Apart from the concerns with regards to the process, the most crucial question that stares NBSAP in the face today, is whether it will ever be implemented. What would happen to all the effort that is being put in by thousands of people? Even if all the effort leads to a finely balanced NBSAP being written, it would not be worth it, if it were not backed by a will to put it into action.

Some kind of action has begun emerging within the process already. In Assam the NBSAP co-ordinating agency has initiated a dialogue with the government agencies to revive Joint Forest Management in the state. In Deccan Andhra, one issue that emerged during a village meeting is that if diverse, traditionally available seeds are easily accessible to the farmers, then they would cultivate them. In response to this, the Deccan Development Society has made some seeds available to the *gram panchayats* of these villages. These and a couple of others are few examples of ongoing planning exercises already incorporating elements of implementation. The thematic working group on Education, Awareness and Training trying to get inputs from the Working Group on Wildlife set up the Planning Commission, which has a subgroup on Education and Awareness

At the national level, efforts are being made to meet and involve various government agencies. Though a request to the Planning Commission to set up a working group on biodiversity for the 10th Plan was not accepted, interaction with some key people continues and their inputs would be extremely crucial in drafting of the NBSAP. Meetings are being held with other ministries other than the MoEF and with certain key politicians as well as policy makers.

It is in all these efforts lies a hope, and in the hope, an answer. The work of the thousands of people involved cannot be ignored as easily in relation to that of a handful. Clearly, there is likely to be larger ownership of the process and perhaps a larger demand for its implementation. Where this will all finally end up...only time will tell! ■

Biodiversity Development Options

Develop and be Doomed?

Ashish Kothari*

...But then the victims of what we educated people call "development" do not need to read this article, as much as we ourselves do. For it is our middle and upper classes that benefit from this development and clamour for more and more of it. More big dams, more power stations, more superstores crammed with more consumer goods, more expressways that can take us to our destinations faster, more of everything.... except, perhaps, wisdom?

Humanity entered the 21st century with two strongly contrasting views on the future. One pointed to a new millennium filled with the hope of information technology, genetic engineering and revolutions in health and medicine, the other showcased the irretrievable destruction of our life support systems through toxic wastes, global warming, land degradation, climatic change, and the loss of biodiversity. The former suggested that humanity was the best thing that could have happened to the earth, the latter said it was the worst.

Which viewpoint one tends towards is likely to be partly dependent on one's place in society.

Are you one of India's lucky ("hardworking") citizens, who subscribes to an English newspaper, avoids the vagaries of Mumbai's or Kolkata's or Delhi's or Chennai's weather by travelling to an air-conditioned office in an air-conditioned car and curses the slums that line the road you travel on ? Or are you one of the villagers whose fellow tribals were shot dead by the police, because you happened to be protesting against the take-over of your ancestral lands and forests by a foreign mining company in Orissa ? Or, for that matter, while resisting displacement by a dam in Jharkhand, dispossession by a commercial trawler in the waters off Kerala's coast, or loss of your forest and agricultural lands by a tourist resort in Maharashtra ?

That's a silly question, you'd say, for such a villager would surely not be reading Folio (or Wastelands News). Very right. Even less likely to be reading this article

Hill top lake in Nako, one of the highest round the year habitated villages of the world. In the harsh, almost rainless, high altitude desert of Kinnaur, local communities have channelled the snow melt from the high peaks, over kilometres. With this sole source of water they've grown an oasis of some of India's most amazing almonds, apples, apricots and diverse crops.

Co-ordinator, Technical and Policy Core Group, NBSAP. Associated with the NGO Kalpavriksh, Pune. Apartment 5, Shree Dutta Krupa, 908 Deccan Gymkhana, Pune - 411 004, Maharashtra.

are any of the species of plants and animals which, solely due to human destructiveness, are today facing the final prospect of extinction. Not one or two, but thousands of them, as humanity's bulldozing effect on natural ecosystems undermines their very basis of existence.

But then the victims of what we educated people call "development" do not need to read this article, as much as we ourselves do. For it is our middle and upper classes that benefit from this development and clamour for more and more of it. More big dams, more power stations, more superstores crammed with more consumer goods, more expressways that can take us to our destinations faster, more of everything.... except, perhaps, wisdom ?

The Cost of Development

Worldwide, the commercialisation of agriculture, the growth of the industrial economy, and the more recent push towards globalisation, have all taken a heavy toll of biodiversity and the livelihoods of those directly dependent on natural resources. Conservative estimates put the global loss of forest, fisheries and agricultural productivity, caused by over-exploitation, pollution and other factors, at tens of billions of dollars. This does not even take into account the loss of critical ecosystem values (especially hydrological) and the social, cultural, and non-quantifiable economic losses, which could be even greater than the financially quantified ones. For India, only piecemeal estimates are available: for instance, the Tata Energy Research Institute (TERI) estimates that forest degradation causes the loss of about Rs. 57 billion worth of loss in wood produce alone. If one were to add to this, the loss of non-timber forest produce (NTFP) (absolutely critical for the survival of tribal and other rural communities), the damage would be astoundingly high. Possibly even greater is the loss relating to the destruction of natural habitats which results in an increasingly cycle of droughts and floods and more erratic rainfall. Forestry, fisheries, and agriculture account for over 30 percent of India's GDP, yet the biological diversity that forms their base gets virtually no place in the budgets and plans for these sectors.

