

**Human Issues in Protected Areas:
Case Studies outside Orissa on Conflict Management
through
India Eco-development Project**

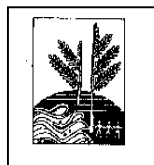
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Origin of the Approach: The India-Eco-development Project

Introduction:

The concept of ecodevelopment instantly reminds of the programme of periphery development because whatever its true nature may be, the implementation of this programme has remained more or less confined to the fringe areas of the two sites visited by us.

A broad definition of eco-development has been given by Panwar as under:

"The promotion of long term sustainable use of resources whilst caring for biological and cultural diversity" (Annamalai Dr.R. 2002, *Ecodevelopment in Kalakadu Mundanthurai Tiger Reserve*, India: Status Report 2002, p.116).

In context of Protected Area management a more specific definition is :

A site-specific package of measures derived through people participation, which addressed all aspects of land use and other resources, in order to promote sustainable land use practice as well as off farm income generation activities, which are not deleterious to PA values (Annamalai, *op.cit.*, p.116).

Hence, ecodevelopment is the approach, which seeks to protect an ecologically valuable area by motivating and helping the people dependent on the area to develop alternatives (Annamalai, *op.cit.*, p.116).

Ecodevelopment is the only official way through which a role of the communities in the management of PAs can be recognised.

As per the definition adopted by the Forest Department people, ecodevelopment is a strategy that aims at the restoration and conservation of the biodiversity in the PAs by completely eliminating all kinds of negative dependency of the local people on the forests through their economic and sociological empowerment.

It can also be defined as Joint Forest Management without benefit sharing.

However, our findings define ecodevelopment as a strategy of PA management the objective of which is to eliminate the scope of negative intervention of the local people in the PA **with** or **without** encouraging them to play a constructive role in the management of the PA.

Planning for eco-development:

Eco-development is basically planned on the basis of micro-planning through participatory rural appraisal which finds out details as well as reasons of the local dependency on resources inside the PA and indicates ways through which this (negative) dependency can be minimized. When done sincerely and with earnestness, this process helps build a mutual trust between the local communities and the project authorities, which is a must for successful implementation as well as sustainability of the programme itself.

However, the strategy of ecodevelopment can be applied only in areas where the basis threat to conservation of biodiversity comes from the livelihood dependency of the rural people. Hence, it can not be applied in areas where mining or some development project of the govt poses the real danger to the local ecosystem.

Ecodeveopmnmnet is a site -specific programme i.e., the strategy is designed according to the situation in the concerned area. Hence, the system adopted in one case need not necessarily fit into another case.

India Ecodevelopment Project(IEDP):

The India Ecodevelopment Project was conceived as a pilot project in June, 1994, on the basis of an Indicative Plan prepared by the Indian Institute of Public Administration on behalf of the Govt. of India after the study of eight sites selected by the Ministry of Environment & Forests. This study was funded by the UNDP. The Project was to cost US \$ 70 millions to be shared by the International Development Association, Global Environment Facility Trust, Govt. of India, Govt. of Project States and the Beneficiaries.

The main objective of the Project is to conserve bio- diversity through ecodevelopment and aims at Improved Protected Area Management, Village Ecodevelopment and Ecodevelopment support. The Project also envisages preparation of Future Biodiversity Projects covering a larger number of Protected Areas.

Kalakad Tiger Reserve in Tamilnadu and the Great Himalayan National Park in Himachal Pradesh were the two sites where pilot projects were first carried out in 1994(?) (*personal communication*, Dr. R. Annamalai). Besides the pilot project areas, eight sites were originally identified for the implementation of this programme. These sites were Similipal in Orissa , Palamau in Bihar, Buxa in West Bengal, Nagarhole in Karnataka, Periyar in Kerala, Pench in Madhya Pradesh, Gir in Gujarat and Ranthambhore in Rajasthan. The Project was to cost US \$ 70 millions but Similipal in Orissa was later deleted from the list of sites due to non-observance of World Bank norms and the Project was confined to seven sites the total cost now being reduced to US \$ 67 millions (based on Rajvanshi Dr. Asha., <http://www.envfor.nic.in/pt/ecoprj/ecoprj.html>).

Ecodevelopment in non-funded PAs:

Since only a few PAs were selected for the IEDP, others could not avail that opportunity in terms of funding, in particular. Bhitarkanika WLS in Orissa is one of these disadvantageous PAs. However, the authorities in Bhitarkanika make some budgetary provisions for ecodevelopment in their annual management plans and receive some grants from the Govt of India for some works under this scheme like distribution of solar cookers, etc.

The Study Team

Vasundhara is a non-government organisation of Orissa working on issues related to natural resource management and livelihood of the poor. It undertook a study during 2002-03 and 2003-04 on select Protected Areas of the state so as to understand the issues there and also to find if any scope exists to minimise the conflict between the conservation authorities and the local people.

