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INSIDE SANCTUARY

ASIA: THE COMPLETE ECOLOGY & WILDLIFE BI-MONTHLY

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THE NORTH-EAST

by S. Deb Roy

The author, one of the architects of the success of the Manas Tiger Reserve, a World Heritage Site which is now being devastated thanks to unthinking violence, has spent a lifetime protecting the forests of the North-east. He retired recently as the Additional Inspector General of Forests, but will be involved with several conservation organisations in an advisory capacity in the years to come. His reading of the North-east situation is dismal, but his underlying message is one of hope — because he believes that nature is still capable of responding positively if we stop mismanaging its intricate systems.

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*Only an ignoramus would deny that floods would be greatly aggravated if forests such as those of the Namdapha Tiger Reserve in Arunachal (**facing page**) were to be cut down. Yet the devastation continues across most of the North-east. With the degradation of critical watersheds, floods have begun to occur at places where they were unheard of earlier.*

Kunal Verma

I COME FROM ASSAM and it destroys me to see what has been done to this exquisite corner of the earth. Frankly, if someone who had seen the North-eastern States about 100 years ago were to return to Earth, he would probably imagine that a war had ravaged the land. Verdant forests have been hacked. Rivers have been degraded. Unique wild animals have been pushed to the brink of extinction. Landslides and floods are the order of the day. Given such circumstances, should it surprise anyone that a once-contented peaceful people have been reduced to poverty and anger?

The change over the last century has been so dramatic that even timberbased industries are now dependent for their raw materials on wood imported from far away Malaysia, an unthinkable situation even a decade ago. All this in the name of so-called development. The reasons for this tragic erosion of our ecological security are multi-fold, but stem largely from our misguided urge to improve our living conditions by consuming renewable resources. The catastrophic results, in terms of floods alone, can probably only be appreciated by those who have experienced the carnage of the Brahmaputra river. Periodic local droughts, of course, add to the people's woes, as planners and politicians struggle to cope with problems they are unable to comprehend.

Lest people imagine my concern to be limited to the distress caused to nature 'for nature's sake', I should clarify that in purely economic and human terms the untold loss of agricultural productivity, public property and human life in the North-east on account of the abuse of the unwritten laws of nature and ecology is immeasurable. Moreover, the magnitude of such misery is ascending every year. Sadly, instead of addressing the problem at its root, the State Governments of the region have been reduced to approaching the Central Government with begging bowls after each wave of such natural calamities.

To analyse all aspects of the hydra-headed monster leading to the present conditions is clearly beyond the scope of an article written for a popular publication. One issue, however, certainly merits further elucidation here and that is the subject of floods. Floods in the Brahmaputra will dominate the news in the coming weeks and months and will be central to the lives of all who live in the folds of the Brahmaputra valley.

The brunt of the floods, of course, are felt by those who live in the plains. Here in Assam the fury of annual floods costs the nation hundreds of crores each year. Invaluable financial resources, which could and should have been utilised to improve the living conditions of locals, must thus be diverted to counter the destructive effects of floods. Though some natural cover does still clothe the land, it is obvious that had the catchment forests of the numerous rivers and streams been healthier, the problem would be greatly reduced. I should know, for I have studied the predicament very closely when I was posted for years at the Manas Tiger Reserve, one of the few remaining well-forested tracts in the region.

When the monsoon breaks over the North-east the water begins to surge unimpeded towards the plains from three sides because the hill states bordering Assam are virtually bald. With the water comes a phenomenal amount of valuable top soil which flows all the way to Bangladesh! What remains as an unwelcome gift for the people of Assam is sandy earth, which now raises and clogs stream beds, adding further to the fury of the annual recurring floods. There seems no way out of the tailspin.

Futile efforts

Out of desperation, people ask their leaders for immediate relief. Apart from food, clothing and medicine, aid takes the form of miles and miles of earthen bunds or embankments constructed along vulnerable points along several rivers including the mighty Brahmaputra. Most often, such bunds serve as little more than psychological protection, as they are breached with regularity by raging torrents which cause death and destruction in their wake. And when such floods recede, agricultural fields are found covered with sand or other such unproductive soil. As a result of continuous erosion over the years, even the water-table in many areas has fallen dramatically, further affecting agricultural production.

