DISCUSSION NOTE

Decentralisation and Habitat Conservation: The Indian Experience

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1. INTRODUCTION

Fiscal and administrative decentralisation can be of at least two types. First, it can involve financial and administrative control and decision-making power being moved from one level of the government to another, like from the national to the state government. Secondly, it can involve shifting such control and power from the government to community institutions. As each of these types of decentralisation have different impacts and implications, they need to be looked at separately.

1.1 Decentralisation Within the Government

Before India got its independence, in 1947, governance was essentially centralised with control being exercised by the British Government, from London. Some powers were vested with the British Viceroy, who was assisted by various, essentially advisory, bodies. At independence, India adopted a federal structure with power being shared between the State Governments and the Central Government. There is now a National Parliament of directly elected Members of the *Lok Sabha*, and indirectly elected representatives of States in the *Rajya Sabha*. Correspondingly, there is a legislative assembly in each of the States.

The constitution of India and other related instruments divide up various functions between the States and the Central Government. Certain matters, like law and order, are almost exclusively State subjects, while others, like Defence and External affairs, are exclusively Central subjects. Some, like Rural Development, Forests, and Environment, are concurrent subjects with both the Central Government and the State Governments having jurisdiction.

1.1.1 Management of Forests: Nearly a quarter of the land area of India is legally designated forest land. Though such land might have a variety of habitats, including grasslands, wetlands, mangroves and even rivers and deserts, and some of it might not have any natural ecosystem surviving, nevertheless by virtue of it being so declared it is legally forest land. This represents the largest holding of natural habitat in the country.

The first effort to "nationalise" and centrally control Indian forests was made by the British in 1865, when the first Indian Forest Act was enacted and the control of the government extended over what was then either common resources or privately owned land. This act was replaced, in 1927, again by the British, by a new Indian Forest Act, which is still in force, and which further consolidated the hold of the government over forest land. With independence, in 1947, and the establishment of the Indian Republic, in 1950, the control over these forest lands passed into the hands of the State governments.

Expenditure on forests is primarily controlled by state governments though, as is the system in India, the allocation of financial resources is done by the Planning Commission, at the Center. However, despite this, effective control over these resources remains with the State Governments. Unfortunately, despite the large forest holdings, budgetary allocations for forestry have rarely risen over one percent of the national budget. This is a

reflection of both the Central and the State Government's hesitation to give forest protection and management a high priority.

Revenues from the forests also accrue to State Governments, however there is no correlation between the quantum of forest revenue earned in a State and the expenditure on forest management in that State.

In 1980, the Government of India enacted the Forest (Conservation) Act which specifies that no forest land can be diverted for non-forest use without the clearance of the Government of India. The immediate provocation for this act was said to be the high and increasing rate of deforestation and forest loss due to the diversion of forests for various non-forestry purposes including agriculture and infrastructural projects like dams and roads. In 1986 this act was further amended to bring under its purview even plantations by non-governmental agencies, and the clearing of natural vegetation on forest land.

In other words, in amending the act the central government further consolidated its control over the forests by specifying that states could neither give out forest land to any private or corporate entity nor clear forests of their natural vegetation, without getting the clearance of the Central Government. The former was reportedly to prevent the transfer of forest lands to corporate bodies under the guise of promoting plantations, and the latter was to protect the biodiversity and forest cover in lands which were legally classified as forests.

In 1985, the Government of India set up a National Wastelands Development Board (NWDB) and a consolidated central Ministry for Environment and Forests. Earlier, at the Central Government level, forestry was looked after by a department in the Ministry of Agriculture. The NWDB was given the responsibility, and the resources, to take up massive afforestation programmes and to make forestry a peoples movement. However, the setting up of the NWDB also meant that a larger proportion of the funds available for forestry would now be handled by the Central rather than the State Governments.

To sum up, the trend within the government, since Independence, has been to centralise rather than decentralise administrative and fiscal control over forests. Though the day to day management of forests is still within the purview of State Governments, the Forest (Conservation) Act has centralised the power to divert forest land and to clear fell forests. Similarly, though much of the fiscal power relating to forests remains with the State Governments, the setting up of the NWDB and of the Ministry of Environment and Forests has given the central government control over an increased proportion of the funds to be spent on forestry.

However, among foresters and environmentalists, there is widespread support for the Forest (Conservation) Act. This is primarily because State Governments have, in the past, been insensitive to the needs of forest conservation, favouring instead forest revenues and large infrastructural projects. Statistics show that diversion of forest land for non-forestry purposes was almost a hundred times more before the enforcement of the Forest

(Conservation) Act and, as much of this diversion was for large, infrastructural, projects, local communities who were dependent on the forests for their basic needs were also displaced and otherwise deprived.

The fact that State Governments themselves do not further decentralise power and control, and all decisions are made at the State level rather than at the local, village, level or even the district level, aggravates the problem. One view is that whereas there are sensitivities at the local level for both conservation and social justice imperatives, these sensitivities, especially those relating to environmental conservation, do not permeate up to the State level, where most decisions are made. Therefore, it is felt that central intervention is desirable as the central government is far enough removed from the specifics to be objective, and has also shown somewhat greater concern for the environment.

