

EXECUTIVE SUMMARY OF FINAL REPORT

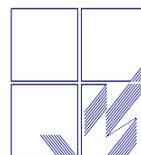
INTENSIVE PROJECT PERFORMANCE REVIEW-INDIA ECO-DEVELOPMENT PROJECT (PHASE III)



Submitted to:

**OFFICE OF DIRECTOR (PROJECT TIGER)
MINISTRY OF ENVIRONMENT & FORESTS
GOVERNMENT OF INDIA**

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Abbreviations Used

ACF	:	Assistant Conservator of Forests
AI	:	Artificial Insemination
APO	:	Annual Plan of Operations
BTR	:	Buxa Tiger Reserve
CDF	:	Community Development Fund
DCF	:	Deputy Conservator of Forests
DD	:	Deputy Director
DFD	:	Deputy Field Director
DFO	:	Divisional Forest Officer
DRDA	:	District Rural Development Agency
DRF	:	Deputy Range Forester
EC	:	Executive Committee
EDC	:	Eco Development Committee
EDO	:	Ecodevelopment Officer
EIA	:	Environmental Impact Assessment
EPT	:	Elephant Proof Trench
FD	:	Field Director
FPC	:	Forest Protection Committee
GB	:	General Body
GBM	:	General Body Meeting
GNP	:	Gir National Park
GO	:	Government Order
HH	:	Household
IEP	:	India Ecodevelopment Project
JFM	:	Joint Forest Management
KFRI	:	Kerala Forest Research Institute
KTDC	:	Kerala Tourism Development Corporation
LoC	:	Letter of Credit
LPG	:	Liquid Petroleum Gas
MLA	:	Member of Legislative Assembly
MPFD	:	Madhya Pradesh Forest Department
NABARD	:	National Agricultural Bank for Rural Development
NGI	:	Non Governmental Individual

NGO	:	Non-Governmental Organizations
NIC	:	Nature Interpretation Centre
NNP	:	Nagarhole National Park
NTFP	:	Non Timber Forest Produce
PA	:	Protected Area
PCCF	:	Principal Chief Conservator of Forests
PF	:	Project Fund
PRA	:	Participatory Rural Appraisal
PT	:	Project Tiger
PTO	:	Project Tiger Office
PTR	:	Palamau Tiger Reserve
PTR	:	Pench Tiger Reserve
PTR	:	Periyar Tiger Reserve
RFO	:	Range Forest Officer
RTR	:	Ranthambhore Tiger Reserve
SDO	:	Sub-Divisional Officer
SHG	:	Self Help Group
TOR	:	Terms of Reference
TOR	:	Terms of Reference
VDF	:	Village Development Fund
WDO	:	Women Development Officer

EXECUTIVE SUMMARY

Introduction

Rationale

In India, increasing exploitation of natural resources by an increasing population is posing a severe threat to biodiversity conservation. There is an over dependence of population on forest resources, particularly, for firewood, fodder for cattle, timber for construction, NTFP for subsistence and land encroachment for agriculture. This has a direct negative impact on the habitat quality of forests thereby adversely affecting the wildlife populations. The Protected Areas of the country also face the above threat.

The inadequacies of the existing policy regime and related programmes/schemes in substantially reducing the population and poverty-based threat to biodiversity has prompted national policy makers to search for innovative and workable solutions for securing and maintaining a steady state vis-à-vis the impact of population pressure on biodiversity. The India Ecodevelopment Project (IEP) is one such attempt.

IEP strategy is based on three key premises. The first premise is that population pressure on natural resources including forests and Protected Areas (PA) is the key threat to biodiversity conservation. The second premise is that it is poverty that drives people to over exploit forest and natural resources for their survival. The third premise is that inadequate management of PAs impacts adversely on biodiversity. Ergo, solution to the biodiversity conservation problematique lies in (i) reducing the pressure of population and poverty on the PAs by, among others, socio-economic development of areas near the PAs' buffer zones and its immediate environs; and (ii) improving management of PAs. This provides the underpinnings of IEP's strategy.

Overview of IEP

Objectives, Structure, and Time Frame: IEP was designed and structured with a five-year life span – October 1996-September 2001 with the following objectives¹:

1. Improve capacity of PA management to conserve biodiversity and increase opportunities for local participation in PPA management activities and decisions.
2. Reduce negative impacts of local people on biodiversity, reduce negative impacts of PAs on local people, and increase collaboration of local people in conservation efforts.
3. Develop more effective and extensive support for ecodevelopment.
4. Ensure effective management of this project
5. Prepare future biodiversity projects².

The project was assigned a budget of US\$67 million, which was allocated as follows³ (percent of the base costs)⁴:

- | | |
|----------------------------|-----|
| 1. Improved PA Management: | 22% |
|----------------------------|-----|

¹ The World Bank, Staff Appraisal Report, Ecodevelopment Project, August 3, 1996, page 8

² Second Ecodevelopment Project, Biodiversity Information Project, and Ex-situ Conservation project

³ The total adds up to 101% because of rounding to zero decimal point

⁴ The World Bank, Staff Appraisal Report, Ecodevelopment Project, August 3, 1996, pages 8&9

2. Village ecodevelopment:	55%
3. Education & awareness, and impact monitoring and research:	8%
4. Overall Project Management:	9%
5. Preparation of future biodiversity projects:	4%
6. Reimbursement of the Project Preparation Facility:	3%

It is clear from the above that Village Ecodevelopment was assigned the highest priority among all the IEP project components, followed by Improved PA Management

For several reasons, there was a delay of two years in launching the project. Accordingly, the World Bank and the Project Tiger Office (Ministry of Environment & Forests, Government of India) agreed to extend the project by two years ending June 2003. The World Bank and the Project Tiger Office granted a further one-year extension, ending June 2004. Thus, IEP was implemented in three phases:

Phase I:	October 1998 - September 2002
Phase II:	October 2002 - June 2003
Phase III:	July 2003 - June 2004

The extension of Phase I into Phase II was necessitated by the late start of Phase I activities in all the seven PAs that distorted the planned expenditure and benefit-flow schedule, particularly of the Village Ecodevelopment component of IEP, with benefits beginning to trickle only in the last two years of Phase I. While during Phase I, all the seven PAs incurred substantial expenditure in the initial years under the Improved PA Management component, expenditure under the Village Ecodevelopment component was much below the planned expenditure in all the seven PAs due to both (i) late start of the project and (ii) inadequate trust of villagers on forest officials that precluded villagers from participating in the programme. With substantially increased level of confidence and trust among the villagers and forest officials during the last two years of Phase I, Village Ecodevelopment activities began to grow. However, by this time the project was nearing its scheduled end-date and, thus, funds remained unutilized. The availability of funds prompted the extension (on a no cost basis) of the project into Phase III, primarily to continue the Village Ecodevelopment activities and consolidate the gains made during Phase I.

Project Areas: Seven locations were selected as listed below.

1. Buxa Tiger Reserve (West Bengal)
2. Gir National Park (Gujarat)
3. Nagarhole National Park (Karnataka)⁵
4. Palamau Tiger Reserve (Jharkhand)
5. Pench Tiger Reserve (Madhya Pradesh)
6. Periyar Tiger Reserve (Kerala)
7. Ranthambhore Tiger Reserve (Rajasthan)

The Ministry of Environment and Forests, Government of India selected the seven protected areas located in seven different states for IEP implementation, in consultation with NGOs and state governments. The selection criteria consisted of (i) biodiversity importance; (ii) biogeographic representation; and (iii) likelihood of success, that is,

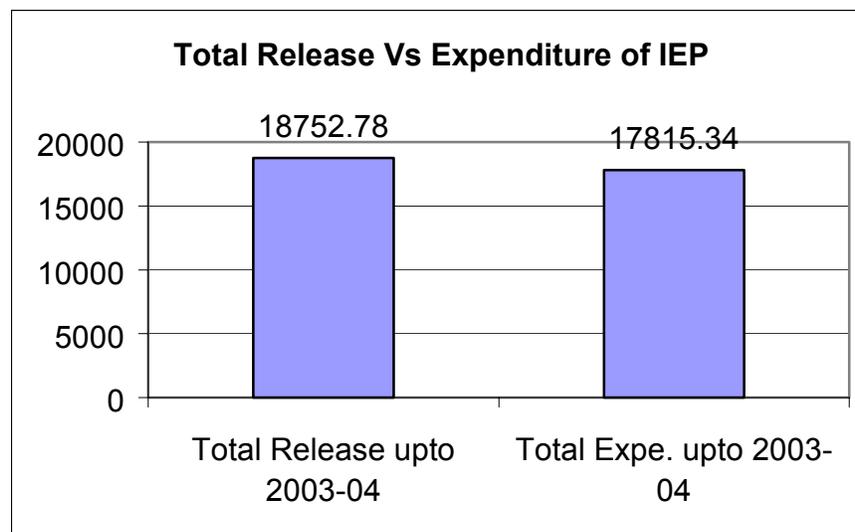
⁵ Dropped in Phase III (2003-2004)

extent and intensity of human pressure, PA management capacity, existing infrastructure, accessibility, state and national government support and state government responsiveness to community and NGO involvement in forest management.

Overall Project Performance

The overall funds utilization is high at 95% of the released amounts⁶, indicating a good performance. (See Figure 1 and Table 1)

Figure 1



During the initial period of project implementation the financial achievement remained considerably low, for example, during 1997-98 about 50% funds were utilized mostly for creating infrastructure and improving PA management capacity. This is indicative of low absorptive capacity of PAs for incurring expenditure in the initial phase on specialized projects. Once the PAs had upgraded their infrastructure as well as capacity for undertaking implementation of specialized projects, the investment levels in subsequent years increased to satisfactory levels; after 1998-99 investment levels were over 80% of released funds, indicating an upsurge in project activity.

It was during 1998-99 and later that substantial investments were made under the Village Ecodevelopment component across most of the PAs. This component suffered in the initial years, due to lack of trust between PA officers and beneficiary families, which was primarily a result of earlier confrontational relationship arising out of the command and control mechanisms used by PA officials for PA protection and biodiversity conservation. However, a participatory approach for PA management started taking shape over time and this increased villagers' confidence to participate in project activities and also give their 25% contribution. The year 2000-01 saw expenditure overshooting released funds. In the extension phases (2002-2003 and 2003-2004), the utilization of project funds remained high.

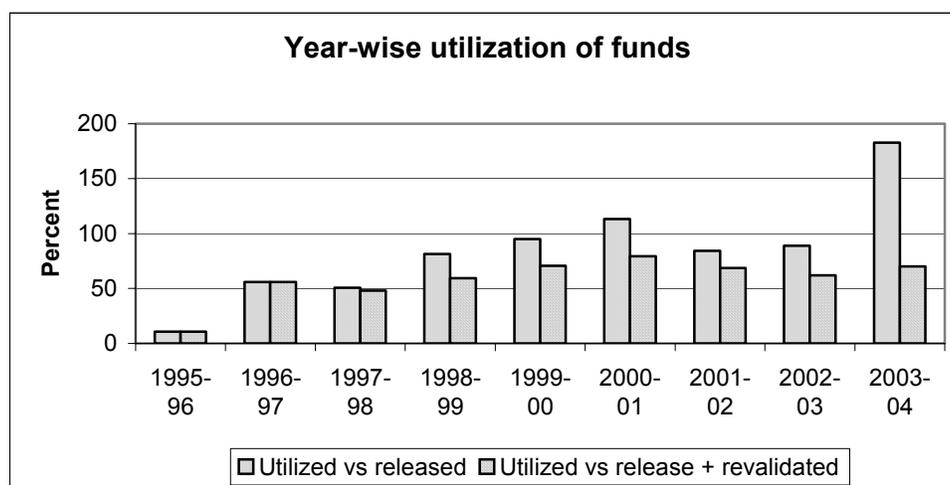
⁶ Central funds; IDA, GEF and GOI

Table 1 - Year-wise release and utilization of fund

Year	Released (Rs Lakh)	Utilized (Rs Lakh)	% Utilization against released amount	% Utilization against released + revalided amount
1995-96	190.00	20.24	10.65	10.65
1996-97	0.00	94.99	55.96	55.96
1997-98	1386.50	700.95	50.56	47.97
1998-99	2043.51	1664.65	81.46	59.37
1999-00	3327.44	3159.72	94.96	70.74
2000-01	3085	3489.08	113.10	79.44
2001-02	4000	3367.00	84.17	68.67
2002-03	3521.81	3131.85	88.93	61.92
2003-04	1198.52	2187.2	182.49	70.00
Total	18752.78	17815.34	95.00	95.00

For the final year of project implementation, the funds utilization was high at 182.49% because the revalided amount has not been added to the released figures for the year 2003-2004. However, on adding the revalided amount, the percent utilization drops down to 70%. Figure 2 below gives the utilization of funds against released amounts with and without the revalided amounts.