By now no one but an ignoramus will deny that floods are greatly aggravated by deforestation... yet the devastation continues. Due to the degradation of our North-eastern forest covered watersheds the problem of flooding has begun to take place in areas where flooding was earlier unknown. Two such examples are the districts of Golaghat and Nagaon. Here various measures like Social Forestry, Waste Land Development and the like have been instituted in an attempt to restore lost ecological conditions. The effects of all such efforts should certainly make some difference, but I am afraid, unless we are also able to treat the watershed areas up in the neighbouring hills, no efforts in the plains can usher in better times.

But why have we so purposefully destroyed the hills of the North-east? The timber trade and the conver-

sion of forests to tea and other such crops is one obvious reason. Another is the practice of *jhoom* or shifting cultivation, better known as slash-and-burn. Arguably this ancient method of agriculture in the steep slopes may once have been a sustainable means to harvest the land when it was possible for cultivators to maintain a proper cycle (time gap between two successive *jhooming* operations in the same place). But this is no longer the case. The hills had been sparsely populated till the last century but this population gradually rose. And the intensity of *jhooming* rose steeply as well. With food becoming increasingly scarce, and land becoming more and more degraded, a reduction of the jhooming cycle was inevitable. Today the position is so acute that in most areas the cycle has been brought down to four to five years compared to a minimum advisable period of 35 to 40 years! How can any land survive such assault? Downstream flooding will never be stopped, unless unsustainable practices in the hills are stopped first.

" Aid takes the form of miles of earthen bunds or embankments constructed along vulnerable points along several rivers, including the mighty Brahmaputra. Most often, such bunds serve as little more than psychological protection, as they are breached with regularity by raging torrents which cause death and destruction in their wake."

Natural solutions

Nature works automatically to repair the damage we cause. Once a *jhoomed* area is abandoned by the shifting cultivators, secondary forest cover begins to creep in. From my experience I have seen that bamboo is one of the chief plants, in association with other grasses and trees, to begin the recolonisation process. Between two successive *jhoomings*, if enough time is allowed to pass, such secondary forest cover gradually advances in predictable stages of natural succession, through natural interactions. Birds carry seeds, wind and water spur the process of pollination. And the ash left behind by the burn, serves to fertilise the soil. But with a drastic reduction of the cycle the soil is simply not given the chance to regenerate. And with every repeated *jhoom* the soils wither. Eventually, a hardpressed people are forced to migrate to other areas, leaving behind, near sterile deserts where nature and man both once thrived.

Today, very few places in Assam have escaped *jhooming*. In such areas Reserved Forests have been brought under the strict control of respective forest departments. In comparison to this small proportion of Reserved Forests, there exists a large extensive area as private or community land, where forests exist. In many areas, forests are also controlled by District Council Authorities under the powers conferred on them by the Sixth Schedule. On such areas, the forest departments have no control whatsoever. Silvicultural practices for the management of such forest areas are practically unknown and the sole activity is to exploit such resources for short-term monetary gains. *Jhooming* also is rampant and the crossfire is proving devastating. The tragedy is compounded by the fact that a tiny exploitative minority are manipulating masses of uneducated poor in the hills to participate in the destruction. Working as labourers towards ends determined by businessmen, such people can still barely manage two square meals a day, even as they devastate the very earth upon which their future security hinges.

Forty or 50 years ago many traditional customs came into play to protect the environment in which people lived, even while practising *jhooming*. Areas along depressions between two hills were, for instance, left untouched as they were regarded as 'sacred groves'. Superstitions prevailed preventing people from cutting trees here as it was believed this would bring down the wrath of God on the people. Were these ingenious ways, designed by wise chiefs, to save the community's life supporting systems? I believe so. But now, with 'half-education' spreading, people have begun to see through such 'super-

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A soaring demand for rhino horn has sent prices skyrocketing. Despite the valiant efforts of the wildlife wing, poaching and habitat destruction threaten the rhino ***(overleaf)*** *with possible extinction.*

Pallava Bagla

stitions'. The consequences once again fall upon the Earth itself, which is now raped by modern tribals whose desire for cash is no less potent than that of their urban counterparts.

Downhill Slide

Though we now seem to have arrived at the root of the problem, solutions remain elusive. Though some of the hill areas do have other resources to allow people to look after their basic needs, the main pressure still falls largely on the forest. In recent years, therefore, we have seen a mushrooming of forest-based small and large industries like saw, plywood and paper mills. The installed capacity of such units far exceeds the carrying capacity of the land, making sustained yields no more than a wishful dream. Malpractices and illegal removal of forest produce is thus the order of the day. The small state of Nagaland has probably more such timber based industries per unit area than any other region of South Asia! Little wonder, then that while the adjoining state of Assam was reeling under its third wave of vicious floods during the last monsoon, Nagaland was experiencing a devastating drought!