If you thought that as an urbanite, you are immune to this, think again. Were it not for the reservoirs that provide Mumbai with at least 30 percent of its drinking water, its citizens or municipality would have to pay through their noses to bring water from longer distances. Cut down the forests of the Simla water catchment sanctuary, and that city will die for lack of water. Where mangrove forests along Orissa's coasts had been destroyed for "development", the cyclone that hit this state in 1999 caused hundreds of crores worth of damage where these forests were still intact and acted as a buffer, the damage was contained.

The impact of the neglect of biodiversity in development planning can be seen in several sectors :

Agriculture

The Green Revolution's stress on promoting monocultures of "high-yielding varieties", has yielded significant production increases. However, the cost has been greater, and we are now paying for it. Foremost is the rapid erosion of crop and livestock (including poultry) diversity, especially from farmer's fields and the pastoralists' pastures. This loss of diversity has undermined the stability of farming systems, led to loss in soil fertility, made farmers more dependent on markets and outside agencies, reduced nutrition once obtained from "wild" foods on farms (e.g. fish and prawns in traditional rice fields), increased the need for expensive and poisonous chemical fertiliser and pesticides, and eroded the genetic diversity on which continuous crop and livestock development is based. The impact is greatest on tens of millions of small farmers and pastoralists. The current draft agricultural policy fails to integrate these issues, focussing as it does on high-yielding hybrids and varieties, large scale agroprocessing, and other such strategies that have already eroded biodiversity and sustainability.

Water resources development

Development of water resources for irrigation, drinking water and other purposes, has been fixated on mega projects. Big dams and irrigation projects have submerged several hundred thousand hectares of forests, displaced millions of people who have in turn put further pressure on natural resources, and led to damages in downstream aquatic and marine habitats. The Proposed National Water Policy makes some of the right noises regarding sustainability, but does not centrally integrate biodiversity and livelihood concerns. The relationship between watersheds and biologically diverse catchments, for instance, remains neglected.

Tourism

One of our most rapidly growing industries, tourism, has led to deforestation, enormous waste generation, and cultural pollution. Even "ecotourism", the latest buzzword, is more a greenwash than anything else. The 9th Plan does not deal with ecological aspects of tourism in a major way. Critical gaps remain in devising truly ecologically friendly modes of tourism, and in promoting the livelihoods of local communities based on more sensitive tourism.

Energy and infrastructure

These are perhaps the sectors in which integration of biodiversity concerns is the weakest. Environment impact assessment procedures remain weak and ineffective (see box). In the last decade or so, the greatly accelerated thrust towards increasing road, rail, and other infrastructure, to meet the demands of the liberalised

Are you one of India's lucky ("Hardworking") citizens, who subscribes to an English newspaper, avoids the vagaries of Mumbai's or Kolkata's or Delhi's or Chennai's wheather by travelling to an air-conditioned office in an air-conditioned car and curses the slums that line the road you travel on ? Or are you one of the villagers whose fellow tribals were shot dead by the police, because you happened to be protesting against the take-over of your ancestral lands and forests by a foreign mining company in Orissa ? Or, for that matter, while resisting displacement by a dam in Jharkhand, dispossession by a commercial trawler in the waters off Kerala's coast, or loss of your forest and agricultural lands by a tourist resort in Maharashtra?

economy, has also resulted in a renewed attack on biodiversity-rich areas and on the natural resource base of millions of people.

Such attacks on India's natural resources are not a matter only for the boardroom discussions of wealthy upper class "environmentalists". Witness, for instance, the repeated agitations by millions of fisherfolks along India's coast. Their main demands : ban commercial trawling in Indian seas, stop all commercial shrimp or prawn farming, implement the Coastal Regulation Zone stipulations restricting destructive activities upto a certain distance inland from the sea, and promote traditional sustainable modes of fishing. The connection between biodiversity in the seas and their own livelihoods, was very clear to those fisherfolk, but had been ignored by those in government who plan fisheries development.

Do We Have an Alternative?