Figure 2



Component-wise and phase-wise (Phase I, II and III) performance of IEP for all PAs together is given below in Figures 3 to 13. The utilization percentages are against the financial targets that includes the revalided amount along with the released amounts. Improved PA Management did quite well in all the three phases, whereas, Village Ecocodevelopment showed a progressively increasing utilization of funds from phase I to III. It was easier to spend funds under Improved PA Management, as initially the PA authorities focused on infrastructure development and procurement. This did not require

stakeholder participation and the PA authorities could take fast decisions pushing the utilization percentage of the released funds. The investments under Village Ecodevelopment picked up gradually, as it involved convincing the beneficiaries to come forward and participate in the project. It involved establishing of EDCs, making of microplans, building consensus on activities and required the EDC members to contribute 25% share of the total budget. People took time in understanding the project in its true spirit and that is why an increase in investment levels is seen as the project implementation progressed over the years. The other two components of Environmental Education and Awareness and Impact Monitoring and Research performed on an average basis. Many PAs could not launch awareness campaigns on a large-scale and take advantage of developing infrastructure under the Environmental Education and Awareness component leading to reduced expenditure. For the component of Impact Monitoring and Research, initially there was a time lag in awarding research studies to competent agencies, which limited the expenditure.

Figure 3

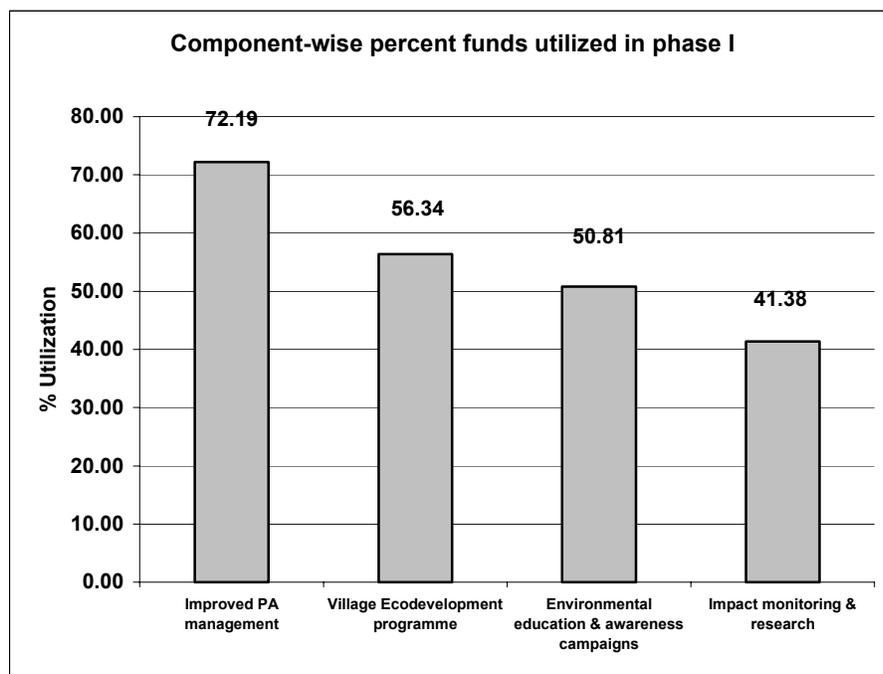


Figure 4 – Component-wise percent funds utilized in phase II

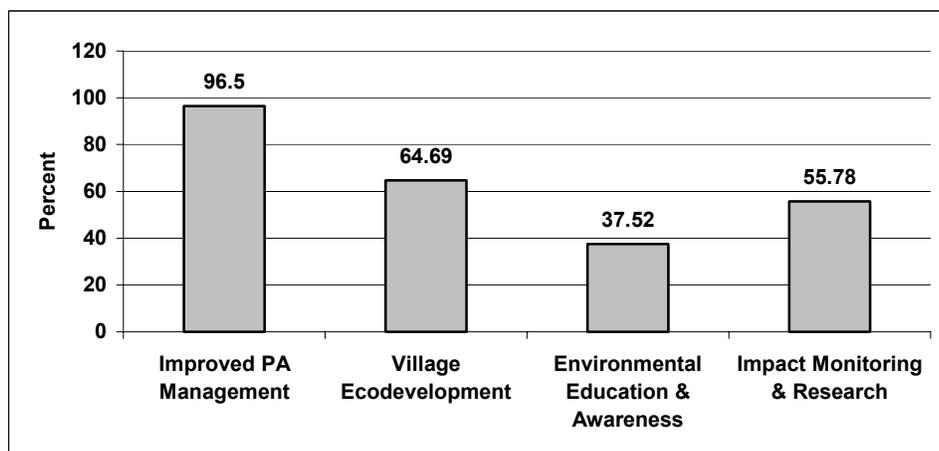


Figure 5

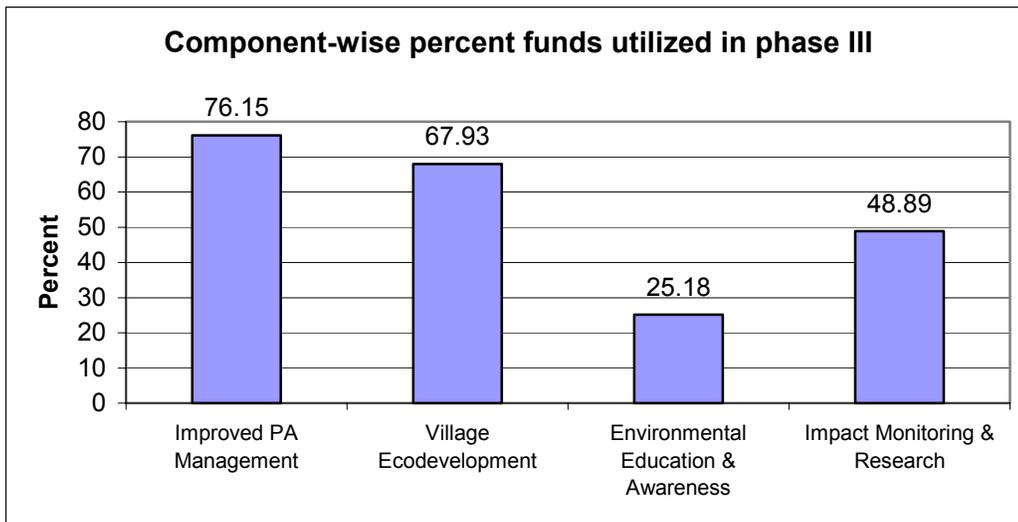


Figure 6

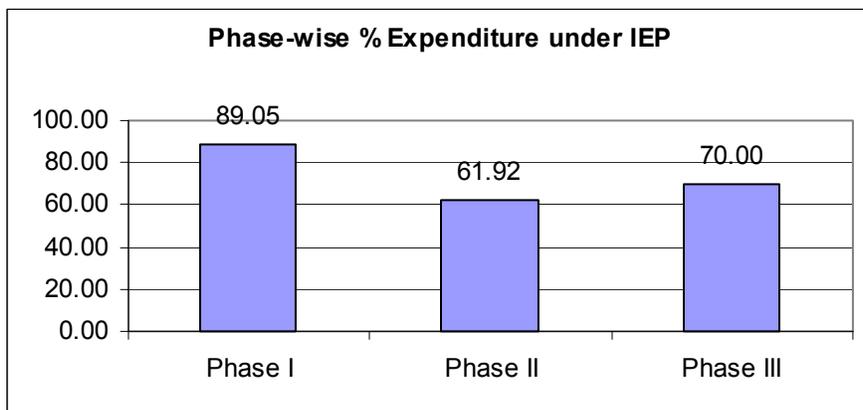


Figure 7

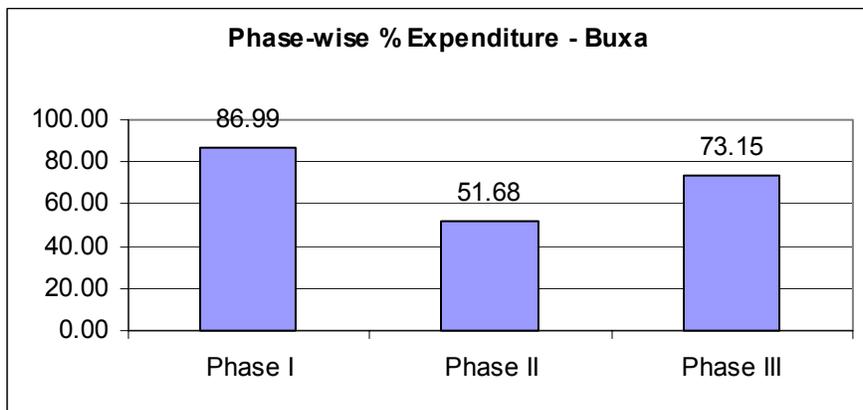


Figure 8

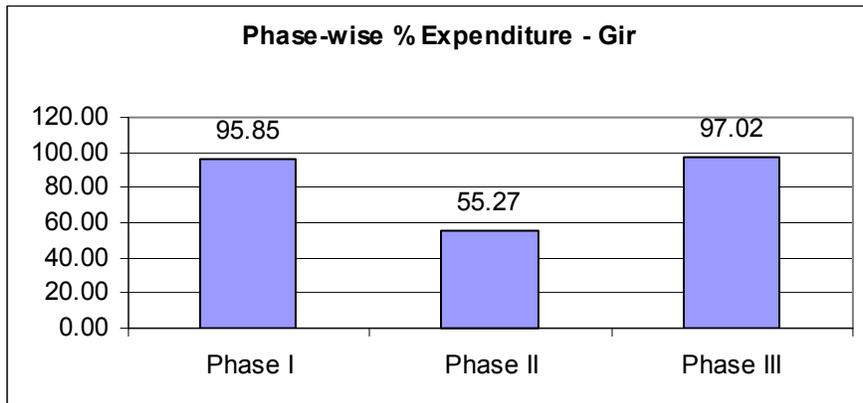


Figure 9

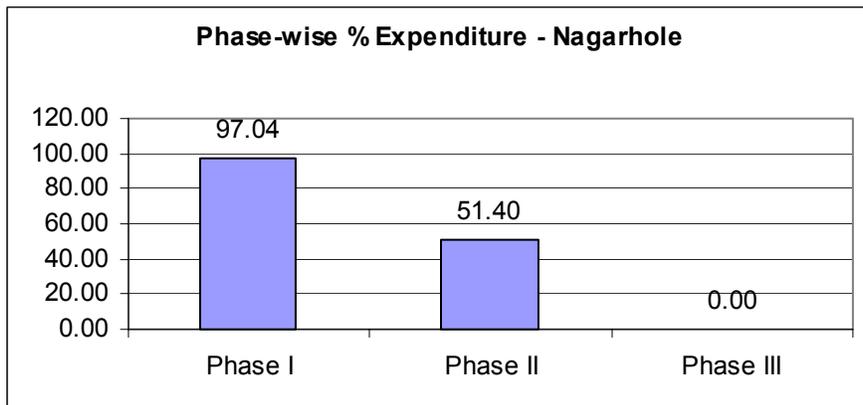


Figure 10

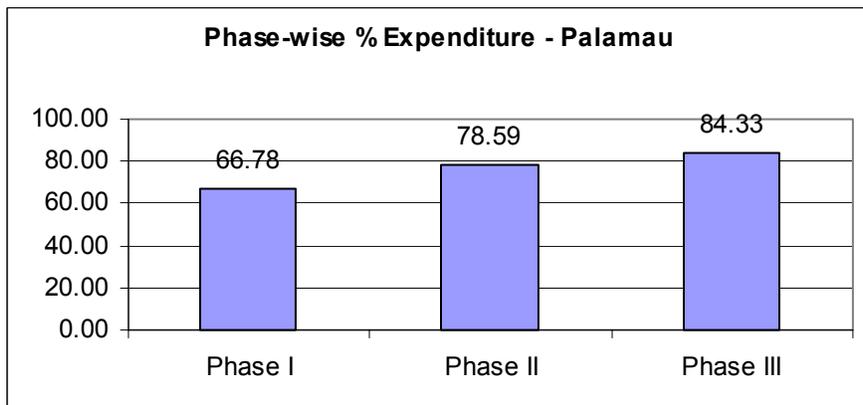


Figure 11

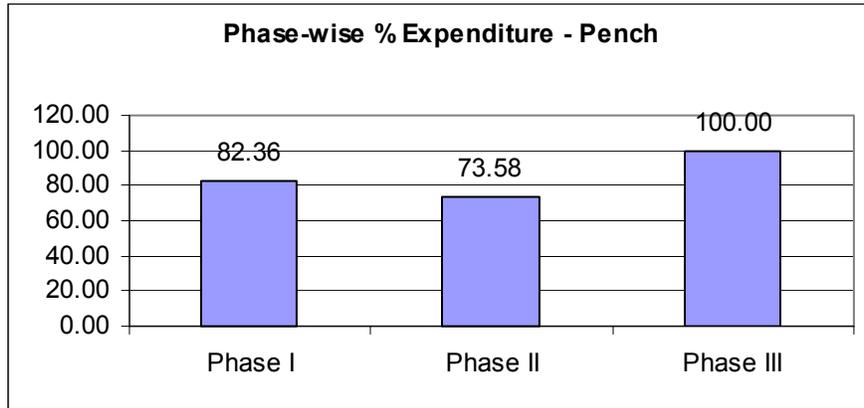


Figure 12

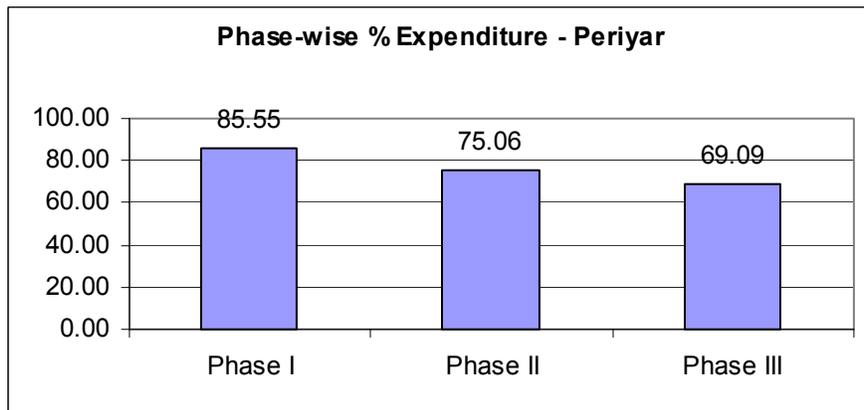
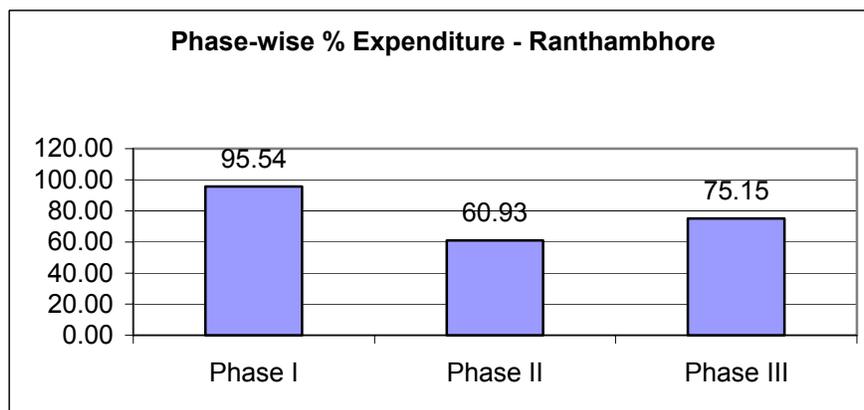


Figure 13



Investments were made during all the phases on improving PA infrastructure as well as in EDC villages. Cumulative achievement of some of the noteworthy activities are presented below in Table 2.

Table 2: PA-wise physical achievements under IEP

S. No.	Item	Unit	Achievement
	Buxa Tiger Reserve		
	Improved PA Management		
1.	New management plan	Number	1
2.	Glade improvement	Hectare	100
3.	Canopy Opening	Hectare	100
4.	Weed removal	Hectare	100
5.	Boundary line demarcation	Km.	194
6.	Road/Track path improvement	Km.	257
7.	Staff quarters	Number	52
8.	Wireless towers	Number	19
9.	Watch Towers	Number	2
10.	Wireless sets	Number	51
	Village Ecodevelopment		
11.	Microplans	Number	59
12.	Number of families covered	Number	9000
13.	LPG/Biogas/Smokeless Chullah installed	Number	300
14.	Technical Workshops	Number	22
15.	Number of research projects awarded	Number	17
16.	Study Tours	Number	10
	Gir National Park		
	Improved PA Management		
1.	New management plan	Number	1
2.	Weed removal	Hectare	5018
3.	Boundary line demarcation	Km	92
4.	Boundary pillars erection	Number	823
5.	Protection wall	Km	41
6.	Road/Track path improvement	Km	196.5
7.	Staff quarters	Number	44
8.	Patrol camps	Number	32
9.	Check dams	Number	36
10.	Causeways	Number	28
11.	Wireless towers	Number	9
12.	Wireless sets	Number	--
13.	Pollarding Plot	Hectare	50
	Village Ecodevelopment		
14.	Microplans	Number	109
15.	Number of families covered	Number	15599
16.	LPG/Biogas installed	Number	8874
17.	Number of research projects awarded	Number	17
	Nagarhole National Park		
	Improved PA Management		
1.	New management plan	Number	1
2.	Weed removal	Hectare	1966.50 ⁷
3.	Road/Track path improvement	Km.	633

⁷ In km; weeds cleared on both sides of roads and teak plantations

S. No.	Item	Unit	Achievement
4.	Staff quarters	Number	41
5.	Check dams	Number	50
6.	Wireless towers	Number	5
7.	Wireless sets	Number	97
	Village Ecodevelopment		
8.	Microplans	Number	108
9.	Number of families covered	Number	15500
10.	LPG/Biogas installed	Number	7000
11.	Number of research projects awarded	Number	35
	Palamau Tiger Reserve		
	Improved PA Management		
1.	New management plan	Number	1
2.	Weed removal	Sq km	21.85
3.	Boundary line demarcation	Km.	240
4.	Road/Track path improvement	Km.	266.50
5.	Staff quarters	Number	8
6.	Check dams	Number	8
7.	Check dams (including in villages)	Number	256
	Village Ecodevelopment		
8.	Microplans	Number	65
9.	Number of families covered	Number	5321
10.	LPG/Biogas installed	Number	1110
11.	Pressure cooker	Number	1605
12.	Improved stove including Nutan stove	Number	302
13.	Pond construction	Number	137
14.	Well digging	Number	254
15.	Hand pumps	Number	274
16.	Land leveling	Sq Ft	68, 19,404
17.	Number of research projects awarded	Number	8