One way out of this downhill slide would be to begin the slow climb back to environmental sanity through the creation of a massive series of soil and moisture conservation schemes in the catchment forests of the North-east. But do we see even the slightest signs that such good sense might prevail? No. Instead foolish land management practices of yesterday continue unabated. Though in Assam commercial felling of trees has been banned since 1986, such statutes do not apply to wood poachers, nor to encroachers who blithely clear jungles. Such people operate under indirect or even direct protection of short-sighted, but powerful politicians. It pains me to see the consequences of such suicidal politics. Nearly 1,75,000 hectares of thick natural cover along interstate border areas have been cleared. Border disputes provide the necessary alibi for these predators. Thus are the vital catchment areas of rivers and streams running through the flood plains of the Brahmaputra and Barak valleys being devastated. I know of instances where some State Governments have actually given *grants* to establish public institutions within Reserved Forests. All this despite the so-called stringent Forest Conservation Act of 1980, which in many cases has stood in the way of genuine development projects for Assam.

I laugh sometimes to see how 'developers' are now collapsing under the burden of their own senselessness. A recently set up paper mill at Jagiroad, for instance, now cannot obtain enough of the necessary raw materials. Tea estates are suffering gross soil erosion. Today everyone has begun to talk of saving nature, environment and ecology. In the press of voices my one voice may well be lost, but I am a forester and I must speak for the forest which I have tried to protect all my life. Though I cannot possibly pretend to comprehend all the issues that seem to come into play, I feel the North-east is crying out for a return to the traditional way of hill life which protected both the people and forests for all these years. And in the evening of my life I can point out to the country that I love, that the few Reserved Forests that remain in the North-east must be saved at all costs... or the very lives of our children will be at risk tomorrow.

"No one but an ignoramus will deny that floods are greatly aggravated by deforestation... yet the devastation continues. Due to the degradation of our North-eastern forest covered watersheds the problem of flooding has begun to take place in areas where flooding was earlier unknown. "

A Troubled Valley

But who thinks of tomorrow? In the North-east the problems of today, including floods and, of late, violence, take precedence over all else. Border disputes between hill states, stemming from the desire to exploit rich forest wealth, merely compound the many problems. In search of ways to win cheap popularity, politicians actively work towards

the conversion of forest land for agriculture so as to win votes. All this is going to cost the nation dear. Most of these victim areas are marginal lands at best, incapable of supporting agricultural crops and even these are being stripped of their fragile top soil. In such circumstance, all forest based industries are doomed. Soon they will have no raw materials to run their units. The paper mill at Jagiroad is, for instance, already in trouble within a few short years of its going into production.

For the people of the North-east there seems to be little alternative but to judiciously utilise whatever renewable natural resources remain. But this is easier said than done, for the forest stock has been depleted to levels from which regeneration is near-impossible. What is worse, with increased demands from an exploding population the pressure on forests is going up, not down. Tragically, age-old customs which might even have provided solutions to the North-east dilemma, have been abandoned in favour of the more destructive 'modernisation'. This is why the Sixth Schedule, intended to be a generous gift to the hill people to enable them to exercise rights and controls over their own natural wealth, resulted merely in intensified plunder and further impoverishment of the land.

"Poachers are prepared to risk their lives in their quest for rhino horn which is which is now almost worth its weight in gold! The prolonged agitation in Assam probably had its first casualty in the protection of wildlife."

I wish such views of the troubled Brahmaputra Valley were no more than the biased opinions of a disgruntled and disillusioned forester. Unfortunately, they are all too true and this fact will come harshly to light in due course. In spite of being confronted with reality the powers that be seem all to eager to avoid taking the steps necessary to restore ecological health to the North-east. Right now, for instance, instead of planning monolithic projects to control the waters of the Brahmaputra, or usher in large scale industrialisation, we should be conducting studies and evaluations based on which we could sustain ourselves through smaller, ecologically sound, projects without overusing our natural renewable resources. Instead of moves in such directions, we see, in addition to the familiar trailer-loads of Malayasian timber being carted into Assam, truck-loads of immature timber from neighbouring Hill States. Meanwhile the Central Board of Forestry recommends a complete ban on tree felling throughout the country!