Ofcourse, some problems remain. For example, there is often an outcry when a village road or a water supply scheme is delayed because it involves diversion of forest land and therefore has to await central government clearance. Consequently, there is a strong demand that limited powers of forest diversion for certain specified purposes be delegated to the State Governments. Desirable as that is, the current difficulties in getting clearance for forest land ensures that all other alternatives are first considered and only where no other alternative is available are forest lands sought to be utilised. Given the rapidly shrinking forest cover in India, this seems a necessity.

1.1.2 Management of Other Habitats: Strong legal protection is accorded to wildlife protected areas (national parks and sanctuaries), and to coastal regions. None of the other habitat types have specific and comprehensive legal protection. Other ecologically vulnerable habitats like mangroves, coral reefs, grasslands, wetlands, and mountains, unless falling within legally designated forest areas or wildlife protected areas, have little legal protection or regulation. However, recent acts including the Environment (Protection) Act (EPA) of 1986 have given general protection to all habitats. Under this act and its various rules, the Central Government and the State Governments can take whatever action they deem fit in order to protect the environment.

A good example is the Coastal Regulation Zone (CRZ) notified under this act in 1991. Under the CRZ, use of, and construction in, the coastal zone of India upto a specified distance from the high tide line are regulated and any deviation needs the special permission of the Central Government.

Similarly, another notification under the EPA has made it legally mandatory to obtain Central Government clearance prior to initiating certain infrastructural projects like dams, roads, industries, mines, etc.

Since the mid 1970s there have been a series of Acts which have empowered the Central Government and its agencies to monitor and regulate pollution. The (Prevention and Control of) Water Pollution Act, 1974, The (Prevention and Control) of Air Pollution Act, 1981, and the setting up of the Central Pollution Control Board are significant in this regard.

Though all the State Governments have by now set up their own Departments of Environment and their own Pollution Control Boards, a large proportion of the financial resources available for the environment continue to be controlled by the Central Government. However, given the indifference to environmental matters at State level, there are advantages in this planned centralisation.

1.2 Decentralising to the Community

Though agricultural land is privately owned, control over forests and other natural habitats has exclusively been with the government. The only exceptions are some village lands, mainly pasture lands, which belong to village communities. Another exception is found in certain predominantly tribal states of North-East India, where most of the forests are under the control of tribal District Councils. Local communities also continue to have rights over many of the forests. Such rights include those of grazing, collection of fire wood, of timber for building or repairing their houses, and over non-timber forest produce, among others.

Only in the last few years has there been an effort at sharing control over natural habitats, especially forest lands, with local communities. Joint Forest Management (described later) is one such initiative where forest departments have involved the local communities in protecting the forests around their villages and, in return, have acknowledged the local community's right to harvest a sustainable level of forest produce and to receive a share of other revenue earned from the forest.

More recently, there has been an effort at establishing ecodevelopment projects (also described later) around some of the wildlife protected areas (PAs). Such projects, apart from developing alternatives to the resources of PAs, also seek to involve the local communities in the management of the PAs. There is also an effort to ensure that the financial and economic benefits from PAs, especially in terms of revenue from tourism, are available primarily to the local communities.

There is also an ongoing demand to introduce a system of joint protected area management (JPAM), similar to joint forest management, where the local communities would be involved in managing and protecting wildlife protected areas. However, JPAM is still being debated.

Clearly, over the last few years, there have been important moves towards decentralisation of government control over forests. Control has been sought to be transferred to local communities with provisions of joint or participatory management.

2. WILDLIFE PROTECTED AREAS MANAGEMENT

India has almost 500 wildlife protected areas (national parks and sanctuaries) covering more than four percent of the country's surface area. These PAs are set up and managed

by State Governments. Till 1972, PAs were set up under various state Acts which differed in nomenclature and provisions from State to State. For example, in 1936 the first National Park in India (the Hailey National Park, now known as the Corbett National Park) was set up in Uttar Pradesh. For the purpose, a special act called the Hailey National Park Act was promulgated in 1936. In 1972, the Government of India enacted the Wild Life (Protection) Act (amended in 1991). The national parks and sanctuaries set up earlier, under any other Act, were all brought under this Act. Since 1972, all new parks and sanctuaries are set up under this Act.

Though this is a Central Act, it essentially gives powers to State Governments to set up and manage national parks and sanctuaries. The Act earlier had a provision enabling the Central Government to also set-up national parks, however this provision was never used and was finally deleted when the Act was amended in 1991.

This Act is decentralised to the extent that, for all practical purposes, it is the State Government and not the Central Government that controls protected areas, it is centralised in the sense that almost no role is allowed to the local community in the management of wildlife protected areas. Though there is a provision for appointing Honorary Wildlife Wardens, and many have been appointed, most often these individuals are eminent conservationists rather than prominent members of the local community.

As far as PA revenues go, the system followed in India de-links revenue from expenditure. Therefore, any revenue earned through tourism or from any other source, by a PA, is automatically credited to the Government account and is not available for expenditure in the PA. The government allocates, each year, a budget to the PA which has no link to the revenue earned by the PA.

At the State level, each state has set up a Wildlife Advisory Board which has, as members, non-officials. However, though this Board has sometimes been effective in taking up crisis issues and lobbying with the government, day to day management of the PAs continues to be entirely in the hands of Government officials.

At the national level there is an Indian Board for Wildlife with a few non official members, chaired by the Prime Minister of India. However, this Board is mainly involved with policy formulation, and also meets very rarely.