	Pench Tiger Reserve		
	Improved PA Management		
1.	New management plan	Number	1
2.	Weed removal	Hectare	9897
3.	Road/Track path improvement	Km.	859
4.	Erection of boundary pillars	Number	26
5.	Staff quarters	Number	28
6.	Check dams	Cmt	19481
7.	Wireless towers	Number	14
8.	Wireless sets	Number	51
9.	Construction of game proof walls	Km	50
	Village Ecodevelopment		
10.	Microplans	Number	99
11.	Number of families covered	Number	10298
12.	Pastureland development	Hectares	103
13.	Approach roads	Run. M	88,000
14.	LPG/Biogas installed	Number	3011
15.	Kerosene stove	Number	1185
16.	Farm bunding	Cmt	1,94,371

S. No.	Item	Unit	Achievement
17.	Pond development	Number	167
18.	Well digging	Number	282
19.	Check dams in and near villages	Number	5384
20.	Pressure cooker	Number	7299
21.	Number of research projects awarded	Number	10
	Periyar Tiger Reserve		
	Improved PA Management		
1.	New management plan	Number	1
2.	Vayal maintenance	Hectare	573
3.	Road/Track path improvement	Km.	218
4.	Staff quarters	Number	39
5.	Rock Check dams	Number	7919
6.	Wireless towers	Number	27
7.	Wireless sets	Number	58
	Village Ecodevelopment		
8.	Microplans	Number	72
9.	Number of families covered	Number	5540
10.	LPG/Biogas installed	Number	2000
11.	Improved Chullah	Number	50
12.	Barbed wire for crop protection	Meters	8874
13.	Bore wells	Number	2
14.	Number of research projects awarded	Number	36
	Ranthambhore Tiger Reserve		
	Improved PA Management		
1.	New management plan	Number	1
2.	Weed removal	Hectare	167
3.	Road/Trek path improvement	Km	57
4.	Boundary line demarcation (pillars)	Number	455
5.	Staff quarters	Number	49
6.	Check dams	Number	5
7.	Wireless towers	Number	4
8.	Wireless sets	Number	91
	Village Ecodevelopment		
9.	Microplans	Number	62
10.	Number of families covered	Number	14459
11.	LPG/Biogas installed	Number	13582
12.	Pond construction	Number	34
13.	Check dams	Number	12
14.	Well digging	Number	4
15.	Crop protection wall	Km	30
16.	Approach road	Km	22.75
17.	Number of research projects awarded	Number	1

Lessons Learnt

- Microplans should have budgetary provisions for all the families of the village and not just those who join EDC initially.
- Inclusion of all villages falling in impact zone.

- For increased community participation there should be uniform rates of villagers contribution across schemes.
 - 25% in IEP but in some central schemes 10% in adjacent villages.
- Microplan budget utilisation is, in general, inversely related to population size in the initial years (Phase I)
- For sustainability of EDCs optimal utilization of VDF is required
 - Use as revolving fund
 - Invest in income generating activities for EDC
 - Part of VDF to be fixed for interest earning for maintaining assets generated through IEP
 - EDC linkages with micro-enterprises
 - Formation of SHGs are good vehicles for empowering women
- For effective project implementation, following pre-requisites must be met
 - Adequate field level staff
 - Smooth & timely fund flow
 - Adequate mechanisms for integrating PA plans & related strategies with financial planning
 - Availability of microplans (local language) from the start of th project
 - Meeting/resolution registers, account details with village EDCs
 - Staff capacity building/skill development trainings should be completed in first year
 - Capacity of EDC chairman needs enhancement with respect to accounting & records management

BUXA TIGER RESERVE

Project Progress Status

BTR has utilized 96% of funds released (including revaluated amounts) during the project period (see Table 3 and Figure 14). A year-wise account of utilization of released and revaluated funds is given in Table 3 and Figure 15.

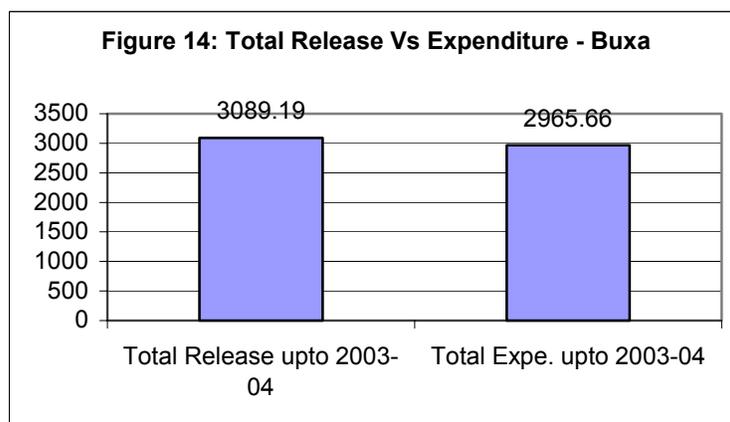


Table 3 - Year-wise funds utilization (Rs. Lakhs)

Year	Release	Expenditure	Revaluated Amount	% Utilization
1995/96	30	8.94	21.06 (1996/97)	29.8
1996/97	0	14.56	6.5 (1997/98)	69.14
1997/98	377	174.605	208.895 (1998/99)	45.53
1998/99	457.7	305.399	361.2 (1999/00)	45.81
1999/00	512.8	771.08	102.94 (2000/01)	88.22
2000/01	459.39	560.96	1.37 (2001/02)	99.76
2001/02	848.63	500.56	349.44 (2002-03)	58.89
2002/03	217.38	292.95	273.87 (2003-04)	51.68
2003/04	186.29	336.62		73.15
Total	3089.19	2965.66	1325.27	96

The overall expenditure as a percentage of the sum of released and revaluated amounts for Buxa stands at 96%. However, as can be seen from the table above, the first year's utilization was very low at 29.8%, which was due to inadequate infrastructure of Buxa at project start. To compensate for the initial slow start of the project, extra efforts and investments in construction activities and equipment and logistics were made

in the following year. This resulted in enhanced utilization of funds at 69.14%. For the years 1997-98 and 1998-99, the expenditure remained lower than 50%. Constraints imposed by absence of a management plan and lack of participation by the villagers perhaps limited the expenditure in these years. These constraints were subsequently addressed to a large extent, pushing the budget utilization to 88% and 99% during 1999-2000 and 2000-01 respectively.