An exposure visit to Kalakad Mundanturai Tiger Reserve(KMTR) in Tamilnadu and Periyar Tiger Reserve(PTR) in Kerala was made in February 2004, by a two-member team of Vasundhara as a supplementary study to the major study in Orissa. The basis objective of the exposure visit was to see how conflict resolution had been possible at these two sites through the ecodevelopment programme and to know if this strategy can be applied in Orissa.

Methodology adopted for the study:

The study at these two sites was conducted through interaction with various stakeholders and reference to secondary literatures available. Language was a major problem which could be but partially overcome through interpreters provided by the project authorities of the concerned sites. However, due to time constraints and difficulty in accessing remote areas, the study could only become a representative one of the overall project experience since detail study could not be undertaken.

Case study:1 (Kalakad Tiger Reserve)

Introduction to KMTR:

This Tiger Reserve forms a part of the western ghats in the Tirunelveli and Kanyakumari districts of Tamilnadu. The local hill range is known as Agasthyamalai hills.

The Reserve, which was established in 1988, includes two sanctuaries: The Kalakadu Wildlife Sanctuary and the Mundanthurai Wildlife sanctuary. It extends over an area of 895 sq. km..

The present Director does not believe in the division of the tiger reserve into core- and buffer zones, a common feature in most PAs. He stresses on the fact that the whole area should be a no-interference zone or zero-dependency . However, it could not be known if the concept of core area could not actually be implemented due to unsuccessful eviction of some tribal families in the proposed area(core).

Biodiversity:

KMTR has the advantage of being a part of the Agasthyamalai Biosphere Reserve, a super hotspot of biodiversity in the western ghats. There are about 150 localised endemic species of plants. Among wildlife, five of the 18 Indian primates are found here including the endemic Nilgiri Langur, rare & endangered lion-tailed macaque and the slender loris. There are several elephants and about 27 tigers. The area is also quite rich in avian- and reptilian species.

Importance in the regional ecosystem, economics and culture:

KMTR is known as the river sanctuary of Tamilnadu since it gives rise to as many as 14 rivers. Hence, it works as a source of water for three districts. It is one of the large patches of non-equatorial rain forests and the also the southern-most tiger reserve of the country.

There is one hydel project inside the reserve. Large tracts of agricultural lands around the Reserve depend on the rivers originating from KMTR for irrigation.

There are two main places of worship inside the reserve, which are visited, by a large number of pilgrims every year, which has adverse impact on the ecosystem due to their irresponsible behaviour.

Resource dependency and major issues during the pre-project period:

The eastern boundary of KMTR is full of villages in comparison with other parts. There are about 182 hamlets in the presumed buffer zone as well as fringe areas. Most of the people belong to backward class and scheduled caste.

Headloading(of timber and firewood) was the only major issue in KMTR. About 20000 families were completely dependent on this source for their livelihood.

There being only a few sandalwood trees, smuggling of this valuable timber was not an issue here. Poaching was also comparatively insignificant since it was occasional and usually limited to killing of small animals like hare.

About 200 families of 4 tribal settlements resided inside the presumed core zone. They 'encroached' some land since a long period and used to do tapioca cultivation thereon, which provide them food. Some of them were traditional honey collectors.

Collection of NTFPs was limited only to few items among which tamarind was the most important one.

Strategy adopted for resolving the issues:

Mr. Venkatesh was the first ecodevelopment officer of KMTR when the project started in 1994. He laid foundation of the ecodevelopment programme here. Ecodevelopment ranges were opened, each in charge of an range officer(ecodevelopment).

Village forest committees, which were formed under Joint Forest Management programme in 1996, were now regarded as ecodevelopment committees though their name remained unchanged (i.e., the term EDC is still not used).

The authorities took the help of around 60 NGOs for the implementation of the project. They aimed at reducing the negative dependency on forests almost to zero by means of diversification of the options. For this purpose, SHGs were promoted and each member received a micro-credit of Rs.1600/- for trying some alternative, which would secure the livelihood of the family without depending on the forest. Since the villages were often heterogeneous in nature, different groups(caste/tribe) in the same village had different needs. As such, the authorities took hamlet, not village, as a unit. The SHGs received grants from the project which they distributed to the members on credit basis and the payments received from the latter formed the revolving fund. Each hamlet received about Rs. 4 to 5 lakhs under the project and for all activities peoples' contribution was 25%.

It took time to convince the people that their livelihood would not be in danger without forest dependency. NGOs helped in motivating people and facilitated financial as well as other activities of the SHG members who also received training(like tailoring) for their skill development.

Out of total 23334 families, 17465 (74.84%) had been enrolled as VFC members by the end of 2001. Women's membership was 55% in these VFCs. There are 383 women's SHGs and total membership of women is 6001.