Solutions

When, I wonder, will it be realised that hill forests and rivers are the true life support of our country? Did our ancestors revere and worship these natural assets for eons in vain, only to have us wipe them out? In recent times I realise that awareness of the danger of ecological degradation is growing in most parts of India, but I cannot help but feel that the North-east is still blissfully asleep. I do not see an active chain of NGOs working here, but do know that such groups will be very necessary if we are to arrest the ecological slide. But can the problems of the North-east be solved at all? Only time will tell. But if we decide to tackle one problem at a time it would give both, purpose and edge to our endeavours. To my mind the only long-term solution against the ravages of floods in the plains of Assam and also in the adjoining areas probably depends on restoring health to the catchment forests in watersheds of all the rivers and streams flowing through them. This, coupled with more sensible management of land in the plains would call for an Integrated Forest Policy for the entire North-east. Piece-meal endeavours, such as the building of embankments in the plains, or dams in the hills will prove to be counter-productive. In executing such

A traditional way of life ***(overleaf)*** *once protected the forests and rivers of the North-east. Today, misguided notions of development have undermined the relationship of most people with their land.*

Kunal Verma

THE WILDLIFE OF ASSAM

The State of Assam is rich in wild species which are unique not only to our country, but also to the world. Such diversity is a direct result of the wide variation in habitat types. Two of India's most famous wildlife preserves are situated within Assam — the Kaziranga National Park and the Manas Tiger Reserve. While Kaziranga can take pride in saving the home of the rhino against heavy odds, Manas can claim to have saved over 20 species of endangered mammals within its 431 sq.km. boundary. This has led to Manas being listed as a World Heritage Site.

The wildlife of Assam is under threat from pressure on habitat, coupled with the persecution of wild animals by poachers. Encroachers have been kept largely at bay, but the problem is that the habitat occupied by creatures such as the rhino are also ideal for wet cultivation. The wildlife wing has been able to keep such lands relatively free from the grasp of encroachers, but the poaching situation is far from encouraging.

On account of the soaring demand and skyrocketing prices of rhino horn in the international market, poachers find it a most lucrative underworld business. Poachers are prepared to risk their lives in their quest for the contraband which is almost worth its weight in gold! The prolonged agitation in Assam probably had its first casualty in the protection of wildlife. During troubled days, when the civil and police authorities were strained to the hilt with law and order problems, protection of wild animals was the sole duty of the wildlife wing. Being badly understaffed and grossly ill-equipped at that time in many areas, protection measures became very ineffective. The worst example is that of Laokhowa Sanctuary in the District of Nagaon. This area contained 35 to 40 rhinos in the year 1978. But by 1984, not even one was left alive here. Tragically, during the same period, 10 times that number of human lives were lost in the district. Poaching of rhinos also rose steeply in other areas like Kaziranga, Orang and Pabitora. Manas, however escaped thanks to the field staff and their dedication.

Since 1985 various measures have been taken to curb poaching and slowly but surely the incidence of poaching has been slowed to some extent. The Government of India has provided for a special Rhino Protection Scheme, with an outlay of Rs. five crores for five years. There are various other lesser but equally vital in place with Central assistance. The Government of Assam has also done their part by declaring 1781 sq.km. of the existing Reserved Forest as wildlife areas — Sanctuaries or Game Reserves — under the Wildlife Act. Besides, the work of extending the Kaziranga National Park area by 454.5 sq.km. is also being legalised. With such effort on the part of the State Government, the rhino can be said to have returned from the brink. Around 1,200 of these animals seek sanctuary in Kaziranga, despite the sting of the poachers!

The status of the tiger has made a marked improvement in the State, specially in the Project Tiger area, compared to the early 70s. The position of swamp deer has also improved remarkably in Kaziranga and Manas. The rarest of all mammals, the pigmy hog — is also doing extremely well in Manas. The elephant population seems to be on the rise since 1978 when the capture of elephants was stopped in Assam. In fact, we are now faced with a very difficult situation on account of conflicts with humans leading to loss of property and an annual death toll of around 50 people. A lack of sufficient suitable habitat leads the huge animals to seek sustenance outside the forest. I find it ironic that on the one the hand the population of elephants seems to be on the rise and on the other, we are foolishly sacrificing elephant habitats to the onslaught of agriculture.