However, in the years 2001-2002 and 2002-2003 of project implementation, the funds utilization declined sharply to 58.89% and 51.68% respectively. Thus, the gains achieved during 1999-2000 and 2000-2001 could not be sustained in these years. This decline in funds utilization was due to three key factors. First, a 46.5% reduction in the approved APO for 2001-2002 – from Rs 1825.91 lakhs to Rs 850.00 lakhs hampered investments. Such reductions in the APO budget reflect inadequate coordination between financial planning and planned project activities, and are best avoided lest project implementation is adversely impacted. Another reason for low funds utilisation was the fact that EDC/FPC did not take benefits as a result of which, microplan activities in these EDCs/FPCs were not implemented. A third reason for low funds utilization was transfers of senior officers (FD). However, with the new FD in place, the fund utilization again picked up and in the final year of project implementation stood at 73.15%. This happened, as a few EDCs derived benefits from the project in this year only.

Figure 15

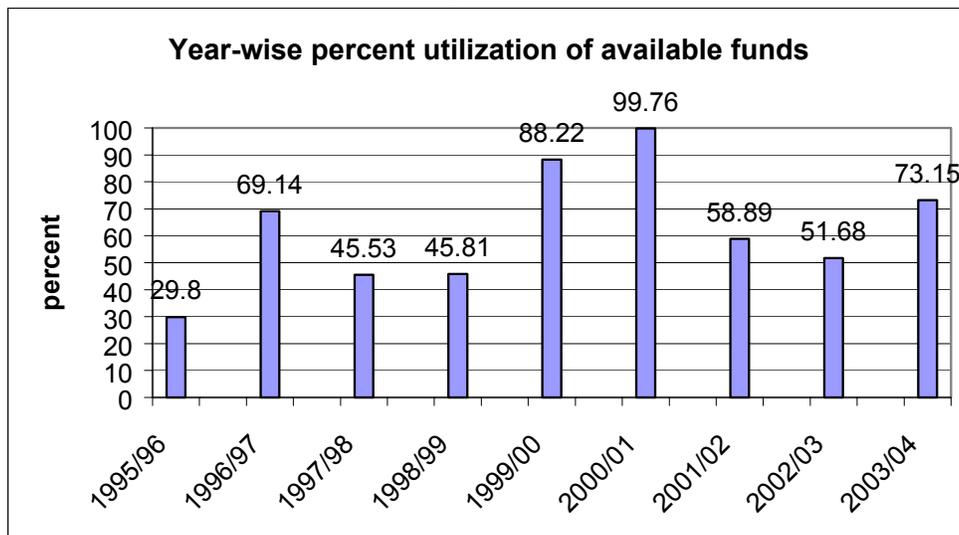


Table 4 - Component-wise funds utilization as a percentage of APO targets - Buxa

Components	Phase I	Phase II	Phase III
Improved PA Management	42.41	30.76	38.31
Village Ecodevelopment	33.69	42.08	44.69
Environmental Education and Awareness	23.74	95.71	80.24
Impact Monitoring and Research	17.02	42.86	77.63
Total	35.68	39.49	44.17

Available APO funds under various components remained largely unutilized in all the three phases (see table 4 above). Whereas, infrastructure was added to bolster management capacity under the Improved PA Management, a lot more could have been achieved had more funds been spent on planned and designated activities. Fund utilization also remained low for Village Ecodevelopment in all the three phases. The only component that showed remarkable improvement in terms of achieving APO targets was Environmental Education and Awareness. However, in Phases II and III, its total outlay was quite low. Funds under the component of Impact Monitoring and Research were also not fully utilized; some meaningful expenditure was incurred only in the second and third phase.

APO outlay for 2003 – 2004 for BTR was Rs. 779.64 lakhs. This included both investment and recurrent costs. Till March 2004, the overall utilization of funds by PA authorities as a percentage of financial target was low. The PA had spent Rs.336.38 lakhs as against the outlay of Rs.779.64 lakhs i.e., till March 2004, the overall utilization of targeted funds was only 43%. However, under the components Improved PA Management, Environment Education and Awareness and Impact Monitoring, the progress has been significant with the fund utilization above 78%, 80% and 79% of the financial target respectively. The Village Ecodevelopment component had the maximum outlay. However, fund utilization was low at about 37% of the financial target.

The following table provides the details of budgetary allocations in the PA for the year 2003-2004, which includes Rs. 100.00 lakhs as Staff Cost to be borne by the State Government and Rs. 86.66 lakhs as villagers' contribution

Table 5- Details of the budgetary allocations for the year 2003-2004

Table/ Activity	Total Cost of APO as restricted by World Bank cost tables (Component wise)			Central Government Share			Amount Including the revalidated amount
	Investment Cost	Recurrent Cost	Total	Investment Cost	Recurrent Cost	Total	
Improved PA Management	51	128.61	179.61	51	28.61	79.61	63.68
Village Eco Dev. Program	557.56	2.06	559.62	470.9	2.06	472.96	378.35
Environmental Education & Awareness Campaign	3.9	1.11	5.01	3.9	1.11	5.01	4
Impact Monitoring & Research	14.09	3.3	17.39	14.09	3.3	17.39	13.9
Information Technology Equipment.	0.23	Nil	0.23	0.23	-	0.23	0.23
Total	626.78	135.08	761.86	540.12	35.08	575.2	460.16

Source: Project Tiger Office

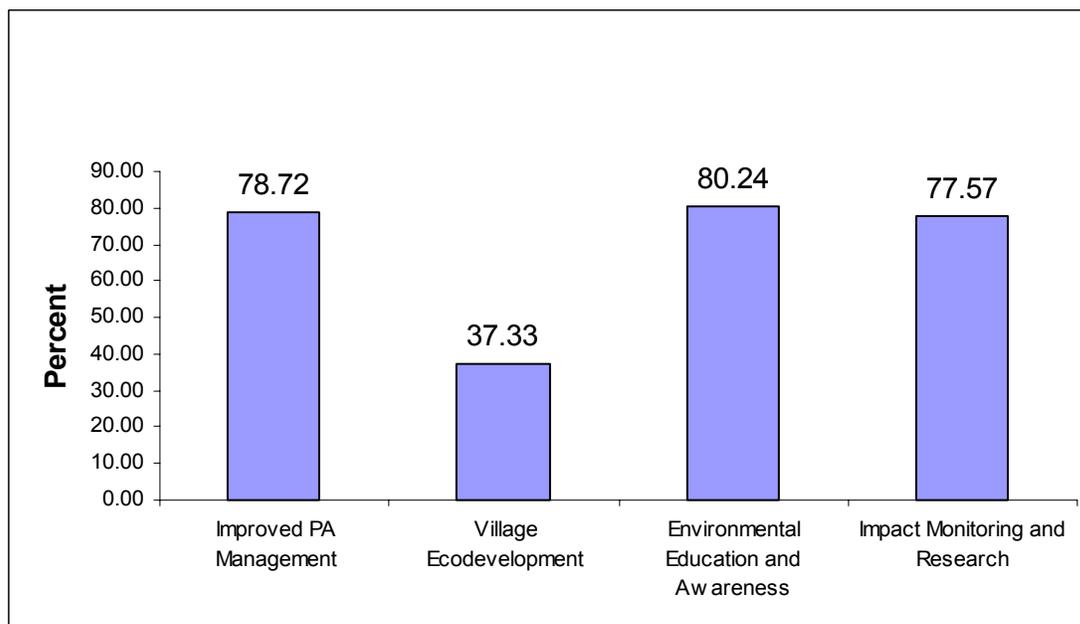
The following table provides component-wise details of APO outlay and expenditure incurred in the PA during the current financial year 2003 – 2004.

Table 6- Component-wise details of expenditure incurred for the year 2003-2004

Component	Financial Target (Rs lakh)	Expenditure up to March 2004 (Rs lakh)	Expenditure as % of Target
Improved PA Management	87.40	68.80	78.72
Village Ecodevelopment	669.84	250.07	37.33
Environmental Education and Awareness	5.01	4.02	80.24
Impact Monitoring and Research	17.39	13.49	77.57
Total	779.64	336.38	43.15

According to FD, they had received only one release of Rs.460.16 lakhs till March 2004, as against the total APO outlay of Rs.779.64. So far the PA has utilized Rs.336.38 lakhs as against the release of Rs.460.16 lakhs i.e., the overall funds utilization against release was 73.10%, which is quite impressive. Figure 16 depicts the expenditure under the four components at BTR.

Figure 16 – Component-wise utilization of funds as a percentage of target upto March 2004



Improved PA Management

Overview of project gains

Progress up to June 2003

- 100 ha of glade improvement by planting native forage grasses and bamboos and over 100 ha of canopy opening.
- 194 km boundary line demarcation & 240 km road/track path improvement.
- 52 staff quarters constructed.
- 54 electricity/solar power installations in staff locations.
- 20 wireless towers constructed & 30 handsets and 17 mobile wireless sets purchased.
- 190 FR/Fr./FG trained & 79 staff sent for study tour.
- No transit pass for legally extracted firewood from PA; sold only locally.

Progress during 2003 – 2004

- One wireless tower constructed.
- 5 guard Quarters / Foresters Quarters constructed.
- 21 ha. of canopy opening work carried out.
- Equipment such as field kits, camp and fire protection equipment worth Rs.1.30 lakhs purchased.

Site-specific key strengths and shortcomings

Strengths

- Cooperation and contribution by project beneficiaries in PA management by way of patrolling has been able to reduce collection of firewood from PA forests and has also checked the grazing intensity marginally.
- Effective interventions for improving habitat quality by undertaking glade improvement and canopy opening works have been useful. Reemergence of native species is seen in areas where canopy opening was undertaken.
- Many beneficiaries are now providing useful information for controlling illicit timber trade. As a result, illegal felling is now confined to only a few pockets of BTR.
- Despite not much headway made in reducing the pressure of tea-estates on the PA, interaction of PA authorities with tea estate management is continuing.
- Introduction of an insurance scheme for members of patrolling parties have encouraged them to undertake regular patrolling and has instilled a new confidence in them.
- Disallowing of transit pass for legally extracted fuel wood from forests. This has increased the availability of firewood in local markets and has also reduced its price, thereby making it available for consumers.

Shortcomings

- Adequate emphasis was not given to distribution of fuel saving devices such as LPG, biogas, etc.
- Grazing reduction measures such as artificial insemination, fodder production on private land etc., are inadequate and need to be intensified.
- River meandering is on the rise and caving in of riverbanks is often seen. Some critical habitats are flooded and damaged. Deposition of sand slowly renders them barren. About 16 rivers are facing the problem of bank erosion and approximately 45 km of critical stretches require attention.
- Lack of proper orientation and training of field staff in wildlife and related issues.
- Most staff is old and young staff is inadequate. The age factor impacts the vigor of patrolling and protection measures.
- Continued pressure on PA resources through Tea estates.
- Estimates of people's dependence on park resources have not been quantified.

Village Ecodevelopment

Site-specific key strengths and shortcomings

Strengths

- More than 9,750 households have been covered under IEP through 58 microplans. These households are expected to contribute to PA management and conservation of biodiversity.
- A focused approach during the extended period of IEP on landless and poor beneficiaries will reduce their adverse impact on the PA forests.
- Enhanced awareness levels of beneficiaries helped them to derive adequate benefits from village ecodevelopment component and maintain transparency.

- Insurance of members of patrolling party. Seeing the benefits arising from this action, beneficiaries have extended the insurance scheme to other areas, such as, cattle, equipments etc.
- Increased level of community participation by undertaking large number of group activities for income generation.
- Enhanced participation of women beneficiaries in activities relating to PA patrolling, decision making bodies and SHGs.

Shortcomings

- Inability of the villagers in checking extraction of firewood by large number of tea estate labourers.
- Continued dependence of villagers on firewood, as there has been low emphasis on providing alternative fuel saving devices. In the absence of proper guidance for use of biogas and smokeless chullas, villagers dependence on PA continued.
- Exclusion of tea estates from the purview of IEP.

Social Impact

- Reduction in number of cattle visiting the PA by 30%.
- Reduction in firewood extraction by approximately 50%.
- Community-based works are preferred over personal benefits.
- 79% beneficiaries preferred these works; only 49% (mostly landless) felt that income generating activities are better.
- Activities like pond development is preferred by the farming households
- Smokeless chullah is a preferred device.
- 73% beneficiaries are using it; some use sparingly; wood still used.
- Relationship with Forest Department improved substantially.
- Beneficiary awareness and participation regarding PA protection has increased.
- Regular patrolling of PA areas.
- Women empowerment through SHG formation can be seen.

The social impact of Village Ecodevelopment component was critically assessed and examined through a snap beneficiary survey of all the seven PAs, including the Buxa Tiger Reserve. As mentioned above, the beneficiary survey was conducted to understand the dynamics of the village ecodevelopment programmes in terms of its interface with PA conservation. The salient findings were:

- Income generating activities, such as, piggery, goatary, grocery shops, provision of rickshaws and agriculture equipments, have been preferred activity followed by community based activities that benefited the farming community as well as poor households.
- Community-oriented works, such as pond development, are preferred activity of the farming community as well as for poor and landless, as it provided them wage employment.
- The landholders and poor both have derived benefits from microplan implementation.
- With respect to fuel saving devices, smokeless chullah is most popular. Beneficiaries are also using it, though some use it sparingly due to some technical inconvenience.