In short, the status of PA Management has remained constant for many years, without any trends either towards decentralisation or centralisation. It is only in the last few years that the government has begun to recognise the need for involving local communities in the management of PAs. In the Eighth Plan (1992-97)
the Government of India started a new scheme on ecodevelopment which incorporates the involvement of local communities as an inherent part of PA management.

The factual situation regarding PA management in India is summarised in the table below.

Table 1 : Sectoral Arrangements for PA Management

Y=Yes, N=No, P=Partially

Functions\Powers to	Central Govt.	State Govt.	PA Authorities	Local Community	NGOs	Private Sector
Participate in policy formulation	Y	Y	P[1]	N	P[2]	N
Demarcate area for setting up PA	N	Y	P[3]	P[4]	N	N
Set up a PA	N	Y	N	N	N	N
Decide on a PA management plan/ strategy	N	Y	P[5]	P[6]	P[7]	N
Manage the PA, including regulation and protection	N	N	Y	P[8]	N	N
Issuance of licence	P[9]	P[10]	P[11]	N	N	N

[1] Though PA managers are rarely members of policy formulating bodies, their opinions are often solicited.

[2] NGOs and non-government individuals are members of the State Wildlife Advisory Boards and the Indian Board of Wildlife, which are essentially advisory bodies for policy formulation.

[3]Can only recommend to the State Government, which takes the final decision

[4]Can record their rights over the area sought to be made into a PA and thereby either get that area deleted, have their rights accepted or get compensation for their rights.

[5]Develops and recommends a management plan which is finally approved by the State Government

[6]Only in PAs where ecodevelopment projects have been established.

[7] Only in PAs where ecodevelopment projects have been established.

[8] Only in PAs with ecodevelopment.

[9] For certain matters, like the killing or moving of Schedule I species, the powers are with the Central Government.

[10] Most permissions and licenses can be given only by the State Government

[11] Some powers are usually delegated to PA authorities, especially the power to grant entry permits and to allow overnight stay.

Collect user fee	N	Y	N	N	N	N
Receive revenue share	N	Y	N	N	N	N
Receive donations	N	Y	N	N	P[12]	N
Borrow from financial institutions	Y	Y	N	N	N	N
Borrow from external sources	Y	N	N	N	N	N
Allocate resources to sectors, schemes and programmes	Y	P[13]	N	N	N	N
Approve expenditure	N	Y	P[14]	N	N	N
Inspect, audit and approve accounts	P[15]	Y	P[16]	N	N	N
Supervise procurement	N	P[17]	Y	N	N	N
Generate revenues from the PA	N	Y	N	N	Y[18]	Y[19]

[12] Some NGOs operate around PAs and collect donations to support their work. However, they cannot accept donations on behalf of the PA.

[13] The actual sectoral allocations are done, on the basis of proposals put up by the State Governments, by the Central Planning Commission. However, the State Governments can reappropriate some proportion of these funds.

[14] Some powers are delegated to PA authorities whereby they can approve expenditure already budgeted.

[15] For expenditure sanctioned directly by the Central Government, under centrally sponsored schemes, the final scrutiny of accounts is with the Central Government.

[16] It is the responsibility of the PA authorities to supervise expenditure within the PA.

[17] For certain items, like vehicles, the procurement is sometimes centralised at the State Government level. This is also the case where an item has to be supplied in bulk to many or all the PAs.

[18] In some PAs, NGOs produce literature and provide other services which generate revenues for their work. However, these revenues cannot be credited to the PA account.

[19] Many private entrepreneurs and corporations set up hotels and run other tourist facilities in and around PAs, and thereby earn revenues from the PA.

3. RURAL DEVELOPMENT

Rural development programmes were formally launched in India in 1952, through the Community Development Programme. This basic programme continues till today, though with many modifications.

The Community Development Programme (CDP) has, right from the start, stressed on decentralisation, community participation and sectoral integration. The programme is implemented through village level functionaries, called Village Level Workers (VLWs), and focusses heavily on three village level institutions : Panchayats (village or local self governments), cooperatives and rural primary schools.

CDPs attempted to integrate all the various types of rural development activities, especially agriculture, including fisheries, dairying and horticulture, employment generation, including artisanal and self employment schemes, rural Industrialisation, and small infrastructural development, including minor and medium irrigation projects, rural roads, and small energy production and transmission systems. Despite this, initially much of the focus remained on agriculture and this was subsequently identified as a weakness in the programme.

3.1 Agricultural Activities

Agricultural land is privately owned in India. There are laws regulating the size of individual holdings and, under the law, land holdings in excess of the legally stipulated ceiling get redistributed to the landless. Also, ownership of agricultural land gets legally transferred to the person who tills it for a sufficient length of time, even if he or she does not own it. This is aimed at preventing "absentee landlordism". However, these laws have been difficult to implement.

3.2 Other Rural Development Activities

Rural Development is a concurrent subject in the sense that certain schemes are funded by the State Government and other by Central Government. Each State has a department of Rural Development which has representatives right down to the village and *Panchayat* level. The financial resources available with the department are expended through a variety of schemes which are implemented by Government institutions, NGOs, and Community institutions like *Panchayats, Mahila Mandals* (women's committees) and other such.

The second type of schemes are called centrally sponsored schemes, and are paid for out of the Central Budget, but are implemented by State government institutions. The third type of schemes are called Central sector schemes which are paid for by the central government and either implemented by Central Government Institutions or by Non Government Organisations.