Are environmentalists only the "no-no" brand of romantics and misguided anti-nationals that the proponents of today's development model label them to be? Not quite. Even while protesting against this model, many environmentalists, community activists and sensitive academics, scientists and government officials, are pointing to concrete alternatives, which enhance human welfare in tune with the dynamics of nature. Some examples:

- In **agriculture**, hundreds of farmers and groups are successfully enhancing biodiversity while also increasing productivity and employment potential though organic farming systems. In Zaheerabad area of Andhra Pradesh, *Dalit* women have demonstrated that biologically diverse farming, linked to a people-centered public distribution system, can considerably enhance livelihoods, employment and the nutritional status of the poorest people.
- In **water development**, experiments in diverse agroclimatic conditions show that decentralised water harvesting with catchment protection can produce enough for drinking and agriculture, while actually regenerating and maintaining biological diversity. In Alwar district of Rajasthan, for instance, several hundred villages have boosted agricultural production and eradicated drought, through a network of small checkdams *(johads)*, regenerated catchment forests, and helped revive disappearing catchment forests, and helped revive disappearing wildlife populations.
- In **tourism**, residents of the Rathong Chu and Khangchendzonga region of Sikkim have moved towards an ecologically sensitive model of visitation that provides sustained benefits to local people and fisherfolk at sites in Goa have protected turtle nesting sites as these attract the discerning tourist.
- In **industry**, several experiments with small-scale units using natural dyes, medicinal plants, non-timber forest produce and other biological resources, are demonstrating that sustainable use is possible and desirable. In the Biligiri Hills of Karnataka, for instance, the Vivekananda Girijan Kalyana Kendra has worked with Soliga tribal co-operatives to manage sustainable harvests of medicinal plants, and process them into saleable products.

There are, however, some sectors of our "globalising" economy that remain largely immune to the demands of sustainability. In energy development, for instance, scientists like A.K.N. Reddy and groups like PRAYAS have suggested alternatives focusing on efficiency in production and

distribution, and non-conventional sources, but these remain neglected by the decision-makers. Infrastructure development, in particular ports, expressways and so on, have a long way to go to build in environmental concerns.

For the first time, a comprehensive attempt to build an alternative development vision based on biodiversity concerns, is taking place under the ongoing National Biodiversity Strategy and Action Plan (NBSAP), voices from the grassroots, from practitioners of alternative development strategies, from those who understand the workings of the system and how to change it, will all get built upon in the preparation of this plan. A working group may be set up to integrate biodiversity across all the sectors of the upcoming 10th Plan. If this happens, it could send a clear signal to all central ministries and state governments, that it is time they took biodiversity and nature seriously. The NBSAP could be one small step in the right direction. Ultimately, however, it is only strong citizens' pressure, of the kind mounted by millions of fisherfolk in relation to the fisheries policy, that will alter the course of destructive development our country has taken.

Are environmentalists only the "no-no" brand of romantics and misguided anti-nationals that the proponents of today's development model label them to be? Not quite. ■

Awry Assessments

A key tool meant to ensure that economic development does not undermine the ecological basis on which all life depends is Environmental Impact Assessment (EIA). Unfortunately, a series of recent events has shown what a farce this system has been reduced to, and made people realise what needs to be done to rescue and use its full potential.

In 1994, the Environment Impact Assessment (EIA) Notification (under the Enviroment Protection Act, 1986), made it legally mandatory for 29 industrial and developmental activities to get environmental clearance from the centre. Each of these activities needs to follow a specified procedure, for instance, the preparation of a detailed EIA report and its evaluation by an Impact Assessment Agency. In 1997, the notification was amended to include, as mandatory, a public hearing to be conducted before a project is considered for clearance.

EIAs and pubic hearings are, on paper, progressive tools in the direction of sustainable development planning. EIAs are supposed to give a full understanding of the impact of a proposed project on nature and people, and help assess whether the project should or should not be built. They also form the base of mitigatory plans if the project is approved. A public hearing is the only forum that local residents and concerned groups have to come face to face with project proponents and government authorities and to voice their suggestions and objections.

However, the implementation of both is ridden with concerns. One of these is the preparation of fraudulent and fabricated EIAs, disturbingly commonplace. The international consultant Ernst and Young recently made headlines, when NGOs exposed one of its EIAs, for a dam in Karnataka as being a total lift-off from a previous EIA done on a different dam. Unfortunately, the public condemnation that Ernst and Young got for this, did not deter Tata Energy Research Institute (TERI) which was later contracted to do the EIA for the same project, from producing a shoddy and incomplete report.

There are several reasons for such a situation. Many of the guidelines for EIAs are outdated and incomplete. Expertise to carry out professional EIAs is inadequate, or not easily available. Most serious, however, is the fact that EIAs are usually funded by those who are proposing the project, thereby making independent studies very difficult. The severe lack of public involvement, and non-availability of the full EIA document to the public, are other critical problems. While NGOs and local residents have used public hearings as a forum to raise the lacunae and loopholes in the existing EIAs, the government is under no obligation to incorporate the objections raised in such a hearing. Sometimes, despite serious objections by residents and NGOs along with evidence of negative impacts, projects have been granted clearance, like in the case of a barge mounted power plant in Dakshin Kannada district of Karnataka.

The EIA notification could be one of the most effective means of conserving biodiversity by checking destructive industrial development. However, the above problems need to be tackled to make it so. Most important, EIAs need to be commissioned with funding independent of the project proponents, and be carried out by agencies with a clear track record of integrity. Public involvement needs to be built in centrally, at all stages of the process. Without such changes, these essential tools with remain largely paper tigers.

Kanchi Kohli and Ashish Kothari