The member-families utilised their loans in different income-generating activities like opening of petty shop, broom making, basket making and cot making, etc.

Tribal families who resided in interior areas did not have much opportunity to successfully utilise microcredits through the SHGs since the market was quite distant from their villages and also, they were not smart enough to effectively carry out the non-traditional activities. So, the authorities took a special initiative for them and appointed about 20 such people as their staff(watchers) though they lacked necessary qualification.

The group collecting honey being a small one, the approach to it was a moderate one. Tribals staying in core areas were allowed to take more time to vacate the place and the authorities did not hurry for it.

People were encouraged to try alternative fuel for their household needs. Many families were distributed husk chullah, hot point stove, bio-gas and LPG for this purpose.

The outcome:

Gradually, the effort succeeded in reducing the number of head loaders by 87% by the end of 2001 since the people dependent on this source had now started some other business. A large number (about 1 lakh per annum) of trees have thus been saved from cutting. Firewood is now substituted with coconut leaves, etc. and a few people have purchased gas stoves. No. of families shifted over from fuel wood to other methods was 4608.

The success of the SHG programme can be judged from the fact that the fund at their disposal has increased from Rs.3 crores to Rs.8 crores.

Poaching is prevented through provisions for heavy penalty even for small animals (like, Rs.20000 to 25000 for a hare) and also through anti-poaching camps.

There is no need for any regular patrolling in the forest, but the villagers keep vigil and inform the Department about suspicious activities. Recently, in Pavanasam Range they caught some poachers.

Kanikudi village helped in fighting forest fires.

Sustainability of the programme:

The sustainability of ecodevelopment programme has been ensured through successful working of SHGs whose funds have increased significantly. Hence, after the project stopped receiving funds from the government¹, there was hardly any problem.

By November 2001, 17 VFCs out of total 129 recorded 100 loan recovery and 64 VFCs recorded 80-100% recovery.

After the sponsored project was over, most of the NGOs were no more required to work on behalf of the Department. Still 30 of them continued working and one or two of their staff have been appointed as accountants for VFCs. The SHGs under VFCs pay them Rs.300/month/person.

Distinguished features of the Kalakad ecodevelopment programme:

The KMTR authorities see their achievements special in the following ways:

- It aims at zero dependency of local communities in the PA.

¹ The project was initially for five years i.e., from 1994 to 1999, which was later extended by 2 years (upto 2001).

- The major issue has been almost completely solved, hence almost 100% success can be claimed in this case.

However, it seems also to be true that the KMTR authorities did not have to face the complexity which their counterparts in some other PAs (like Periyar Tiger Reserve) faced. The major issue was only one, hence it did not require much effort for resolution.

Unlike PTR, the present authority did not seem to believe in promoting eco-tourism in his area. He said staff shortage is a reason of that, but at the same time also clarified that he did not want to open KMTR for commercial purposes (like, eco-tourism). As such, the tourism facilities appeared extremely underdeveloped in this PA, unlike in PTR. However, it is said that PTR authorities learnt the basic strategy of SHG promotion through micro-credits from KMTR.

Interaction with EDC members:

Interaction with different EDCs was difficult since the members were available for discussion only during the evening time. Due to constraints of time and distance, only the EDC members of Kalakkad village could be interacted with.

Earlier, most of these villagers used to cut timber from the KMTR. The usual collection was 45 headloads per day and sold in Kalakkad village @ Rs. 25.00/headload.

No head loads are collected now. Firewood is substituted by coconut leaves and Kerosene.

It took almost 2-3 years to stop illegal timber felling completely in this village. A local NGO called Arumugal trust had played the role of facilitator in this process. The SHG members were provided with loans at low rate of interest for switching over to other alternatives. Saplings of coconut were made available to them @Rs.2/sapling. Loans available for purchasing gas stoves could be repaid in easy instalments.

Although the villagers are not directly involved in protection of KMTR, in case any trespassing by the outsiders they immediately inform to the Forest Department. The women feel that there is a need of women's training in connection with forest watching.

One lady from Japan had come to Tirkangudi to train the local villagers on spinning and stitching using the fibres extracted from banana stem. The villagers of Kalakkad also wish to take this sort of trainings to carry out such income generating activities. The village women also feel a need for the spinning instrument.

Besides existing other small business activities, many of the village women have taken bidi rolling as one of their major activities. The women are only paid @ Rs. 30/- for 500 bidis. They engage themselves for 4 hrs a day for almost 300 days a year for this purpose. It is estimated that one single woman can roll about 500 bidis per day after doing the household work. This has substantial amount of contribution to the household income.

Income generation activities outside the forest have helped in reducing the pressure on KMTR.

Case study-2 (Periyar Tiger Reserve)

Introduction to PTR:

In 1895, a dam was constructed over the Periyar river of Kerala. The reservoir formed an artificial lake popularly known as Lake Periyar.