3.3 Mining

Mining, in India, is almost totally controlled by the Government (State or Central), and is either undertaken by government agencies themselves or by private sector companies under license to the Government. By law, all minerals belong to the State, except in one state, Goa, where privately owned mines are permitted under a special agreement.

4. CONFLICTS AND RESOLUTIONS

The main types of activities resulting in conflicts between "development" in a very broad sense and habitat conservation are essentially three:

Commercial activities, where private or government corporations, and individual entrepreneurs, seek to unsustainably use natural resources or wilderness areas to meet commercial demands. Demands from forest based industry, the mining sector, and the tourism trade, are common examples

Infrastructural activities, where the government or other concerned agencies negatively impact on natural habitats in the process of undertaking infrastructural projects and related activities. Construction of dams, roads, townships, transmission lines, schools and hospitals come under this category.

Subsistence activities, where local communities are forced to exploit a shrinking natural resource to feed increasing populations, usually because there are no better alternatives available, aggravated by the absence of a sense of ownership over the resource. This includes grazing of livestock, collection of fuel wood and other non timber forest produce, collection of building and artisanal raw material, and collection of medicinal and edible plants.

Essentially the approach taken in India so far has been a regulatory one. Only recently have some efforts been made to use economic instruments for minimising potential conflicts. The resolution of conflicts through proper and integrated planning is still to be properly tried and tested in India.

4.1 The Regulatory Approach

Two types of regulatory approaches are prevalent in India. First, certain areas have special legal status where all the three types of activities described above are prohibited or regulated under law. Legally designated forest areas (about a fourth of the country's surface area), wildlife protected areas (about four percent of the country's area, with a significant overlap with the forests), and coastal regions (between 200 and 500 meters from the high tide line) are all covered by one law or another.

The Doon Valley and The Aravalli Hills are two other areas which have been accorded special legal protection. All the three types of activities listed above are either prohibited

or regulated in all these areas. For example, in national parks no human use activities are permitted, while in forest and coastal areas various activities can be permitted with the concurrence of the government.

Secondly, certain types of activities are regulated in the sense that, by law, they require prior environmental clearance from the appropriate government authorities. For example, all industries require prior clearance from the State Pollution Control Boards. In addition, certain specified types of Industries which are considered particularly hazardous to the environment also require a more comprehensive environmental clearance from the Central Government. Similarly, all major dams and large mining leases require environmental clearance from the Central Government, as do harbours and jetties, thermal power stations, nuclear facilities and tourist facilities in the mountains.

In addition, there is in force the Environment (Protection) Act of 1986 which empowers the government (central and state) "to take all such measures that it deems necessary or expedient for the purpose of protecting and improving the quality of the environment and preventing, controlling and abating environmental pollution" [Section 3(1)].

This act, and other acts aimed specifically at preventing and controlling air and water pollution and at conserving wildlife, all provide *locus standi* to the common person and thereby empower any individual to legally demand compliance, after giving 60 days notice to the government.

4.2 Economic Incentives

In recent years the government has attempted to provide economic incentives for environmental conservation. Positive incentives to commercial houses include the awarding of an eco-mark to those products which are environmentally friendly from cradle to grave. Tax rebates and soft loans are also provided for the installation of pollution control and environmental friendly devices and machinery. Variable pricing and environmental audit of companies encourages the conservation of water, energy and other natural resources.

Negative incentives include the necessity to finance and carry out compensatory afforestation in lieu of diverted forest land, heavy fines, especially under the Environment (Protection) Act for violation of environmental standards, and legal provisions and precedents in support of heavy rates of compensation for environment damage.

In order to counter environmental damage because of subsistence needs the government has launched two significant programmes involving, among other things, positive economic incentives. Under joint forest management (JFM), local communities living in and around forest areas are empowered to receive most or all of the non timber

forest produce and earnings from timber sales. In return, they undertake to protect and help regenerate the forest. In ecodevelopment, local communities living around wildlife protected areas are provided the financial and legal means for developing income and biomass alternates to their dependence on the protected areas, form where such dependencies cannot be legally met. Both these schemes are described in greater detail later.

4.3 Integrated Planning

In order to prevent or minimise conflicts between "development" and habitat conservation through the instrument of planning at least three things are required:

- integration of environmental concerns in all sectoral plans

- development and implementation of a conservation oriented land use plan

- a strict budgeting of natural resources

Planning, in India, continues to be mainly a centralised activity. The National Planning Commission prepares annual and five year plans, which are essentially sectoral, for the central and state governments. The process of planning is supposed to be, theoretically, an integrated one with the Planning Commission, the Cabinet and the National Development Council scrutinising the plan before its finalisation. In practice, however, there is little sectoral integration and environmental concerns are rarely reflected in the proposals of other sectors. Consequently, Ministries and Departments of the government pursue their respective sectoral objectives, and conservation imperatives are mostly forgotten.

Though the government has had, for many years, a National Land Use Board, there is still no comprehensive land use plan. Therefore, pressures on land continue to grow and decisions about land use continue to be taken in an *ad hoc* manner.

The Government of India, in its *National Conservation Strategy and Policy Statement on Environment and Development*, 1992, states "The Government will prepare, each year, a national resources budget which will reflect the state and availability of resources like land, forests, water etc. and which will rationally allocate these resources in keeping with the principles of conservation and sustainable development" [Para 8.2.3]. Despite this, no natural resources budget yet exists.