- There is a wide variation in people's experience with the smokeless chullah. While some beneficiaries found it useful, the others were not satisfied with its performance and complained about its functioning. Majority of them have returned to the traditional device.
- Ecodevelopment interventions have been successful in reducing the pressure on PA with respect to firewood extraction and grazing. Distribution and the subsequent use of fuel device will corroborate this observation.
- The project beneficiaries have started meeting their reciprocal commitments.
- Almost all beneficiaries feel that relationship with the Forest Department has improved and a bond of confidence has been developed.
- In Phases II and III, adequate emphasis was given on formation of new SHGs in other FPCs / EDCs, but the pace of development and their activities are quite slow.
- Large number of respondents view that women have been empowered by creating SHGs and have started activities for generating economic benefits.
- A large number of beneficiaries are of the view that women empowerment has increased due to IEP, particularly as a result of formation of SHGs and women's representation in EDC Executive Committees.

Analytical Evaluation and Assessment

The pattern of project investment under the Village Ecodevelopment component was determined on the basis of analysis of investments in a sample of 10 villages visited during Phase III of IEP. Based on this, the average per family microplan expenditure in the EDC/FPC villages at BTR is Rs 10,893 on the various activities implemented in the villages.

Environmental Education and Awareness

Site-specific key strengths and shortcomings

Strengths

- Lectures, film shows and workshops organized for school children and other target groups, including EDC members, at the Nature Interpretation Center.
- Local NGOs awarded contracts for undertaking awareness programs.
- Enhanced awareness of project beneficiaries, including women regarding protection of BTR and advantages of conserving biodiversity.

Shortcomings

- Lack of focused approach in targeting Tea Estate management and workers regarding conservation issues.
- Activities negatively impacted due to low level of allocations in the last two successive financial year of the project implementation.
- Unskilled local NGO bodies could not impart awareness effectively in the initial period of IEP.
- Inadequate communication facilities (transport, telephone and wireless sets) resulted in slow progress in some inaccessible and isolated EDCs/FPCs. The field staff faced operational problems.

Analysis of activities initiated by PA authorities

During the project period, awareness programmes, workshops and training programmes were conducted in BTR to build capacity and improve skills of PA staff for implementation of the IEP. A total of 20 training programmes were conducted for capacity building of PA staff (senior or junior) and EDC/FPC members in the year 2002-03. These training programmes built the capacity of the target groups by upgrading their skills, which would help in improving PA management.

In the year 2003 – 2004, the PA authorities conducted 10 technical workshops for capacity building and skill development of PA staff to increase management effectiveness. Five study tours for guards and foresters were also conducted during this period.

The PA authorities have also conducted workshops in collaboration with Government Departments to learn about the activities of each other so that there is better coordination among them in future. This was a very useful experiment in increasing awareness among project beneficiaries not only for conservation of BTR but also for financially sustaining their EDC/FPC as institutions after the project is over.

In the current financial year, PA authorities incurred an expenditure of Rs.1.19 lakhs for upgradation of NIC at Rayabhatkhawa. Similarly Rs.2.18 lakhs were spent for getting NGO support for programme implementation. Some expenditure was also incurred on production of publicity material.

During Phases I and II, the PA authorities made some investments on construction and for purchasing audio-visual equipment as well as for materials and publications for use in awareness building. However, the awareness programme execution suffered initially due to the fact that the local NGOs were not skilled to undertake such programmes. Since the local NGOs are not skilled, it would be crucial to assess their potential for undertaking Environmental Education and Awareness programs. The investments made for this component are critical for conservation of BTR and thus better performing NGOs should be contracted during post project period to continue environment education and awareness programmes.

Based on our discussion with the beneficiaries and the forest field staff we could sense that the awareness level of the field staff and the EDC/FPC members regarding the importance of conserving BTR resources has grown substantially over a period of time. Some of the SHG members told us about the importance of protecting forests and cited some of the ecological benefits of forests, such as supply of oxygen, facilitating rainfall etc.

Impact Monitoring and Research

Site-specific strengths and shortcomings

Strengths

- During Phase I of IEP, a number of important research studies were awarded to improve baseline data for BTR and to derive important scientific inputs for facilitating PA management.

- Most of the awarded research projects and consultancies have been completed.
- Two research studies were completed in Phase III. (i) Elephants in BTR (ii) Avi-fauna of BTR as an indicator of habitat quality
- Preparation of forest guidelines for management plan preparation study completed in time for use in the preparation of the new PA management plan.
- One main and one sub-field station were developed.
- Impact monitoring guidelines and formats developed under IEP are now being used for increasing participatory monitoring.

Shortcomings

- Findings and recommendations of recently completed studies are yet to be incorporated in the revised Management Plan.
- Some important studies could not be started in time and are continuing after the preparation of the management plan. As a result, their findings could not be used in management plan.
- Investment in the first two years of project implementation was negligible.
- Reduced intensity of patrolling in some of the EDC/FPC indicates lack of monitoring by them of certain PA areas.

Analysis of activities initiated by PA authorities

Most of the research studies launched in BTR are completed. Recently, a study of elephants in BTR was completed and is waiting review by PA authorities for consideration of its findings and recommendations. Another recently completed study relates to Avi-fauna of BTR as an indicator of habitat quality. PA authorities should review the findings of these research studies and important findings and recommendations should be incorporated in the revised Management Plan. It is also suggested that the important output of these studies be shared with the PA staff, particularly, the frontline staff and other stakeholders.

During Phase I of IEP, a total of 17 research projects and consultancies were awarded under IEP to various agencies and individuals. While discussing the status of research projects, the FD informed that findings from the consultancy on Preparation of Forest Guidelines for Management Plan of BTR were used in drafting the management plan. Other studies related to ecosystem/habitat management, ecological aspects, impact monitoring etc. have also been completed and final reports have been submitted, which have been accepted by the PA authorities. For increasing the effectiveness of PA management, the PA authorities should implement the findings from these critical studies.

Since a number of useful community-oriented works are undergoing at BTR, it would be critical to monitor their performance after the project period. For this, the PA authorities should utilize the participatory monitoring guidelines and formats developed under one of the research consultancies awarded through IEP funds. This will ensure that the assets created are subjected to proper and intended use in the post project period.

Those EDCs/FPCs who were undertaking regular patrolling earlier, have now reduced the frequency and intensity of patrolling. It should be closely monitored and encouraged

to restart Patrolling beyond the project period would be more useful and reflective of the commitment made by the beneficiaries.

During the current financial year (2003 – 2004) PA authorities have allocated Rs.17.39 lakhs under this component. Out of this Rs.4.88 lakhs had been spent on construction of main field station and sub field station in the PA and for purchases of furniture. Consultancy fee of Rs.5.34 lakhs had been paid to contractual agencies for recently completed two research consultancies in the PA.

Institutional and Financial Aspects of Project Implementation

Strengths

- The process of goal setting and approval is quite flexible and identified targets could be modified during this process. The goal setting process is also consultative in nature, which is apparent during the preparation of the microplans. A structured and flexible goal setting process, which mainly operates through the process of APO preparation and approval. In the beginning of the year, an APO is prepared which is submitted for approval to the office of the CWLW.
- In BTR, the flow of information and feedback mechanism follows the hierarchical structure of the Forest Department. Besides this structure, a number of forest staff unions and associations keep providing their views and feedback on many administrative and management decisions.
- Existence of a PA level Steering Committee under the Chairmanship of the FD, which has MLA and ADM as members for coordinating with other government departments and agencies.

Inadequacies

- **Skill-responsibility mismatch.** It was observed that occasionally the trained staff is entrusted with responsibilities, which have no direct relevance to the training that they had received.
- **Time lag in updating of bank passbooks.** Updation of the passbooks is often delayed and thus continues to reflect old VDF balance.
- **Inadequate conflict resolution mechanism.** With the various unions and associations playing a very active role, there are frequent protests and representations by these, which hamper the PA management in resolving issues of discontent.
- **Limited contractual staff.** The PA authorities have hired very limited contractual staff, e.g. the PA sociologist and an ecologist. Both positions are now vacant.

Innovative Practices

The unique approach and concept of IEP and its implementation resulted in introduction of innovative practices during Phase I, which were continued during the extended phase

in view of their demonstrated positive impact on project deliverables including beneficiary participation. Some new innovative practices were added to the already existing ones. Some of the noteworthy innovations at Buxa, which we have shared with beneficiaries through Transfer of Knowledge Workshops, are:

- **Group based activities.** The PA authorities have successfully generated increased community participation through group-based activities. These activities include poultry, vegetable cultivation and piggery etc. The EDC employees the landless for managing the affairs of these group activities ensuring their year-round wages. Thus, the economic interest of the landless and poor are protected
- **Grazing control by EDC.** Villagers, in some of the EDC/FPC (for example, Kumargram) have constructed an enclosure for cattle, which is captured while grazing in PA forests. The owner of the cattle then has to pay a fine in order to obtain the release of the cattle. Part of the payment is retained by the EDC/FPC, while some proceeds go to the Forest Department.
- **Joint patrolling.** Joint patrolling of women with men ensures that when the offender is woman there are no social implications of a man catching a woman.
- **Introduction of Insurance.** The PA authorities have introduced a scheme for insuring the members of patrolling party who are under constant threats from timber thieves, firewood extractors and wild animals. This has instilled confidence in EDC/FPC members and they are encouraged to undertake regular patrolling.
- **Introduction of fuel saving devices.** The PA authorities have started emphasizing distribution of smokeless chulha for reducing the dependence of project beneficiaries with respect to firewood extraction from forests. The PA authorities have planned to provide it to all the beneficiary families in one of the range of BTR.
- **Disallowing of transit pass for fuel wood.** The PA authorities have discontinued the practice of issuing transit pass for legally extracted firewood from the PA forests. As a result there is an abundance of firewood in local markets at cheaper rates and the beneficiaries prefer to buy it rather than risk extracting it illegally.

Lessons Learnt

- Adequate care needs to be taken in the initial PRA and microplanning process, as this has considerable 'down stream' effects. Project investments and implementation of activities can be substantially impacted negatively if the initial exercise is not conducted properly.
- Initial listing of families for inclusion in microplans should be done carefully and adequate time should be given to this task. Left out families in the same village divides the village community and is not conducive to post-project sustainability of the EDCs.
- Staff capacity building issues should be tackled during the initial project period. This would enable them to implement the project in its right spirit.
- Opportunities exist for generating income at the local level (village level) by involving

the communities through promotion of group-based activities.

- Efforts should be made to cover large numbers of poor and landless beneficiaries, as they are the most dependent on PA resources. Constraints that block their participation should be addressed in the initial project period.

Recommendations

Environment Management Strengthening

1. The PA authorities should undertake a study to assess the extent of reduction of beneficiary dependence on PA. Such a study should be complimented by undertaking another study for assessing the changes (increase) in PA productivity (biomass) to correlate it with reduction in dependence by way of reduced grazing and firewood extraction.
2. Impact assessment and monitoring of habitat improvement works such as canopy opening, soil conservation works, degraded area plantation, waterholes, saltlicks etc should be carried out to assess the qualitative gains such as improvement in habitat status, wildlife movements and distribution and enhancement of biodiversity.
3. Communication network, vehicles and other equipment in the PA needs to be strengthened to improve the mobility and communication of PA staff during PA patrolling.
4. Adequate emphasis should be given to artificial insemination programmes in the villages surrounding the PA by setting up animal husbandry unit. This will have a long-term impact in addressing the issue of grazing in the PA.
5. Adequate emphasis should be given for distribution of fuel saving devices among local communities in order to reduce their fuelwood dependence on the PA.
6. The beneficiaries should be encouraged to regularly use the smokeless chulhas provided to them. Only regular use will result in meaningful utilization of the asset, as also will have some positive impact on the PA in terms of reducing firewood extraction. Constant use of alternative fuel saving device may also generate interest in other beneficiaries who have not opted for such assets so far.
7. Old canopy opening areas should be maintained regularly to increase fodder biomass and enrich biodiversity in the PA. Fund allocations for this should be made in State budget for the post project period.

Monitoring Procedures

8. The PA authorities should organize training/orientation of beneficiaries on O&M of the smokeless chullah. In this regard, some NGOs should be engaged to guide and monitor the use of smokeless chullahs to reduce pressure on fuel wood collection from PA.
9. Village FPCs / EDCs should be encouraged to conduct monthly meetings. Necessity of conducting village meetings is essentially required during post project period to sustain these institutions created under IEP as well as to monitor the performance of the EDC/FPC.