In 1899, the lake area was declared as Periyar Lake Reserve. After that, the Nellikkampelly Game sanctuary was created in 1934 followed by the notification of Periyar Wildlife Sanctuary in 1950. Finally, the Periyar Tiger Reserve was declared in 1978.

The lake view presents a dreamland of its own where the nature is wild. Upper portions of submerged trees just add to the adventurous experience of the visitor in the lake.

The Reserve extends over an area of 777 sq.km. of which 350 sq.km. is core area and rest, buffer zone.

Biodiversity:

Among the 3800 flowering plant species found in Kerala, 1980 are found in PTR among which 3 are endemic to this Reserve. Orchids number 145 and medicinal plant species, more than 350.

Among fauna, 63 mammalian- , 45 reptilian- and 323 avian species are found. 160 species of butterflies and 38 species of fishes are also found here of which(fish) 7 are endemic to PTR.

Besides elephants and bisons, the Reserve is home to about 35 to 40 tigers.

Importance in the regional ecosystem, economics and culture:

The area is a part of the western ghats and contains evergreen as well as deciduous forests. There are valuable resources of sandalwood tree and *Persea macrantha* (locally known as Kulamau) in this area.

The dam supplies water to the neighbouring districts in Tamilnadu where intensive sugar cane farming depends on this source of water supply. There is also a hydel project.

PTR has two important religious sites: the Mangala Devi temple and the Sabarimala temple. Around 50 lakh pilgrims visit the latter every year.

Six groups of indigenous people(like, Mannans, Ulladas, Urali, etc.) are found here among which one is nomadic

Resource dependency and major issues during the pre-project period:

There are around 2.5 lakh people around PTR among which 35000 had direct dependency over the resources. The major issues which rested from this dependency were as under:

- Poaching: Elephants were killed for tusks and bisons for their meat.

- Smuggling: Smuggling of sandal wood and cinnamon bark was done extensively.
- Headloading: Timber and firewood were collected for sale purpose.
- Grazing: Some people used to send their cattle for grazing inside the forest which not only caused cattle-lifting by tigers but also browsing by the cattle was a threat to the flora.

Some other major issues originated from outside interference. Annual visit of a large number of pilgrims to Sabarimala caused destructive impact on the ecosystem as the pilgrims disturbed the ecosystem variously. The forest was being unsustainably exploited so as to meet the demands (firewood and small timber, etc.) of these people and the water was polluted. Besides, the solid waste generated was another matter of concern.

The Kerala Tourism Corporation runs three hotels inside the PTR which is a case of inter-departmental conflict between PTR authorities and KTC. Same is the case of temple management because the Sabarimala temple is managed by a different department of the Kerala govt.

The dam is an old one and there is a risk of its collapse at any moment during heavy floods. The collapse would cause devastating effect in the Iduki district. To avoid that, the height of the dam needs to be increased, but the people of Tamilnadu are against it since this would mean decrease in their water supply. A strong political lobby is working in Kerala in support of the Tamilnadu people particularly because some politicians of Kerala have land in Tamilnadu and this dam also irrigates their land. On the other hand, increase in height would cause submersion of about 11 sq.km. of good forest of the Reserve.

The conflicts were therefore very high and complex in nature.

Challenges faced:

The concerned authorities had to face several challenges while planning for an implementation of the eco-development programme, as under:

- Antediluvian mentality of bureaucracy.
- Subsistence and supplemental dependency directly linked to livelihood.
- Heterogeneity in community structure.
- Power of vested interest groups.
- Lack of mutual trust among people.

Strategy adopted for resolving the issues:

The ecocodevelopment project was started in PTR in 1998 and Mr. Benneichan Thomas was the first Ecodevelopment Officer here. Mr. James Zacharias, then the Range Officer, was one of his associates. These two individuals sincerely and earnestly did the hard work which laid the foundation for the successful ecocodevelopment programme here.

As in KMTR, microplanning through PRA was carried out in villages. NGIs (non-government individuals) assisted the authorities in this effort.

It was discovered that most of the poor people were overburdened with debt due to inadequate resources. Money lenders from Tamilnadu, with whom they mortgaged their lands, used to purchase the crops at meagre price in case of failure in loan payment. Forced by the miserable economic condition these local communities resorted to illicit timber felling. They also helped the poachers.

It was therefore concluded that a financial empowerment of these people could solve the problem of their unsustainable exploitation of the timber/firewood. For this purpose, EDCs were formed through which the SHG members received microcredits. The authorities simultaneously warned the moneylenders to never interfere in this area and ensured marketing of the produce cultivated by the members. The effort succeeded in getting them a much better income. Pepper is one of their major cash crops and 50 paise per kg of pepper sold went to the revolving fund of these people.

