CHOCO, COLOMBIA: For once, in one of the wettest regions of the world, it is not raining.

But that is the only relief for Nohemi, who spends the five-hour dug-out canoe journey squatting on a wooden plank, bailing out and explaining, above the noise of the outboard motor, the unprecedented but fragile alliance between Colombian Indians and the country's people of African descent.

She herself personifies the tentative ending of centuries of separateness, because she is a black woman working for an Indian organisation, the Regional Indigenous Organisation Embera-Waunana

over land, and, as in the Amazon, mercury pollution of the rivers from gold mining which — means less fish.

"Look at the height of the current generation of Indians," says Nohemi. "They are shorter than their parents because of the worsening diet."

Both communities suffered a slow deterioration of their conditions, but saw each other as enemies not allies. "The blacks felt threatened by the creation of Indian 'reserves', and the Indians have had to fight blacks off the land to stop them selling wood to the timber companies," explains Nohemi.

What has brought them together is the fear that the

"Government plans for the Pacific coast provide no guarantees for the basic human rights of the local communities or for the conservation of natural resources."

"The plans are inhumane, unjust and will mean the cultural and social death of our communities."

That is why Nohemi has made the arduous journey down the San Juan River to the still-house village of Noamama, where tall, broad-based black campesinos (peasants) are discussing common problems of land, culture and community with the smaller beaded and painted Indians.

"The government is strong and has firm plans," a black leader tells the meeting, "but we are dispersed and unorganised. If we don't unite, we'll be wiped out."

An Indian leader agrees: "So far we have been completely excluded from the planning process and our organisations are invisible in government plans."

The 11 different Indian peoples in the region have considerable experience of organising themselves against outsiders, and are helping the blacks — only one per cent of whom have legally recognised land titles — to do so.

Says Miguel, a founder of OREWA: "At first we considered the blacks a threat and called you colonisers, but now we realise that if the indigenous have rights to land, so should the original black population who have been here almost 500 years."

Local organisations have designated an area of Choco as Great Waunana-Black Territory. They are asking the consultation in government plans, effective protection of natural resources, and more investment in their communities. International investors have been asked not to provide finance unless these conditions are met.

Cooperation is not always easy. Despite centuries of coexistence, there is no common culture and little mixing. Leaders of both are careful to stress that unification does not have to mean living together. Conflicts still break out over land, though they can often be dealt with at the previously unheard-of community meetings like the one at Noamama.

But the incentive is strong. Says Miguel: "Five hundred years ago the Spanish invaders killed three-and-a-half million Indians in 30 years, destroyed our political and social organisation and stole our wealth. We won't survive if history repeats itself." PANOS



(OREWA), in Choco State on Colombia's Pacific coast.

She worked for years to gain acceptance, and then almost lost everything because of the "scandal" of her marriage to an Indian leader.

There is pain in her eyes when she recalls those days, but in the end, she says, "love conquered everything."

Similar determination is needed now, because the 110,000 Indians and the even larger number of descendants of escaped slaves brought from Africa to work the Spanish gold mines five centuries ago are fighting for the life of their communities in one of the world's most biologically rich rainforests. A decade of "development" has brought the usual catalogue of problems: deforestation, soil loss, fights

next round of development, in the shape of the government's ambitious Pacific Plan, will prove even deadlier to their environment.

The Plan involves building ports on the Caribbean and Pacific coasts connected by road, rail and oil pipelines. The 230 kilometer (143 mile) "land bridge" will be a competitor for the Panama Canal. It will provide a gateway to the booming markets of the "Pacific rim", seen by many pundits as the focus of world economic growth in the next century.

The whole design is based on the rapid extraction and export of natural resources, partly to pay off the country's US\$16 billion foreign debt. Says the Bishop of Quibdo, capital of Choco State:

THE rare silver leaf monkey faces extinction in Java, Indonesia.

Ten years ago, it was proposed that this primate (*Semnopithecus auratus*) be fully protected, particularly in Java, Indonesia's most thickly populated island with a population of 120 million people.

The monkey is traded in Java and Bali as a pet. It is also caught to supply an ingredient in the preparation of traditional medicine. A few are exported to Japan, Taiwan, the United States and Europe.

The silver leaf monkey is lightly built and slender, with hind legs longer than the front legs. A thin tail is as long as the head and body.

They are bright yellow or orange at birth, and turn to black after about six months. The adult is dull gray to black but pale tips in the longer hairs give it a silvery appearance.

The silver leaf and other Southeast Asian leaf monkeys are the smallest among their kind. The head length is about 45 centimetres and the body is 75 cm long. They weigh from four to nine kilos.

Silver leaf monkeys are found in South and Southeast Asia, from southern Burma, Thailand, and Indochina to Sumatra, Borneo, Java, Bali and Lombok.

They are called "lutong" in Malaysia, Central Java, and Borneo; "budeng" and "ben-tung" in Central Java and East Java; "petu" and "hirengen" in

Extinction Looms for a Small Forest Monkey

Encroachments on a teak forest in Central Java are an ever increasing threat to many species of wildlife. by Rudy Fernandez.

Bali

In Southeast Asia, as in western Thailand, groups of silver leaf monkeys are found high in trees in evergreen forests, generally 40-50 metres above the ground. In Malaysia, they are found in mangrove and coastal forests and plantations along a part of the west coast.

In Java and Sumatra, they live in inland forests, from lowlands to higher elevations up to 1,700 metres above sea level. In Central and East Java, they live in teak forests.

Leaves are their major food and the leaf petioles of teak are the most favoured.