Other Recommendations

10. Adequate emphasis should be given to consolidation of gains and establishment of linkages with other agencies for ensuring post project sustainability.

11. Utilization of VDF guidelines in the post project period should be given due attention. There seems to be some confusion in some of the villages. EDC executives should discuss the issue and strictly follow the guidelines for sustenance of EDC/FPC activities in the post project period.
12. Continuous support to SHGs, particularly women SHGs, should be provided even in the post project period. Proper motivation facilities regarding income-generating activities should be organized for better performance of SHGs. Also, training on income generating activities should be organized for better performance of SHGs. Further, due attention should be given for maintenance of quality of the products and sale of the products through the outlets of KVIC and State Emporiums.
13. Ecotourism initiated in the FPCs (Panihalguri and Cheko) should be supported. Development departments like Social Welfare, PWD, Irrigation, Fisheries, etc. should be persuaded to provide adequate support for income generation activities and beautification programmes. Additional source of funding from NABARD may be explored. Trekking, camping and site seeing programmes proposed for Jayanti Range may be expedited. Pamphlets should be supplied to the State Tourism outlets for distribution among the visitors visiting Siliguri and Jalpaiguri. At Rajabhatkhawa (NIC), pamphlets should be distributed among the visitors and wide publicity should be given through print and visual media.
14. Each of the FPC / EDCs covered under IEP should be provided with display boards with details of the microplans (both completed or to be completed). The billboards display with the details of the microplan at the beat office level should also be updated with the latest information on any revision in microplan activities and expenditure details.
15. PA authorities should focus on issues related to post-project sustainability and empower FPCs/EDCs for this purpose. Sustainability should be one of the main planks for this year.

GIR NATIONAL PARK

Project Progress Status

Funds for the PA are provided through budgetary allocation. Both state sponsored and centrally sponsored schemes cover the expenditure for the PA. There are both recurring and non recurring expenses.

GNP has utilized 99.38% of funds released (including revalidated amounts) during the project period (See Figure 17). A year-wise account of utilization of released and revalidated funds is given in Table 7 and Figure 18.

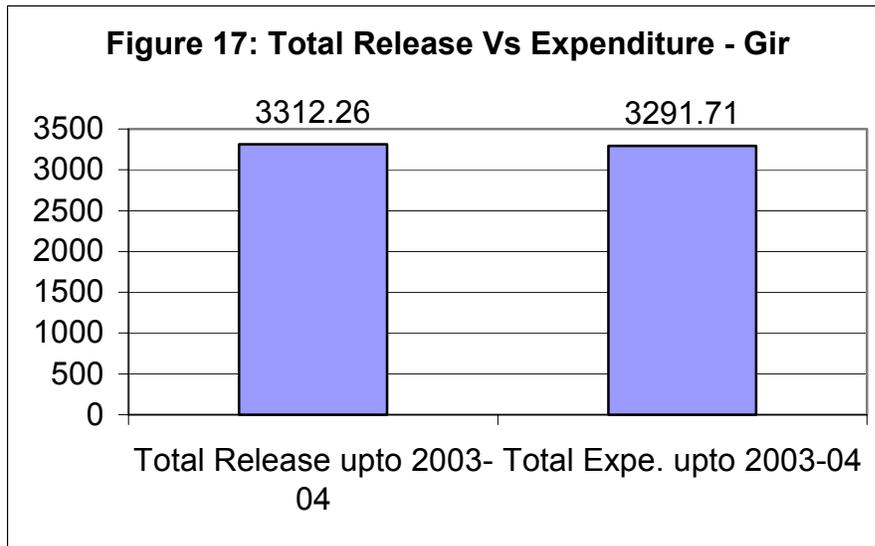


Table 7 below gives the year-wise funds released, utilized and revalidated for the entire project period along with utilization of funds.

Table 7– Year-wise funds utilization (Rs Lakhs)

<u>Year</u>	<u>Release</u>	<u>Expenditure</u>	<u>Revalidated Amount</u>	<u>% Utilization</u>
1995/96	30	7.98	22.02 (1996/97)	26.6
1996/97	0	21.9	0.12 (1997/98)	99.46
1997/98	360	278.22	81.9 (1998/99)	77.26
1998/99	161	242.9	0 (1999/00)	100
1999/00	689.2	555.18	131.62 (2000/01)	80.55
2000/01	658.73	591.99	198.36 (2001/02)	74.90
2001/02	300	407.14	91.22 (2002/03)	81.70

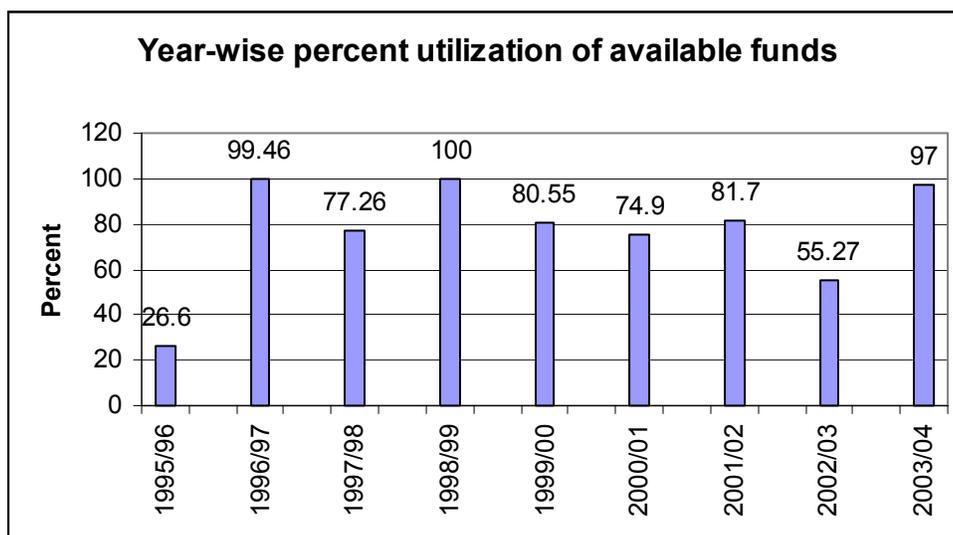
Year	Release	Expenditure	Revalidated Amount	% Utilization
2002/03	840.58	515.00	416.8 (2003/04)	55.27
2003/04	272.75	669		97
Total	3312.26	3291.71	942.04	99.38

Source: Project Tiger Office

The funds utilization pattern, marked by wide fluctuations with a low of 26.6% and a high of 99.46% of released funds, demonstrates that the Gir PA has a high absorptive capacity for project funds. As Gir had a modest infrastructure, it was able to utilize more than 26% of the released funds in year one of the project. The low investments in the first year of project implementation is generally expected, as various stakeholders of the project are not always clear about the ways and means of implementing the project. The second year had 99.96% utilization on account of project related capital expenditure on infrastructure development. The drop in utilization in the third, fourth and fifth year was due to systemic delays in release of funds and decline of reciprocal commitments on account of continuous drought in Gujarat, which precluded the poor and landless families to contribute their mandatory 25% share.

The State Government did not release the entire amount, as proposed in the APO. Out of Rs 800 Lakh proposed in the APO for 2001-2002, the State Government released only Rs 410.29 Lakh, which amounts to 51.28%. This limited the PA capacity for undertaking proposed works and adversely impacted project performance. Based on this, it is clear that against the APO amounts, the financial performance of Gir was only 50.89%, which is rather low. However, when compared with the amounts received by the PA, the financial performance is impressive at 99.23% for the year 2001-2002. Fund utilization in 2002-2003 was constrained due to restrictions imposed by the State Treasury, which did not entertain cheques of value more than Rs 25,000. For the final year of IEP (2003-2004), this restriction was removed and as a result of which the utilization again jumped to 97% of the available funds. In the final year, expenditure was also incurred to consolidate the gains made so far in the project. Figure 18 below gives the utilization of funds as a percentage of released funds including revalidated amounts.

Figure 18



The phase-wise funds utilization as a percentage of APO targets are given below in Table 8

Table 8: Component-wise funds utilization as a percentage of APO targets

Components	Phase I	Phase II	Phase III
Improved PA Management	92.17	76.37	59.02
Village Ecodevelopment	58.10	52.85	69.45
Environmental Education and Awareness	73.20	25.68	64.61
Impact Monitoring and Research	72.33	89.56	14.30
Total	68.59	55.27	68.01

GNP displayed a good absorption capacity for the funds made available to them. However, against the APO targets, the absorption capacity seems a bit lower. This is because the proposed outlays for the various components were not fully released to the PA authorities. In Phase I, under the component of Improved PA Management, the PA authorities incurred sizeable expenditure in developing infrastructure. Vehicles were purchased and communications network was strengthened by erecting wireless towers, procuring wireless sets etc. Investments were also made on habitat improvement works. Phase II also saw good investments level. However, since a lot of infrastructure works were already completed in the earlier phases, expenditure was rather low in phase III under this component. For the component of Village Ecodevelopment, the absorption capacity of the PA remained average. Expenditure in this component is linked with the capacity of the beneficiaries to contribute their 25% share as also on cooperation. Phase III saw maximum investments under this component. Under the component of Environmental Education and Awareness, funds utilization was highest in phase I

followed by phase III and least expenditure was booked in phase II. Phase II suffered from the restrictions imposed by the State Treasury, as a result of which investment levels remained low. Under the component of Impact Monitoring and Research, investments were substantially low in phase III. The PA authorities expected that by the end of the project (June 2004), the investment under this component will also increase.

Table 9 below gives the details of the budgetary allocations for the year 2003-2004. The costs in the table include Rs. 70.00 lakhs as Staff Cost borne by the State Government and Rs. 184.15 lakhs as villagers' contribution.

Table 9: Details of the budgetary allocations for the year 2003-2004

Component	Total Cost of APO as restricted by World Bank cost tables (Component wise)			Central Government Share			Amount including the revalidated amount
	Investment Cost	Recurrent Cost	Total	Investment Cost	Recurrent Cost	Total	
Improved PA Management	35.74	82	117.74	35.74	12.04	47.78	38.23
Village Eco Dev. Program	987.62	2.58	990.2	803.47	0.06	803.53	642.82
Envtl. Education & Awareness Campaign	3.57	1.34	4.91	3.57	0.11	3.68	2.95
Impact Monitoring & Research	5.93	3.41	9.34	5.93	1.01	6.94	5.55
Total	1032.86	89.33	1116.1	848.71	13.22	861.93	689.55

Source: Project Tiger Office

The PA authorities at Gir have exhibited a good absorption capacity for funds. Over 97% of approved outlay for the APO of 2003-2004 has been utilized, indicating that the project implementation was nearly complete. Thus, with respect to funds utilization, the project performance is very good. Table 10 below gives the component-wise utilization of allocated funds.

Table 10: Component-wise details of expenditure incurred for the year 2003-2004 at GNP

Component	Financial Target (Rs lakh)	Expenditure up to March 2003 (Rs lakh)	Expenditure as a % of Target
Improved PA Management	52.79	42.25	80.04
Village Ecodevelopment	626.14	621.40	99.24
Environmental Education and Awareness	3.68	3.67	99.73
Impact Monitoring and Research	6.94	1.66	24.04
Total	689.55	669.00	97.02

A look at the component-wise expenditure pattern indicates that the components of Village Ecodevelopment and Environmental Education and Awareness Campaigns have performed exceedingly well with over 99% utilization of targeted funds. Although, the outlays of both these components cannot be compared, it only indicates that the PA authorities were in good control of project activities, and were able to implement most activities, as planned.

The improved PA Management component also performed quite well with just over 80% funds utilization of the approved APO amounts. The only component, where funds utilization is rather low is Impact Monitoring and Research. Under this component, the PA authorities could spend only about 24% of the targeted funds. This was due to the fact that the PA authorities could not purchase the laptop computer and associated accessories proposed. There was also no expenditure incurred under the short-term studies, for which an outlay of Rs 1.90 lakh was proposed in the APO.

Improved PA Management

Overview of project gains

Progress up to June 2003

- Revised Management Plan approved.
- Management Plan revised and updated.
- Lantana & Prosopis removal in 5018 hectare.
- 100 km of fire lines improved.
- Pollarding and pruning plots of 100 hectare established.
- 15 waterholes constructed.
- 37 staff quarters constructed.
- 32 causeways constructed.
- 64 hand pump/saucer installed.
- Construction of 10 new & repair of 20 old check dams.
- 10 fire watch & 10 wireless towers constructed.
- 6 motorcycles and 2 four-wheel vehicles purchased.
- 7.1 km long protection wall near Devaliya completed.
- Desilting of old check dams and cause ways cum check dams (10000 cmt).

- Plugging of sludge gates at Jhamburi checkdam.