People who collected thatch grass and firewood for sale were trained to make umbrellas. These umbrellas bear the stamp of their own EDC.

People who depended on cattle and milk business, used to send their cattle to the forest for grazing. For them, a graziers' EDC was formed and a milk booth was opened at Periyar for organised and better marketing of the milk. The grazing of the cattle was restricted to particular areas only.

Those who collected honey and fish on commercial basis were shown other viable alternatives. They were asked to catch only the two species of fish (Tilapia and Gold fish) that were exotic to Periyar and introduced during the British period, so that the indigenous species of fish could remain safe.

Notorious poachers and smugglers were approached through mediators for a compromise. 80 of them were invited to a meeting organised by Mr.P.A.Joseph, an NGO leader out of which 23 responded because they had no other socially acceptable alternative but to begin a new life through an EDC of their own. The Department withdrew many forest cases against pending them so that they could trust them. Those who did not join the EDC, started some independent business.

For effective control on the pilgrims, some other EDCs were formed. Entry to the Mangala temple was restricted to particular paths and same was done for Sabarimala. The pilgrims were asked to take tents and LPG etc. from the local EDC, on payment, so that unsustainable exploitation of firewood and small timber could be avoided.

Total 72 EDCs were thus formed in different parts for different purpose and activities. Members were engaged in joint patrolling with the Forest Department staff and preventing forest fires; and the identity card issued to some of them by the Department made them proudly feel to be a part of the Forest Department.

Eco-tourism was used as a major tool in the strategy. The EDC members were assured of regular and substantial income through this. About 50 sq.km. area in the buffer zone is open for tourists (hence this is called tourism zone) and since 4 lakh tourists visit PTR every year (excluding those for Sabarimala), a good sum (approx. Rs.200 crores/annum) comes from this

source. Now, the EDCs are being benefited by this since a part of the money collected from tourists goes to them.

Creating supportive environment

The authorities tried hard to ensure a supporting environment through the following means:

- Enabling government resolutions
- Intensive staff training
- Constituting micro planning terms
- Extensive awareness campaigns
- Use of credibility funds for trust building
- Posting committed team leaders
- Allowing imaginations to run wild.

The outcome:

Results of the sincere effort were overwhelming. The notorious poachers and smugglers are now a transformed people. Headloading has been considerably reduced and firewood collection for sale has come down by 60 to 70%. Honey collection has been also reduced and the livelihood as well as social status of the EDC members has improved significantly. There has been a 10-fold increase in the income of the poor pepper cultivators.

About two lakh poles have been saved annually due to regulated pilgrimage in Sabarimala. Pollution has also been controlled. The concerned EDC received the Indira Gandhi Vrikshya Mitra Award for its outstanding contribution.

5560 families i.e., about 40000 people have been benefited by this ecocodevelopment programme. Members of those EDCs who are engaged in some risky work have been insured for their life also. For instance, the actual salary of a member of Tribal Trekker' s EDC is Rs.3800/month out of which Rs.300 is paid as premium for insurance.

Sustainability of the programme:

1.4 million US\$ have been spent in PTR on the eco-development programme. The authorities have made specific arrangements so that the people(EDCs) can continue their work as earlier even after the funding is over. And this has been possible due to eco-tourism and improvement in the land holding status of the poor.

An apex body of the EDCs has been planned which will be known as the Periyar Foundation. The objective behind this Foundation is to make the EDCs independent from the Forest Department. The authorities have already encouraged the EDCs to take their own decision and decide their own strategy, and the proposed Foundation is expected to formalise this independence. Besides, it may also help in receiving grants from various agencies.

12 NGIs, who still work for the success of the programme, are paid by the Forest Department.

Distinguished features of the Periyar ecodevelopment programme:

- Negative dependency of the people has been substituted with a positive dependency, which secures the livelihood of the people through the conservation of forests.
- The Forest Department has encouraged people to have a feeling that the forest is at their disposal and that they are the saviours of it.
- The Forest Department has encouraged them to be independent.

In PTR, the authorities have tried to adhere to the following principles of ecotourism so that commercialisation of the resources can not take over the conservation programme:

- Ecologically sustainable
- Economically viable
- Socially acceptable
- Beneficial to local community.

Interaction with EDCs:

1. Ex-Vayana Collectors' EDC:

Vayana is the local term for cinnamon bark. The members of this EDC were notorious smugglers of this bark and sandalwood, and were also poachers. They penetrated deep into the forests for their collection and had covered about 80% the whole PTR.

They all come from the nearby areas and are not tribals. Each of them used to earn about Rs.25000 to 30000 per month from smuggling and poaching and the prices they got for their materials were as follows:

Cinnamon bark @Rs.30/kg (dry)
Sandal wood @Rs.250/kg
Bison meat @Rs.100/kg
Tusk @Rs.5000/kg

The bison meat was to be dried in the forest itself, often over fire. An adult bison can yield 7 quintals to 20 quintals of meat and hence killing one was quite money-fetching though the job was difficult and dangerous.