In recent years, the population of silver leaf monkeys in Java has declined considerably, according to Dr Djuwantoko of the University of Gadjah Mada in Yogyakarta. He spent a year studying the habitat of the silver leaf monkey in a teak plantation in Cepu, Central Java. The Cepu forest is one of the oldest in Java.

From 1985 to 1990, the silver leaf monkey population in the Cepu teak forest decreased

from 47 to 17, a five per cent annual reduction rate, estimates Dr Djuwantoko. A holder of a doctorate in Forest Biological Sciences from the University of the Philippines in Los Banos, he finished his doctorate last March as a scholar of the Southeast Asian Ministers of Education Organisation-Southeast Asian Regional Centre for Graduate Study and Research in Agriculture.

"This is very disappointing indeed," he says. The disturbance of the monkeys' habitat was caused by various factors, including the clear-cutting of the teak trees. These trees, where the silver leaf monkeys live, have been replaced with young teak stands.

Dr Djuwantoko explains that since clear-cutting removes all standing trees as well as the undergrowth, no vegetation is left. When land is prepared for new plantations, clear-cutting by burning is the cheapest and easiest method used.

Another reason for the decrease in the silver leaf monkey population is illegal logging by the local people. This

has reduced the standing stock of teak, thus reducing forest density. As a result, weeds have begun to grow in the open spaces, where in the dry season they easily catch fire.

Other threats to the monkeys' habitat are charcoal making and firewood gathering in the forest, cattle grazing and the encroachment into the forests of squatters. Then there are predations, accidents, poaching and illegal hunting with the use of traps, guns and other methods.

On three occasions, says Dr Djuwantoko, he has seen big birds of prey (the crested serpent eagle) trying to catch infant and juvenile leaf monkeys when they roosted at dusk. Villagers who hunt or collect firewood or make charcoal in the forest also bring their dogs. When the dogs see the monkeys, they rush and attack them. When they are still quite young the monkeys fall to the ground and are attacked by dogs.

Dr Djuwantoko underscored

the need to doubly protect their habitats, the most preferred being the natural vegetation along the seasonal rivers, also called gallery forests. "Cutting vegetation in forests should be strictly prohibited," he says.

He also recommends enrichment planting of local trees to cover as food, rooting places, sewer, playground or to provide a habitat for the silver leaf monkeys and other wildlife. Conservation programmes for leaf monkeys and other wildlife should be jointly drawn up by forestry officers and the local community.

Even if the major use of the teak forest is for timber production, the habitat of the silver leaf monkeys could still be protected by managing forest exploitation. For example, the logging of teak could be controlled to avoid over-harvesting and greatly reducing forest cover.

Educating villagers on the wise exploitation of forest resources could go a long way to protect the forest itself. Villagers should know that over-exploitation in the long run works against their interests. Which is why certain regulations are essential to ensure that the forest resources they use for fuelwood or charcoal making are not depleted.

Dr Djuwantoko would like more research done on the silver leaf monkey, especially on its ecology and behaviour and the carrying capacity of the teak forest. — Dephnews.

Long Live the Crocodile

Profitable crocodile-breeding farms in South Africa claim to actually help in increasing the numbers and ensuring the survival of the animals. Gavin Evans of IPS reports.

dip in demand. But with gold — the mineral — in long-term decline as an export product in South Africa, some optimists are now jokingly crocodiles may be the future.

The largest and most prosperous of South Africa's crocodile businesses is the Izintaba Crocodile Farm at Hartbeespoort. Located some 50 kms north of Johannesburg, the farm is surrounded by wired fences and spiked electronic gates.

The German owner, J C Kuhlmann, wouldn't confirm anything more than that he was farming crocodiles for export.

He refused to be interviewed and would not allow a tour of his farm. Attempts to visit several other farms met with a similar response. The Israelis running the Kwena Gardens Crocodile

Paradise at Sun City in the 'independent' homeland of Bophuthatswana were happy to be interviewed, however.

They do not claim that their rapidly growing croc farm (which adjoins the tourist area) is the biggest in Africa, but they do claim to have the continent's largest reptile.

His name is 'Footloose' because he lost a foot in a fight in his pre-captivity days. He's 5.5 metres long, 100 years old, and weighs in at almost 1,000 kgs.

Australian salt water crocs grow to 10 metres. The reptiles can swim at 25 kms per hour and run at nearly 50 for short bursts. They have been known to kill lions (though they avoid elephants and hippos).

Their main enemy is each other. Crocs are notorious cannibals, especially in the

wild. Not having shown much evolutionary advance since their days of hanging out with dinosaurs, crocodiles do not fare too well on the animal intelligence stakes.

Even when raised in captivity, they go hunting within 24 hours, by which time they'll have forgotten everything about having their food delivered.

Mickey Klainman, an official of the Israeli company, Clal, which runs the croc paradise, says they now have over 3,000 crocodiles on the adjoining farm.

Most are tiny, and will eventually be turned into belts, bags, shoes and croc steaks.

Klainman explains that the Geneva Convention of the International Trade in Endangered Species (Cites) specifies important differences between farming and ranching of the beasts, with the former being

preferred by conservationists. "With a farm you get your quota to catch mature animals, you bring them here, and can do whatever you want with the young from the eggs they lay, but you can't kill the mature animal," says Klainman.

Thus, Footloose and Ramatali can expect to keep on growing and live to their full 150 years without being in any danger from their jailers.

"The two aspects to our business are both good for us and good for the crocodiles," asserts Klainman.

The farm is trying to meet some of the huge demand on the international market, there being few countries which are not interested in crocodile products, he says.

"By breeding crocs we are actually helping to increase their numbers and ensure their survival," claims Klainman.