Methods to resolve conflicts arising out of subsistence needs have clearly worked better at a local, decentralised, level. Both JFM and ecodevelopment are decentralised approaches in both senses of the term, where an increasing level of control is transferred from the government to the community and where government involvement itself is at a decentralised level. Similarly, though this has not really happened so far, it is increasingly

being recognised that decentralised planning, starting from the village level, is the most effective way of building up a national plan in a bottom up manner.

However, for regulation of commercial and infrastructural pressures, the Indian experience suggests that centralised powers with the Government of India might be preferable to the decentralisation at state or sub-state level. State Governments have been far more inclined to ignore environmental imperatives and the ability of State Forest and Environment Departments to withstand pressures from major "development" departments, like energy or irrigation, is almost non-existent. However, even here, the regulatory process would benefit from a fuller involvement of concerned and affected members of the public.

5. SUMMARY AND CONCLUSIONS

The question of decentralisation has troubled Indian Planners since independence. The Community Development Programme was designed and implemented with a strong component of decentralised control and execution. *The Panchayati Raj* or local self government was seen as a major instrument for decentralised community action. However, despite this, major problems were seen in the implementation of the community development programmes. Though many efforts were made at rectifying these problems, time has shown that these problems are not easy to solve.

For one, in a society as stratified as the Indian society, it is difficult to ensure that decentralised, local, institutions are not taken over by the traditionally powerful local groups. These groups, then, perpetuate the oppression and stratification that has been the main cause for rural inequity and under development. Efforts to include, by law, an increasing proportion of women and representatives of the weaker segments of society, into local decision making bodies, has not always solved the problem. Often such representatives either remain ineffective or get coopted into the power structure, accepting personal advantages in exchange for abandoning the interests of their constituencies.

This is not universally the case and in some areas traditional power structures have been marginalised. However, these are usually areas where there has been significant redistribution of land and other economic resources among the weaker segments of society, or where mass education has taken root. Unfortunately, in many other areas traditional power structures still dominate and theses are also the areas where there is the greatest need for genuine, decentralised, peoples institutions to get established and flourish.

Even in societies where traditional power structures have been broken, the problem of tackling historic bias and ignorance still remains. Gender bias, and a reluctance to be open to new ideas and ways of understanding, has been another major impediment to effective local decision making. One problem is that whereas decisions continue to be made by the village elders, it is mainly the younger generation which has had access to education. While the wisdom of the elders is critical for the well being of the society, it is equally critical to integrate, into this wisdom, the knowledge and perceptions of the new generation. Traditional societies rarely provide for this.

Whereas rural development programmes were designed to be decentralised right from the start, the management of forests, wildlife protected areas and other vulnerable ecosystems continued to be centralised in the hands of the government. It was only recently that efforts were made to decentralise control over natural habitats from the government to the community.

This decentralisation has worked well when it has come to the joint management of forests. However, in certain cases, abject poverty of the rural communities has made it impossible for them to restrict their use of natural resources to a sustainable level and thereby forced them to commit ecological suicide. Also, where investment choices have to be made by local communities, very often investment in forest and environment management has been a very low priority. For example, during the seventh plan (1985-90), between five and ten percent of rural development funds were earmarked for forestry. In the eighth plan it was decided not to earmark any money for forestry but to leave it to the village communities to decide what they want to spend it on. The result was that almost no money was spent on forestry.

In many cases rural communities have been alienated from their natural surrounds for generations and have lost all sense of ownership towards them. Community skills at sustainably managing natural resource, if ever present, have also been lost after generations of government control over these natural resources. Besides, in a few communities where these skills still remain, they are not always equal to the task of conserving a resource which now faces many times the pressure it traditionally faced, and perhaps a host of new, non traditional, pressures.

Reports from North-east India where, in the tribal states, most of the forests are still legally owned and controlled by the tribal people, are discouraging as these states have witnessed in the last few years the highest rates of forest loss in the country.

Painstaking analysis of past experience has led to the conclusion that the ideal formula for conservation action is to establish joint control and management with the government and the local people as partners. Neither party can do anything significant without the others concurrence. The sense of ownership and stake holding is established within the local community by legally ensuring their access to the economic benefits of conservation, as in JFM, or by the development of alternatives, as in ecodevelopment. By making such inputs conditional on the local community protecting the resource, an added incentive is given for sustained conservation.

6. CASE STUDIES

The three case studies that follow are examples of ecodevelopment (two) and of joint forest management (one). However, before describing the cases, the general principles underlying these two approaches have been spelled out.

6.1 Principles of Ecodevelopment and Joint Forest Management

6.1.1 Ecodevelopment

Recognising the need to develop and identify alternate sources of income and biomass for those local communities who have traditionally been using wildlife protected areas, an ecodevelopment approach has developed. It is based on the assumption that we cannot conserve a PA unless real options are provided to the local community, they are made beneficiaries to the financial and economic gains from the PA and they are involved in the management of the PA.

Ecodevelopment is a strategy for protecting ecologically valuable areas (protected areas) from unsustainable or otherwise unacceptable pressures resulting from the needs and activities of people living in and around such areas.