Sandalwood trees cut by them were numerous. Heartwood extracted from the timber was sold. 5 persons working for 10-15 days could make about 300 kg of such heart wood.

Now, their life has been transformed. They act as guides for the tourists for adventurous operations in PTR and receive Rs.3500/month/person from this source. Although the income is about 90% less than what they used to get from smuggling/poaching, in terms of net cash flow it is more or less the same as earlier because most of the money collected from smuggling etc. was being spent after litigations (forest cases) and bribing the concerned staff.

Their social status has greatly changed. Earlier, they used to visit home rarely and that too at night since the fear of getting arrested was in them. Now, they are happy with their family and people respect them. One of them has become a Sarpanch.

Their presence is a threat to other poachers and smugglers now, since they are very tough people and are determined to protect PTR. They arrested 50 culprits in 1998-2002 and made 75 seizures. In fact, one of their colleagues, Mr. Sugandhan, became a martyr four years ago while on a mission to catch poachers.

This EDC has been awarded at the South Asia Regional Conference on Eco-tourism held at Gangtok in 2002. They have also received The Jungles' Green Guard Award.

2. Grazier' s EDC:

This EDC has 88 members coming from 4 villages. There are two milk booths of this EDC which help the members spare a lot of time for some other work since now they do not have to go to the people to sell the milk but people come to their booth.

Price of their milk has now increased from Rs.12/litre to Rs.13. 70-80% of the HH income still comes from agriculture, but with credits received from eco-development project the members have tried to enhance the income through other business.

Each morning the booth situated at a central place of Periyar receives 150 litres of milk from the members. It is run by one or two paid persons.

Grazing for their cattle has been allowed in restricted areas. The men take care to see that the cattle return home before sunset. Hence, cases of cattle lifting have been almost nil.

3. Tribal Trekker' s EDC:

3 years ago there were 12 members in this EDC which has now increased to 21(including one women). They take tourists on trekking expeditions.

Earlier, fishing was their main business. MFP collection was done weekly or quarterly in a month and farming was also a secondary source of income. The maximum earning for a hardworking family was Rs.2000 per month. But now each member earns Rs.3500 as salary from the EDC and the income from farming supplements this.

They charge differently for different purposes. For instance, Rs.750/person/day for trekking.

The chairperson is selected annually in a governing body meeting of the EDC. An executive body is also there.

4. Mannankudi EDC:

This EDC is dominated by the Mannan tribals. These people used to help the poachers and excluding(due to religious belief) tusk and tiger' skin they collected almost all kinds of forest products.

Individual landholding size was negligible and money lenders exploited them variously. Crops grown were usually traditional, like raggi and paddy.

But now, the situation has changed. The landholding position has improved and they grow cash crops like pepper, plantain and vegetable, etc.. People having significant production of pepper earn about Rs.20000/annum from this source. Similarly, vegetables can fetch Rs.18000.

People having insignificant landholding are engaged either in fishing or honey collection. About 90 families depend on fishing with an average income of Rs.2000/family. Similarly, 12 families depend on honey collection with an income varying from Rs.500 to 2000 per family.

5. Paliyakudi EDC:

There are 138 families (belonging to the Paliya tribe) under this EDC who used to depend primarily on firewood collection due to insignificant landholding. Fishing is not preferred. The average income per month per family from firewood selling was Rs.1200/-. Now, only 18 of them are dependent on this source.

6. Periyar Colony EDC:

The member families used to collect firewood and thatch grass for sale during the rainy season. Now they collect only fallen and reject timber for their own genuine needs.

With micro-credits, the members have started various kinds of business like candle making, agarbatti making, etc.. They are 32 in number and are not tribals.

7. PETS EDC:

The Periyar Tiger Samrakshanam EDC was formed by the authorities to secure the livelihood of some of their own staff who were temporary watchers in PTR. The govt one day decided to discontinue their service due to want of funds, but since they were very experienced people the authorities tried to find out some alternative. Now, they continue their work as before and the monthly salary comes partly (for 12 days) from the govt and partly (for 14 days) from their own EDC.

After the formation of EDC, their income has increased from Rs.2500/month/person to Rs.3500. They organised nature camps in the forest and own bamboo grove inn. There is one outlet of this EDC inside PTR where tourists get binoculars and camera on hire.

Total membership is 68 which includes 6 women.

8. Vasant sena:

Women of 8 different EDCs voluntarily started patrolling in the forest after they saw the inspiring work being done by their men. This extraordinary contribution began in October 2002 with 6 members only, which has since increased to 100.

The area under their patrolling has sandalwood trees. Men go at night for patrolling and the women do it in the day time.