Progress during 2003 – 2004

- Purchase of Field Equipment.
- Survey and Demarcation of PA Boundary by Erecting Pillars.
1.5 k.m. of Dry Rubber Wall constructed (East).
- 27.37 k.m. of Dry Rubber Wall constructed (West).
- 14.7 k.m Old Rubber Wall strengthened (East).
- 15 k.m. Old Rubber Wall strengthened (West).
- 10 Wells and 31 troughs repaired.
- 36 Wells covered with iron mesh.
- 5400 cmt of de-silting of old check dams.
- Eradication of Lantana and other weeds in 2100 ha.
- Removal of encroachments in 16 ha.

Site-specific strengths and shortcomings

Strengths

- During all the three phases of IEP, the PA authorities have demonstrated good capacity for utilizing funds under this component..
- PA management capacity has been upgraded through:
 - Construction of over 24 guard quarters & patrolling camps
 - Construction of 10 fire watch & 10 wireless towers constructed
 - Undertaking road improvement over 100 km
 - Acquisition of 6 motorcycles & 2 four-wheel vehicles
- Focus on conservation as per management plan guidelines:
 - *Lantana* & *Prosopis* removal being undertaken regularly in many places (in Phase I of IEP, *Lantana* removal was done in 2000 ha)
 - 15 waterholes constructed and water being provided regularly through tankers
 - Repair of old check dams and desilting undertaken
- Habitat improvement works started yielding results – improved water regime
 - Nearby village wells recharged on account of check dams in PA.
- Separate Division looking after monitoring, research and orientation.

Shortcomings

- Inadequate field level staff, as 73 posts have been abolished out of 553 sanctioned posts; 62 vacancies exist.
- Lack of adequate mechanisms for dealing with high pilgrim traffic of 1,50,000 visiting as many as 26 temples inside the PA.
- Improved PA Management works suffered due to fund flow constraints during early years of project implementation and for a while during phase II.

Village Ecodevelopment

Site-specific strengths and shortcomings

Strengths

- PA authorities have been able to generate interest among beneficiaries to take up increasing number of fuel saving devices, mostly LPG, which is likely to reduce pressure on the PA. The PA covers 12,619 beneficiary families in 109 microplans.
- Over 9,000 families provided with LPG to reduce their dependence on PA forests for firewood.
- Large number of poor and landless families in EDC villages supported for self employment.
- Strengthening of EDCs undertaken through training imparted by SIRD.
- Empowerment of women beneficiaries through establishment of a large number of SHGs.
- Improvement in the relationship between PA authorities and villagers from an earlier environment of hostility and mistrust to cooperation and trust.

Shortcomings

- Inadequate measures for controlling crop depredation by wild animals.
- Most of the revised plans of Gir East Division continue to reflect total microplan budget on the basis of Rs 10,000 per family, instead of Rs 12,500.
- Inability of beneficiaries to adequately meet their reciprocal commitments, particularly with respect to control of grazing in PA areas.
- Encroachment of *gauchar* lands, which act as buffer between the PA and peripheral villages is on the rise and this problem is being considered a critical threat to the PA.
- Lack of smooth fund flow hampered implementation of some of the microplan activities.

Social Impact

The implementation of microplan activities in GNP has impacted the lifestyles of the beneficiaries and has impacted the society in a number of ways. Some of the social impacts, as observed by us during our visits to EDC villages and through our interaction with the beneficiaries are listed below:

- About 35% reduction in grazing pressures on PA.
- About 50% reduction in firewood extraction.
- Community based activities are preferred over income generating ones by at least 70% beneficiaries.
- Wage opportunities for large population of landless and poor.
- Check dams preferred by farming communities, as it directly augmented agricultural productivity.
- LPG is being used by a large number of beneficiaries (80%).
- Affluent families use LPG regularly.
- All beneficiaries feel that relationship with the Forest Department has improved considerably through IEP.

- SHG formation is gradually increasing and women are realizing the benefits of empowerment derived through financial assistance from SHGs – use of women coordinator is a useful intervention.

The social impact of Village Ecodevelopment component has been critically assessed and examined through a snap beneficiary survey of all the seven PAs, including the Gir National Park. As mentioned above, the beneficiary survey was conducted to understand the dynamics of the village ecodevelopment programmes in terms of its interface with PA conservation. The salient findings are:

- Community-based activities are preferred over individual based activities/interventions. This is particularly true of farming communities.
- Income generation activities and wage employment opportunities provided by community-based activities are preferred by landless and poor families over other benefit streams. This is clearly demonstrated by low acceptance of income generating and wage employment opportunities in villages with low population of landless and poor.
- The landholders have derived more benefits from microplan implementation than the poor and the landless.
- LPG is the most preferred alternative cooking device and its popularity and use is on the rise. However, some poor beneficiaries, who find it difficult to both afford and procure the cylinders, use LPG sparingly.
- Difficulty in procurement of LPG is a greater constraint than the high cost of replacing the used LPG.
- Ecodevelopment interventions have been successful in reducing the pressure on PA with respect to firewood extraction and grazing. This is corroborated by marginal reduction in the number of people and cattle visiting PA for firewood collection, and grazing respectively.
- The project beneficiaries have started meeting their reciprocal commitments. However, PA patrolling by the beneficiary households is non-existent. Villagers help the PA authorities in preventing fires and controlling them whenever there is a fire incidence. Many beneficiaries, as also some field level PA staff is of the view that PA patrolling is not required, as there are no major cases of poaching and timber felling.
- Almost all beneficiaries are of the view that relationship with the forest department has improved significantly from the pre-project era. Earlier, there was a lot of mistrust between the two, which has now turned into a trust worthy relationship. There is no hostility between the two.
- A high number of beneficiaries are of the view that women empowerment has increased due to IEP, particularly through formation of SHGs.

Analytical Evaluation and Assessment

A number of activities have been carried out with investments made under the microplan in each of the EDC villages at Gir. Based on a sample of 10 EDC villages, the average per family microplan expenditure in the EDC villages at GNP is Rs 11,373 on the various activities implemented in the villages.

Environmental Education and Awareness

Site-specific key strengths and shortcomings

Strengths

- Good capacity to incur expenditure under this component has been developed.
- Rich history of conducting nature workshops at Gir.
- Continuous holding of nature camps for school children.
- Well-developed publicity material on Gir.
- A fully functional Nature Interpretation Center, which is interactive.
- Establishment of education centers in schools in all the eight Tallukas adjoining Gir.

Shortcomings

- Low investments during 2002-2003 on this component.
- Funds for NGO contracts for 2002-2003 received late in November 2002.
- Non availability of the services of consultants and NGOs
- Delay in release of funds from the state government at the initial stage.
- No regular system of patrolling developed by beneficiaries.
- The EDC chairman and executives yet to start maintenance of accounts and meeting registers.

Analysis of activities initiated by PA authorities

Under this component, during the first phase of IEP, the PA authorities had undertaken a number of activities. These were broadly categorized as (i) development of conceptual framework; (ii) education center; and (iii) awareness programs.

However, progress with regard to expenditure was poor as no expenditure was incurred on Development of Conceptual Framework either in Phase I or in Phase II. In the extended phase of IEP, expenditure was primarily booked only for Awareness. During the course of IEP, the PA authorities incurred expenditure under this component in procuring material and publications and for NGO contracts for program implementation. Grants for NGO contracts were not optimally utilized, as these were made available to the PA authorities only in November 2002.

One of the prominent awareness activities undertaken at Gir was the organization of nature workshops for school children. The nature workshops have been well received. At present, nature camps are being organized at four places in Gir, namely, Sasan, Sakarbaugh zoo, Bhimchas and Jamvala. Each camp is of three days-two nights duration. Each year, more than, 1200 school children participate in such camps. We observed two such nature camps, during our visits on different occasions, one each at Bhimchas and Sakarbaugh zoo and interacted with the participating children. They informed us that field-based learning techniques are very educative and useful. We found that most of the students were aware about conserving forests and protecting the environment.

Besides organizing these camps, the PA authorities have set up eight Nature Education Centers (NEC) in eight schools covering all the eight Tallukas adjoining Gir. For these NECs, PA authorities have signed a MOU with the participating schools, under which the school will provide space and 2-3 teachers to look after the activities of the NEC, and the

PA authorities will provide the furniture, literature etc. The students of these schools will be given priority for participating in the nature camps.

The PA authorities also organize daily film shows on wildlife and on Gir at the Forest Guest House at Sasan Gir (□xposur zone) and these are also well received.

Impact Monitoring and Research

Site-specific strengths and shortcomings

Strengths

- Separate division, headed by a DCF, looking after monitoring and research.
- Award of 17 research studies and consultancies to address key areas of PA management⁸.
- Completion of a few studies and timely availability of research findings for some areas of PA management for updating of the Management Plan.
- Appointment of consultant Ecologist for monitoring of habitat conditions and for researching on PA issues.

Shortcomings

- Some critical research studies were not completed before the finalization and updating of the Management Plan.
- Lack of competent research organizations to undertake research projects.
- The position of the Ecologist remained vacant for most part of phase II and for the entire period of phase III.
- No studies awarded during phase III under the proposed short-term studies.

Analysis of activities initiated by PA authorities

The PA authorities made some investments under this component for upgrading the support services throughout the three phases of IEP. They procured a four-wheel drive vehicle for better mobility, computer (with accessories) for better data/information management, and meteorological equipment for making accurate observations.

Nominal funds were spent on holding a research seminar and dissemination of its results. Earlier (during Phase I), PA authorities had contracted 17 research studies, all of which have now been completed. During 2002-2003, the expenditure exceeded the approved outlay for both long and short-term research studies. However, additional equipment could not be purchased in phase III, as the Government Agency responsible to buy the equipment (laptop) did not procure during the financial year 2003-2004.

One of the strengths of the PA was that a consultant Ecologist monitored the impact of habitat improvement works, including that of the effectiveness of gully plugging, construction of check dams for improving PA water regime, increase in biomass for herbivores in the pollarding plots etc. Since, this position was now vacant, monitoring of

⁸ The research studies were awarded during Phase I of IEP

some of the habitat monitoring works may have to be undertaken by the field staff. The PA authorities should either make fresh appointment of PA Ecologist or give training to PA staff in field monitoring techniques. Appointment of contractual staff would be useful, as it shares the existing workload and also provides expert advice on ecological matters, which have a significant bearing on PA management.

Institutional and Financial Aspects of Project Implementation

Strengths

- Establishment of a separate wildlife division, which looks after the monitoring aspects and is headed by a DCF level officer.
- A well-structured goal setting process. A consultative process is being followed that takes into account the requirements of the project beneficiaries. Goals and revisions are set in consultation with concerned EDCs.
- There is a process of taking feedback from the field level offices, who mostly report to the DCFs. The FD is continuously interacting with DCFs and often undertakes field visits to the various Divisions.
- Existence of a staff plan with clearly defined roles and responsibilities of staff at all levels. Accordingly, the workload distribution takes this into consideration and as and when officers are feeling burdened, additional staff is allocated some tasks under the IEP.
- Up gradation of critical management support services, such as communication network, availability of wireless sets, increased mobility of field staff etc.

Inadequacies

- One of the issues that negatively impacts PA management capacity is inadequate staff strength, particularly at the field level. The PA management lays maximum importance on protection for which guards are chiefly responsible. Almost 1800 sq km area is to be looked after for which only 96 guards are deployed; this is an inadequate number. Over the years, the numbers of positions, particularly the field level positions, have been reduced in the 'down-sizing' exercise by the state government. There were 649 sanctioned posts of which 73 have been abolished. Of the abolished posts, 45 are of guards, 15 are of foresters, and 2 RFOs. At present there are 553 filled up posts and 62 positions are vacant. As a result, the earlier system of *Jodi guard* (Paired-Guards) has been abolished. The system of two guards patrolling one beat was introduced because most of the beats were in remote areas and passed through difficult and hostile terrain.
- Ineffective mechanisms for coordinating with development related activities in the PA at the state level. With regard to the coordination mechanisms, there is a PA level Coordination Committee chaired by the District Collector, the meetings of which are attended by the DCFs. However, the DCFs shared that in these meetings issues related to forestry are accorded low priority. Further, there is inadequate follow-up of on the decisions taken in these meetings.
- One of the main constraints faced in hiring of contractual staff is that meritorious candidates are unavailable to fill up the positions. As a result, the position of Ecologist remained vacant for the entire phase III period.