It attempts to do this by at least three means:

1 by identifying, establishing and developing sustainable alternatives to the biomass resources and incomes that are being obtained from the protected areas in a manner, or to an extent, considered unacceptable

2 by increasingly involving the people living in and around such protected areas in the conservation planning and management of the area, thereby not only channelising some of the financial benefits of conservation to them, but giving them a sense of ownership towards the PA

3 by raising the levels of awareness, among the local community, of the value and conservation needs of the protected area, and of patterns of economic growth and development which are locally appropriate and environmentally sustainable.

Though, by their very nature, ecodevelopment initiatives will differ from area to area (and even from village to village), the three basic principles defining ecodevelopment are:

- Site - specific, micro-level planning
- sectoral integration
- People's participation.

Ecodevelopment is not just rural development, for it is not solely directed at the economic development of the rural population for its own sake, but seeks to protect an ecologically valuable area by eliciting the support of local communities, and by helping develop viable alternatives to their biomass and income needs.

Ecodevelopment is not policing in the sense that it does not seek to protect an area by keeping the pressures out solely or primarily through the enforcement of laws aimed at

excluding local people. Rather it involves the local people in the process of protecting the park from destructive activities.

For any ecodevelopment plan to succeed, it must be backed by an appropriate management plan for the protection area.

6.1.2 Joint Forest Management

This celebrated approach involves the setting-up of mechanisms by which specific forest areas are jointly protected and managed by the local community and the forest department. In essence, this involves the Government entering into a memorandum of understanding (MoU), with the village community, through village forest protection committees set-up for the purpose. Such committees organise themselves to protect the forest areas from their own members and from outsiders. In return, they have a right to varying proportions of the forest produce.

Starting almost spontaneously, in Arabari in West Bengal, in 1972, assessments show that jointly managed forests have regenerated better, have cost a fraction to protect and have better benefitted the local communities, than those being managed solely by the forest department.

6.2 Case 1 : Participatory Resource Management and Ecodevelopment : The Harda Case

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Located about 160 km south west of state capital Bhopal, Harda is a forest division head quarter in district Hoshangabad, Madhya Pradesh, India. Divided into 6 forest ranges, the total reserve and protected forest area is 1,417 sq. km. The forests are mainly South Tropical dry deciduous teak forests (Champion and Seth classification). Protected Forests of Handia range have a long history of degradation due to organised illicit fellings. The reserve forests of the division, though seemingly well stocked, are not regenerating adequately perhaps due to excessive grazing by livestock and recurrent fires. Bamboo (*dandrocalamus strictus*) has also suffered due to grazing and fire, especially after gregarious flowering. Villages are dotted all over the reserve and protected forests in the region.

The experiment at Participatory Resource Management and Ecodevelopment at Harda started in October, 1990 and the programme now covers nearly 80% of the total forest area. It covers both interior and fringe areas and involves 190 villages, each with a village committee organised for the programme.

Salient Features of the Programme

1. Village microplans for ecodevelopment are prepared jointly by villagers and forest staff. Such plans aim at protection, regeneration and stocking of the adjoining forests, to meet the bonafide needs of the local community. Simultaneously, the plans seek to divert unsustainable pressures from the forests through on farm and off farm measures. These include protection, regeneration and management of forest areas, village watershed treatment, construction of water harvesting structures, establishing additional income generation activities, development of village infrastructure (on a limited scale), energy conservation measures and the development of alternate energy sources.

2. Funds for the implementation of microplans are mobilised in two ways:

    - through tapping forest department funds under plan/non plan schemes and

    - by channelisation funds from different district level development agencies by effective interdepartmental co-ordination. The forest department plays the coordinating role, for the purpose, networking among the various departments and agencies.

3. With a view to achieve financial decentralisation, the village committees have been helped to build up a village common fund. Initially the money in the common fund comes voluntarily out of the wages that the villagers earn, from the money distributed by the forest department for the protection work done by the villagers, from social fines, out of the charges levied by the committee on the use of community assets, like water, from step dams and lift irrigation facilities, and from bank interest. The money from the fund is used by the village committee :

    - to extend credit to members

    - to develop additional community assets

    - for protecting adjoining forest reserves, etc.

    Over 100 village committees could accrue over Rs. 17 lakhs (1.7 million rupees) in their common pool over a period of 3 years. The idea is to gradually build up the village committees so that they can handle the full budget for microplan implementation.

4. Reorienting forest staff perceptions and working, in order to facilitate their working in tandem with the villagers, has been at the core of the programme. In addition, training was imparted to the forest staff and the villagers for developing their capabilities in microplanning and in establishing various income generating activities.

Encouraging results have been achieved over the last three years through the ecodevelopment and joint forest management programmes in Harda division.

The 190 village forest committees, one in each village, could successfully combat recurrent forest fires. Only 2% of the area has been affected by fires since the initiation of the programme, as compared to 23% in 1990.

Through the programme grazing has been regulated over 85% of the forest area, thereby voluntarily closing 47,500 hectares of forest area to grazing. In accordance with the village committee grazing management plan, grazing has been restricted to within the carrying capacity, in the remaining forest area. This has resulted in, for the first time, good growth of grass in an area hitherto unknown to have produced grass.
The growth of grass has been so profuse that in 1993 two of the village committees earned more than 1 lakh (100,000) Rupees from the sale of grass.

Bamboo (*Dandro calamus strictus*) has again begun to flower and regenerate in approximately 3000 hectares. Bamboo was on the verge of extinction here, mainly due to fires and uncontrolled grazing.