Each concerned EDC sends 50% of its women staff for patrolling twice a week. This way, each member has to do this only twice a week. The duty hours are from 11 am to 5 pm.

In festive occasions, Hindu members substitute for non-Hindu members and *vice versa* so that the work is not hampered and at the same time participation of the concerned member in the celebration becomes possible.

With microcredits, some members do small business like curry powder making, goat farming, pig farming, tapeoca cultivation, etc. The income per member from these sources varies from Rs.200 to Rs.2000 per month, depending upon the business.

The Forest Department has provided them with uniforms. They recently received the PV Thampi Memorial Endowment Award of Rs.5000.

Lessons learnt by the Forest Department:

For a successful eco-development programme:

- Bureaucratic attitude and work ethics must change.
- Sharing power means becoming more powerful.
- Building institutions to expected levels need perseverance, patience and sincerity.

The Priyar experiment has given a new definition to the concept of eco-development, according to which eco-development can be defined as a compromise between two mutually opposite groups for a viable and rational solution.

Eco-development builds social capital which empowers people and ensures capacity building for management. It attempts a social fence around the Park by fostering partnership, improving capacity, and empowering local communities.

The programme has facilitated the resurgence of an old tradition of the local Mannans. According to this tradition, the whole PTR area (under their access) belongs to them and is divided into seven kingdoms, each under the administration of a headman or *kani*. Each *kani* is responsible for some particular natural entity like, one is for water, one is for elephant, etc.. The formation of EDCs with a view to preserve tribal heritage has resulted in this resurgence which causes a little embarrassment among the authorities as the sense of acute belongingness might result in a conflict between the two sides. However, the EDC members believe that this tradition will strengthen the community protection of the resources since it will now give rise to groups committed for the protection and management of specific entities like tiger, elephants, etc.. A Mannan saying reflects their perception of the conservation programme as follows:

"If you are able to conserve one grass, then you are also able to protect a tiger".

And the Mannans are quite enthusiastic about the resurgence of the *kani* tradition².

² The ceremonial rituals were performed just when we visited their EDC. It was after our enquiry that the Departmental staff came to know about it and its objectives.

Observations and remarks

Kalakad Tiger Reserve:

The authorities claim high rate of success and ecodevelopment programme is run through the VFCs under the supervision of an Ecodevelopment officer. The success may be due to the fact that headloading was the only major issue here, but the claim itself reminded of the police department asserting that the law & order is under its control.

People are not encouraged to directly and actively participate in the management of the PA. Ecotourism is not promoted by the authority(Director) since he is against any commercial use of the ecosystem of the PA. Hence, besides the political/revenue boundary, a psychological boundary has also been created between the people and the PA so as to assert that no form of interrelationship exists between the two.

The EDC members interacted with at Kalakad did not appear to have a great feeling of doing something for the conservation of the KMTR. They just seemed to divert their minds for the options currently adopted by them for the sustenance of their livelihood.

Periyar Tiger Reserve:

The Ecotourism Officer humbly claimed only 10% success of the programme (particularly because he thought some more time is necessary to let the initiatives mature), but interaction with various EDCs suggests that the achievements are nevertheless very inspiring. 23 poachers/smugglers have now abandoned their previous practice and are engaged in ecotourism inside the PTR which has earned them both an assured monthly income as well as social honour. Their EDC is known as Ex-Vayana Collector' s EDC. Some tribal youths previously engaged in illegal activities now run Tribal Trekkers EDC. Similarly, the graziers and firewood collectors have their own EDCs and financial help received from PTR has changed a lot in their profession. We found all these people earnestly wanting the protection of the PTR and the authorities encourage their positive dependency in the PA. No attempt is being made to delineate a psychological boundary between these people and the PA though in core area certain restrictions do exist. However, the authorities feel uncomfortable when the local tribals claim the whole area as their traditional kingdom and want to assert the regime of their seven headmen in this area(PTR).

In KMTR, the Director claims that PTR authorities learnt the use of microcredit schemes from them, but PTR teaches a lesson that **sharing power means becoming more powerful**, which the KMTR authorities are yet to recognise.

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- Kalakad Tiger Reserve:
 - Dr. R. Annamalai, Director
 - Eco-development Officer, KMTR
 - Mr. Ponnu Raj (Forester)
 - Mr. Anwarddin (Eco development Range Officer)
 - Mahalaxmi, Lata and Ramesh (*NGO workers of Arumugal trust*)

- Periyar Tiger Reserve:
 - Mr. Pramod Krishnan, Ecodevelopment Officer, PTR
 - Mr. Abdul Basheer, Ecotourism Officer, PTR
 - Dr. G.K.Joseph, Extension Education Officer, PTR
 - Mr. Sunil
 - Miss Sugandhi P.
 - Mr. Qureshi, Mr.Baby and Mr. Naushad
 - Mr. Rajan
 - Mr. Babukutti
 - Mr. Rajappan
 - Ms. Sali Phillip