Commentary

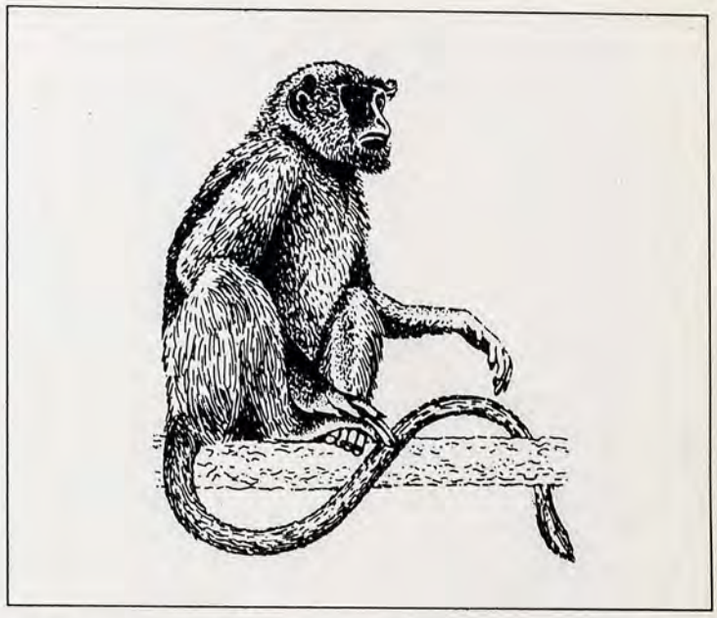
The World Bank is working furiously towards the objective of destroying over 50 million mature, naturally-grown trees in the few remaining forests of India. "Relax we'll finance reforestation programmes to compensate," they say. To prove their point, M.A. Qureshi, Vice President of the World Bank ceremoniously planted this exotic, 20 metres from the entrance to the Sardar Sarovar Project's VIP guest house at Kevadia Colony on October 26, 1988. With a dozen security men and a retinue of gardeners dancing attendance, his feeble plant grew to a grand height of one metre in just under four years! Such are the capabilities of the slick developers growing fat at the cost of natural India

Bittu Sahgal

In the days to come it may well be necessary to control the size of the elephant population in the greater interest of wildlife management because it appears next to impossible to extend their presently available habitat. Even existing habitats are under threat from paper mills which have recently sprung up and which procure huge large quantities of bamboo from secondary forests (after *jhooming*). Such areas were good habitat for the elephants during the monsoon. The Government of India has been appraised of this dangerous situation time and again, but little action has flowed towards a solution.

A plan to introduce the sangai (brow-antlered deer) of Manipur is under active consideration with the Ministry of Forests and Environment. It is well known that the sangai is fighting a last desperate battle for survival in the Lake Laktak and adjoining areas. The total number of such deer has fallen to a mere 50, yet schemes like the Laktak Hydel Project are being pushed, which are certain to have an adverse effect on the animals. If this is not stopped, the future of this deer in the wild seems to be doomed. A technical study of the vegetative cover in the natural habitat of sangai in Manipur and an area named Pabitora in the District of Nagaon in Assam has already been done. The two data as also other environmental factors compared quite favourably which is encouraging. If and when this project comes through it would be the first of its kind in India and all efforts for its success should be worked towards.

Wildlife Management in Assam hardly requires any canopy manipulation or even population management, except in the case of the elephant, which does not have natural predators. The fertility index of this region is so high that the carrying capacity in relation to herbivores and naturally, therefore, of carnivores is really wide. All we really need to do is to stop damaging the area and leave nature to manage its constituents as it knows best.



plans, several other benefits will flow to humans. To begin with massive employment would be generated in the process of undertaking soil and moisture conservation schemes. These would serve to decongest urban centres and put people to work on ecologically sound livelihoods. Nature's response to such programmes will be to quickly improve the water regimes and the biomass productivity of the land. This can only serve to improve the living standards of people who would be partially freed from the clutches of an economic system weighted against them.

But even as we talk of solutions the situation is gradually drifting beyond our control. And, even if work on permanent solutions were to be taken up in right earnest today, the results would only start flowing many years hence. There seems, therefore, no escape from taking up short-term measures to redress problems. The local demand for timber and firewood, for instance, will have to be met under any circumstances. Alternate sources of energy seem to be a distant cry, although these may well be possible to arrange, with well directed effort and resources. In response to the need to grow food, the government seems willing to turn a blind eye to the conversion of forest land to agriculture. More than 10 per cent of the Reserved Forests of Assam are currently under forcible encroachment, a dangerous situation. Instead, organic farming practices based on ecological principles could still help to improve yields in many parts of the North-east where the soil has not yet completely been destroyed.

I reiterate that solutions for the North-east, indeed for the whole country, will come more from our pool of traditional wisdom, and our ancient attitudes to the earth, than the sterile laboratories of modern science.