A good number of village forest committees, in the peripheral villages, have successfully tackled the problem of illegal firewood extraction from the forests. For example, village forest committees in Khatmakheda, Padarmati and Amsagar villages successfully combated illicit fuelwood sale by improving the production from agriculture fields, through assured irrigation, and by developing additional income generation options for the poor villagers. In another range of Handia, where illicit fellings by organized gangs had been a big menace for the last many years, the problem was addressed by organising forest protection committees. These committees were so effective that recorded offences for Handia came down from 64 in 1991 to 16 in 1993. Not only did the quality of forests improve but even the income of local people went up as a consequence of the ecodevelopment programme.

Local people's stake and interest in the recovery of Harda forests can be attributed to:

- the fact that their bonafide needs for fuelwood, fodder, bamboo and small timber has been recognised by the forest department and they have been assured access to these resources, at sustainable levels, from the forest area they protect under the JFM agreement.

- The ecodevelopment programme has helped to increase on farm and off farm income of the villagers and thereby reduced the unsustainable pressures on the adjoining forests.

The long term sustainability of such programmes largely depends on gradual financial and administrative decentralisation to village organisations, simultaneously matched by

helping develop capabilities of both partners, villages and forest department personnel, to facilitate such a transition.

6.3 Case 2 : The Ranthambhore Ecodevelopment Project

Located in District Sawai Madhopur in Rajasthan, India, Ranthambhore Tiger Reserve offers an enchanting sense of history and an overwhelming starkness of rare and beautiful natural forests. Overlooking its dry tropical forests is the Ranthambhore Fort, said to be built in AD 994.

The area of the Tiger Reserve is 1334.64 sq km. The Ranthambhore National Park (392.5 sq km including a 118 sq km buffer) forms the core of the Reserve. The River Banas divides the Reserve into two, thus forming an important natural corridor.

Ranthambhore was one of the first nine Tiger Reserves to be constituted in 1973 under Project Tiger. Consequent to it being declared a Tiger Reserve, it was decided to relocate 16 villages from the newly designated core area to outside the boundary of the Park. From 1976 to 1979 , 12 of these villages were gradually shifted. Two new settlements were created, one in Kailashpuri with a group of 9 villages, and another in Gopalpura, with a grouping of three villages - Nakdi, Lahpur and Ranthambhore.

Including these resettled villages there are in all 84 villages with an estimated population of 85,000 in the periphery of the park. These 84 villages are distributed in two tehsils, namely, Sawai Madhopur and Khandhar. There are an additional 80,000 people living in the peripheral towns of Sawai Madhopur and Khandhar. An estimated total of 1,00,000 livestock units depend on park resources.

Though a valuable wildlife habitat, with a significant tiger population, over the years much of the buffer and even parts of the core have become degraded because of human pressures, mainly grazing pressures.

Recognising the need to involve the community in the process of protecting the Ranthambhore Tiger Reserve, and in an effort to encourage local participation and adapt conservation to local needs, World Wide Fund for Nature - India (WWF-I) launched an ecodevelopment project here in 1991. This project, supported by Overseas Development Administration (UK), through WWF-International, aims at:

- working with the local people to evolve alternatives to their dependence on the resources of the Park;

- reviving the social and cultural links that the local communities have with the Ranthambhore forests;

- regenerating the buffer with the involvement of the local people and ensuring that the process is participatory;

- forging a link between the local people and the forest department;

- conducting appropriate research.

The project essentially attempts at developing and field testing a model of ecodevelopment which could then be expanded and replicated.

The project started, in the first phase, by building trust with the community and strengthening community institutions. It focussed its activities in Gopalpura, which was a cluster of three rehabilitated villages. A small team of WWF workers set up headquarters near this village. As a first step, the WWF staff was able to assist the villagers in getting, after over ten years, the allotment of land regularised in their names. This not only gave them a sense of security which was so essential for any long term conservation action, but also won the trust and cooperation of the villagers.

At the same time, village development committees were set up and began meeting once a month to decide how the project should proceed and what issues should be taken up first.

In the second phase of the project, the issue of grazing was sought to be tackled. The project distributed large quantities of Sorghum Sudan Grass seeds. These seeds soon became very popular and many farmers began growing this grass in their farmlands and also in common and waste lands outside the Park.

The forest department was persuaded to allot 25 hectares of degraded forest land to the village for growing fuel and fodder. The villagers formed a forest protection committee and protected and regenerated the land. The villagers also worked out their own rules and regulations. No free grazing would be allowed. Every family in the village would contribute voluntary labour to work the land and those families who failed to perform their share of work would be liable to pay a penalty fixed by the village committee. The benefits from the land would be distributed equitably amongst the community and in accordance with norms laid down by the villagers.

The land became available in 1993 and in two years remarkable regeneration has taken place. The lush vegetation in this plot is in sharp contrast with the sparse and degraded vegetation in surrounding areas. The success of this fuel and fodder plantation has led to other villages also getting enthused to take up similar plantations, and the forest department has now agreed to make more degraded forest land similarly available.

Shortage of water has also been identified as a major problem in the area. Consequently, on a request by the local villagers, the project took up a watershed development programme around the village clusters. This has, again, proved to be both a popular and a useful programme.

The project has also assisted in upgrading local breed of cattle, in providing veterinary services and in helping develop a marketing network for milk and milk products. All this has resulted in local incomes going up and, consequently, less pressure on the Park.