Annexure-1

CHRONOLOGICAL DEVELOPMENTS

OF

INDIA ECODEVELOPMENT PROJECT

1. June 1994 - UNDP funded study got conducted through Indian Institute of Public Administration for Eight Sites.
2. Jan. 95 - US \$ 2 millions sanctioned as Advance release for Project Preparation.
3. Jan. 96 - First instalment of PPF Advance released to Project States.
4. March 96 - Second instalment of PPF Advance released to Project States.
5. July 96 - Negotiations conducted by a Team of officers of Central Govt and State Govts. with the World Bank in Washington.
6. Dec 96 - Project declared effective by the World Bank.
7. Oct 97 - Cabinet Committee on Economic Affairs approved the Implementation of the Project.
8. Dec 97/Jan 98 - First instalment of Funds released to the Project States.

(Source: Dr. Asha Rajvanshi quoted in <http://www.envfor.nic.in/pt/ecoprj/ecoprj.html>)

Annexure-2

FINANCIAL PROFILE OF INDIA ECODEVELOPMENT PROJECT

Total Cost : US \$ 67 millions (Rs 294.93 crores)

Financing pattern

1. Loan from IDA US \$ 28 M/Rs 122.10 Cr.
2. GEF Grants US \$ 20 M/Rs 87.98 Crores
3. Governments of India/States US \$ 15 M/Rs 64.63 Crores
4. Project Beneficiaries US \$ 4 M/Rs 20.22 crores (in the form of Labour)

Component-wise Cost

1. Improved PA Management - US\$ 15.3 M/Rs 67.35 Cr.
2. Village Ecodevelopment - US\$ 36.1 M/Rs 158.91 Cr.
3. Ecodevelopment Support - US\$ 5.2 M/Rs 22.89 Cr.
4. Project Management - US\$ 5.8 M/Rs 25.53 Cr
5. Future Biodiversity Projects - US\$ 2.6 M/Rs 11.45 Cr.
6. PPF Reimbursement - US\$ 2.0 M / Rs 8.80 Cr.

□ Fund Flow

First installment of Funds for 1997-98 released to Project States during Dec 97/Jan 98 to the tune of Rs 13.865 Crores (Statewise and Component wise details attached). Proposal for release of second instalment of Rs 1 crore submitted to Fin. Div.

Statement showing release of funds to project states under India eco-development project:

Main Head/Activities	Karnataka	West Bengal	Kerala	Gujarat	Bihar	Madhya Pradesh	Rajasthan	Total
(Rs. in Lakhs)								
1. IMPROVED P.A. MANAGEMENT	29.60	180.00	196.50	150.00	38.60	53.50		
	37.80	686.00						
2. VILLAGE ECO-DEVELOPMENT PROGRAMME	16.10	155.00	125.00	138.00	21.00	08.50		
	19.60	483.20						
3. ENVIRONMENTAL EDUCATION & AWARENESS COMPAIGNS	03.50	12.00	22.00	29.00	07.00	3.20		
	0.20	76.90						
4. IMPACT MONITORING & RESEARCH	10.80	36.50	106.00	43.12	06.00	4.00		8.80
	215.22							
TOTAL	60.00	383.50	449.50	360.12	72.60	69.20		66.40
	1461.32							
UNSPENT BALANCE (Out of PPF)	10.00	06.50	---	0.12	22.60	16.40		16.40
	74.82							
NET AMOUNT RELEASED	50.00	377.00	449.50	360.00	50.00	50.00		50.00
	50.00	1386.50						

N.B.:- A case recommending release of additional funds to the tune of Rs. 1 Crore to West Bengal is pending with the Internal Finance Division, (MoEF)

(Source: Dr. Asha Rajvanshi quoted in <http://www.envfor.nic.in/pt/ecoprj/ecoprj.html>)

Annexure-3

The contribution of RLEK in facilitating people's participation in PA management

RLEK, an NGO of Uttaranchal, designed a strategy for effective community management in the then proposed Rajaji National Park. There were several Van Gujjar families inside this Park and RLEK proposed the strategy to effectively involve these people in the management of the Park rather than evicting them.

As per this proposal, the Van Gujjars were to become lead managers of the core area while other groups were to have lead management roles in relation to the resources and areas that they used. The Forest Department was to play the role of a supporter and monitor.

The plan analysed the major ecological problems of the park area and concluded that a restructuring of the management system along with power to the local communities to manage the area could help solve the problem. It also envisaged effective monitoring of the area by the local communities through the use of wireless sets.

However, the government did not finally accept this proposal and the Van Gujjars were evicted from the Park. No community involvement is currently reported from this area.

(based on www.rlek.org and personal communication with the office of the Director, Rajaji National Park)