The project has developed a working model of decentralised, participatory, ecodevelopment and now, with a large GEF project in the offing in Ranthambhore, this model will be expanded and replicated.

Source : *In the Shadow of Ranthambhore : WWF India's Ecodevelopment Project,* WWF India, November 1994

6.4 Case 3 : Joint Forest Management in West Bengal

Joint Forest Management (JFM) is a new approach under which state forest departments and local communities jointly manage forest lands and share responsibilities and usufruct. In India, this approach is being tried by many states with encouraging results. The pioneering state in the regard is the state of West Bengal situated in the eastern part of India. The origin of JFM was through a small experiment that was started in the early seventies by a young forest officer. He involved forest fringe communities in the management of degraded Sal (*Shorea robusta*) forests, which had been reduced to bushy condition due to over-exploitation.

The involvement of local communities in the protection and management brought about a remarkable rejuvenation of the Sal forests. Encouraged by the success of this experiment, Government expanded the programme all over the state and at present nearly 0.4 million hectares of degraded forest land is being managed by nearly 2500 forest protection committees (FPCs) constituted by the fringe dwelling communities. The programme has spread to 14 other states of the country. A number of institutional, legal and socio-political factors have played a role in the spread of the programme.

A number of factors like progressive land reform measures, social forestry programmes and usufruct sharing with the people laid the foundation of the successful joint forest management programme. As the programme got under way, it was realized that Non Timber Forest Products (NTFPs) play a crucial role in sustaining the interest of the local people in JFM. They are more important to the people than timber benefits as the income from NTFPs to a household is nearly seven fold greater than the amount a household will get as their share in the revenues generated from the final harvest of Sal forests. However, income from NTFPs can be further increased through certain interventions. The benefits in terms of employment generation have also been substantial. During the experimental project phase itself 220 thousand person days of employment was generated by the forest department.

Various studies have shown that there has been an increase in the biodiversity in regenerating forests. In a survey of 12 FPCs, a total of 255 species were observed in the area (regenerating forests, plantations and settlement areas) and 84 per cent of these were found in regenerating Sal forests.

The new approach required a shift in the attitudes of forest departments and the people to build effective partnerships. At the institutional level, a number of FPCs have evolved their own mechanisms and rule systems for controlling access and managing their forests.

One of the major reasons often cited for forest degradation is increase in the population. In West Bengal, while the population has continued to grow in the last two decades, involvement of people in the management of their forests has resulted in dramatic regeneration of Sal forests. People are not only enjoying greater flow of forest products but have also gained greater access and control over their forest resources.

Current Status

By 1991, the programme which was initiated as an experiment over an area of 1272 ha. involving 618 households in 1972 had spread to 235,759 ha. covering 188,037 households in 1,804 FPCs. The area under joint management further increased to 390,919 ha. involving 2,423 FPCs by 1994.

Since its inception in 1972, JFM programme has gradually developed into a movement. The major achievement has been in qualitative terms i.e. the positive shift in forest department-people inter relationships, betterment of quality of life of people and rejuvenation of forest ecosystems.

Recent analysis of land satellite images show that closed forest cover in Midnapore district alone has increased from 11 per cent to nearly 20 per cent of total land area in the past six years. These regenerating forests now generate a wide variety of medicinal, fibre, fodder, fuel and food products for participating rural communities.

The impact of JFM programme can be seen in the vegetation dynamics of regenerating Sal forests, livelihood pattern of fringe communities and attitude and functioning of the forest department. Out of 6,418 sq. km. of degraded forest, 3,909 sq. km. forests are being managed jointly with the communities through 2,423 FPCs under the new management system. The impact of the JFM approach on forests is clearly visible if one just visits these areas. One can easily make out the regenerating forest patches from a distance and make out where people are protecting forest and where they are not.

In fact, Forest Survey of India's latest report (1993) specifically mentions South West Bengal (SWB) as the area in West Bengal where compared to the previous FSI Report 1991, 41 sq. Km. of degraded scrub forest (less than 10 per cent canopy cover) has got upgraded into open forest category (10 to 40 per cent canopy cover).

Another interesting impact of forest regeneration in SWB is the return of elephants to these tracts. Till about 1987, there was hardly any resident elephant population in SWB though a few solitary ones remained in Ajodhya hills, Bundwan range of Purulia district and Banaspahari area of Midnapore district. The herd of wild elephants from the Dalma wildlife

sanctuary in Bihar used to visit these areas between October and December; their movement was however restricted to the west of river Kangsabati. However, a large herd of about 50 elephants entered East Midnapore division in 1987 and stayed primarily in the Arabari range till March 1988. During 1988 to 1990 this tract was frequently visited by the elephants. Attempts to drive them away were not very successful. This pattern of visits has now become an annual feature.

The JFM programme of West Bengal is now more than two decades old, although the major expansion took place only in mid and late eighties. The programme started yielding results early, but these have become much more apparent now. The regeneration of the degraded forests has had a major impact in West Bengal. The achievements can be broadly classified as quantitative and qualitative. Quantitative aspects relate to the changes in the number of species (and their density) available in the forests, quantum of forest products accruing from the forests and in the total area brought under JFM. The qualitative ones are related to the changes in the attitude of the people and the forest department personnel and in the life pattern of the villagers.

Source : *Case Study on Participatory Forest Management in West Bengal,* World Wide Fund for Nature-India and Society for Promotion of Wastelands Development, March 1995.

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