Innovative Practices

The unique approach and concept of IEP and its implementation resulted in introduction of innovative practices during Phase I, which have continued during the extended phase in view of their demonstrated positive impact on project deliverables including beneficiary participation. Some new innovative practices have been added to the already existing ones. Some of the noteworthy innovations at Gir, which we have shared with beneficiaries through Transfer of Knowledge Workshops, are:

- **Reducing farmer's dependence on PA:** The needs of a large number of small and large farmers were addressed by providing them with inputs that improves their agriculture productivity and increases their household income. Some of the interventions in this regard were land leveling, irrigation facility and providing agricultural implements etc. These interventions by the PA authorities have indirectly reduced the dependence of peripheral farmers on the PA resources.
- **Focus on providing alternative fuel saving devices:** A large number of beneficiary families have been provided with LPG to reduce the extraction of firewood from PA forests. This approach has continued in the extended phase of IEP.
- **Sustaining community's long-term economic interests:** Assistance for planting mango orchard keeping in mind the long-term economic interest of the village community. Along with raising community orchards, plantation on individual's farmland were also undertaken.
- **Evolving the concept of *Eco Kunj*:** Under this innovation management right of wasteland and *gauchar land* is transferred to the EDC, which develops mango orchards, and also uses this land for pasture development. We observed in village Dhanej, that villagers have grown adequate fodder for meeting the needs of the cattle during the drought period.
- **Focus on community-oriented works:** After revision of the microplan allocation to Rs 12,500 per family from the earlier allocation of Rs 10,000 per family, the PA authorities have earmarked the amount of Rs 2,500 per family for community-oriented works. Such works are likely to facilitate EDC sustainability beyond the project period.
- **Establishing Nature Education Centers:** The PA authorities have evolved a way to continuously engage schools in spreading awareness for nature conservation. This is being done by establishing NECs, which will be regulated by the designated school teacher. All the eight talukas adjoining Gir has one such center.

Lessons Learnt

- Initial listing of families for inclusion in microplans should be done carefully and adequate time should be given to this task. Left out families in the same village divides the village community and is not conducive to post-project sustainability of the EDCs.
- Staff capacity building and specialized training should be completed in the first year of the project itself. Trained staff should not be transferred and/or allotted duties with no relevance to the training received.
- For implementing a specialized project like IEP, staff strength should be adequate. Additional staff should be made available, as the project implementation involves substantial workload. Project related incentives should be considered for existing

- staff, if no additional staff is provided.
- Fund flow should be smooth for effective implementation of various project activities.
- Preparation of microplans should be on a demand-driven basis and not top-down approach, as it hampers microplan implementation since the activities proposed are not the ones required by the beneficiaries.
- Community-based fruit orchards – the *ecokunj* – approach has been very useful and effective for long-term sustenance of EDCs.
- Microplans should be made available to the village community since project start and the microplans should be provided in local language.

Recommendations

Environment Management Strengthening

- 1 Environmental impact of water management and other habitat improvement works on status of habitats, movement of wildlife and enhancement of biodiversity should be assessed and documented. If required, an external scientific agency may be contracted for this work.
- 2 The State and Central Governments should take early decision with regard to the policy of relocation of Maldharis outside the Park to maintain its ecological integrity and prevent habitat degradation. Such decisions must also be supported with adequate budgetary allocations for implementing the policy.
- 3 Monitoring of waterholes, waterhole registers, checkdams and wells should be given due attention. The staff should be adequately trained for carrying out ecological monitoring of PA habitats.
- 4 The state government policy of curtailing kerosene quota for the families with LPG has been counter-productive to reduce pressure on fuel wood. The LPG beneficiaries should be allowed to draw full quota of Kerosine oil.
- 5 The issue related to inadequacy of staff needs to be addressed otherwise it will hamper the PA management and ecodevelopment activities. The State Government should assess the staffing requirement at GNP and endeavour to fill the existing vacancies, as this will have a direct and positive impact on IEP implementation and PA protection.
- 6 In each village, some biogas plants should be introduced to families having sufficient cattle population. Results achieved will be a motivating factor for other families to adopt biogas. This would further contribute in reduction of firewood extraction.

Monitoring Procedures

- 7 The details of the microplan expenditure, its balance, the status of VDF, etc. should be made available with the EDC Chairpersons and EDC Executive Committee members for ready reference. This will help in developing transparency and trust, which will be two important factors in the functioning of EDCs in the post project period. It will also encourage local level monitoring of expenditure.
- 8 The utilization of VDF needs to be carefully monitored in the post project period. The EDCs should be requested not to spend their VDF amounts on activities like construction of school boundary walls, as money for such purposes could be obtained from other concerned Government Departments.

- 9 The EDCs should be encouraged to monitor use of LPG. To increase the popularity of LPG, the PA authorities need to correspond with gas agencies for ensuring regular supply to EDC villages or to at least the nearest motorable location.
- 10 Training and exposure component of the project is still weak and needs to be strengthened. A schedule of training/workshop and exposure visits should be developed and adhered to. Training in participatory monitoring needs to be provided to both the field staff and EDC members.

Other Recommendation

- 11 The *ecokunj* concept should be replicated in the EDC villages to utilize Gauchar Bhumi (panchayat land) of the village and to produce / cultivate fodder besides planting fruit trees. Since, mango plantations are quite successful in the area, and are already being done on an individual basis as well as on community basis, these should be promoted in EDC villages that are yet to establish an *ecokunj*. Both these activities may become a permanent source of income for the EDC in the post project period.
- 12 The PA authorities should facilitate tie-ups of various SHGs with other government agencies i.e., Women Development, KVIC and NABARD to ensure SHG sustainability in the post project period.
- 13 EDCs should be oriented to leverage resources for their sustainability in the post project period. Initially, the PA authorities may facilitate this process but in the long-run the EDCs should be empowered so that they can apply for government funds on their own.
- 14 There should be consistency in EDC meetings, which should be organized in accordance with the rules and regulations of the EDCs.
- 15 The PA authorities should speed up the work related to all project components so that planned activities are completed in the remaining project period.
- 16 Short duration exposure trips for both EDC Chairmen and field staff should be arranged within the PA so that they visit at least one good EDC, doing well in PA protection, fuel saving devices and management of EDC accounts.
- 17 One page statement in local language regarding microplan budget, total expenditure, and actual VDF amount deposited in the Bank should be made available to each EDC and discussed in the GB / Executive Committee Meetings for greater transparency.
- 18 A one-page summary indicating the changes effected in microplans after revision should be annexed to the existing microplan document.
- 19 There should be mechanisms to engage reputed developmental sector NGOs (BAIF, CARE etc) for capacity building and awareness building of EDCs and women SHGs for sustainability of the EDCs and SHGs in the post project period.

NAGARHOLE NATIONAL PARK

Project Progress Status

Funds for the PA are provided through budgetary allocation. Both state sponsored and centrally sponsored schemes cover the expenditure for the PA. There are both recurring and non recurring expenses.

The total utilization of funds at NNP as a percentage of released and revalidated amount for the entire project period is at 85.70% (see Figure 19 and table 11 below).

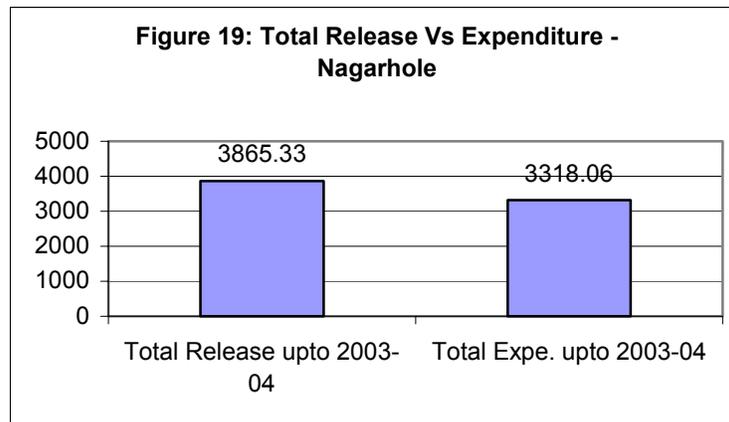
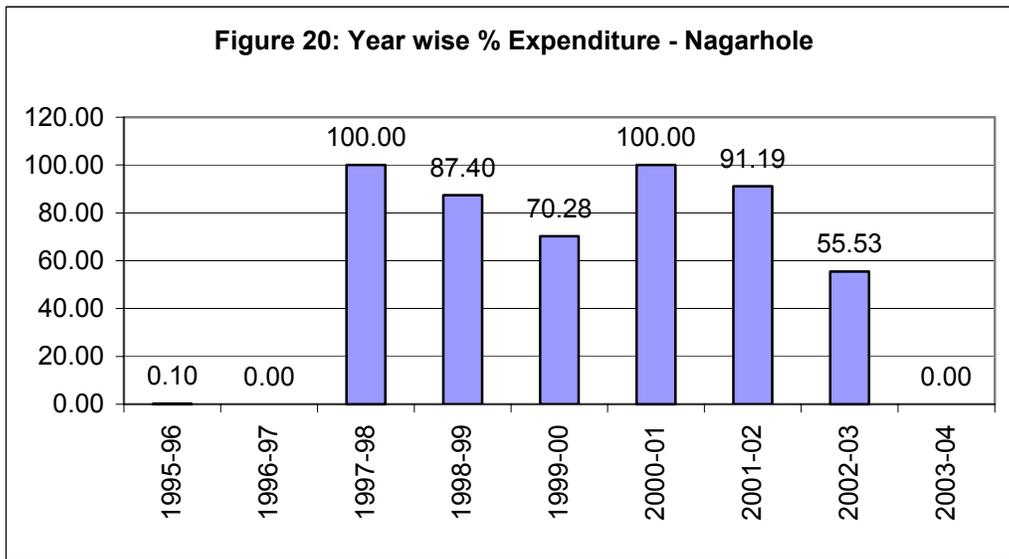
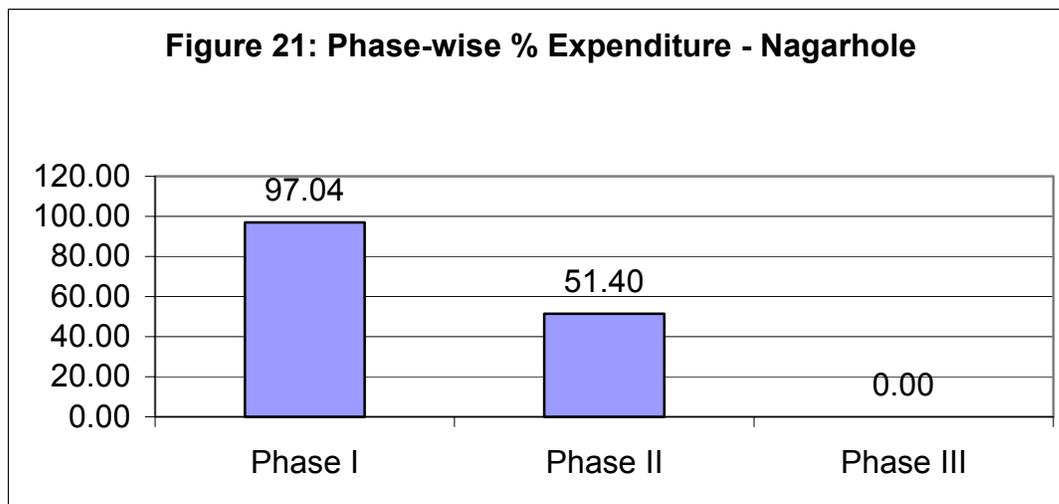


Table 11: Yearwise Funds utilization (Rs. Lakhs)

<u>Year</u>	<u>Release</u>	<u>Expenditure</u>	<u>Revalidated Amount</u>	<u>% Utilization</u>
1995/96	10	0.01	9.99 (1996/97)	0.1
1996/97	0	0	9.99 (1997/98)	0
1997/98	50	59.99	0 (1998/99)	100
1998/99	432	377.56	54.44 (1999/00)	87.40
1999/00	955.15	709.59	300 (2000/01)	70.28
2000/01	425.85	725.85	0	100
2001/02	950	867.40	82.60	91.30
2002/03	1042.33	578.76	463.57 (2003/04)	55.53
2003/04	0	0		
Total	3865.33	3318.06	920.59	85.70



Phase-wise expenditure at NNP is given below in Figure 21. Since project implementation was limited to the first two phases, there was no expenditure in Phase III. The performance in Phase I vastly outscored that of phase indicating that phase two could neither consolidate the gains of phase I nor could it sustain the high investment levels of phase I. The project implementation was mired by certain exposures and judicial inquiry by the *Lok Ayukta* was ordered due to which the World Bank and Project Tiger Office decided not to extend the IEP for 2003-2004 (phase III).



Project Performance during 2002-2003

For the year 2002-2003, the PA authorities proposed an outlay of Rs 1,349.65 lakhs. This includes both investment costs (amount spent on various project activities) and recurrent costs (salaries and O&M costs). Whereas investment costs are funded through the Central Government Funds (Project Tiger Office), recurrent costs are met by the State Government funds.

The maximum outlay was for the Village Ecodevelopment component at Rs 1,199.44 lakhs followed by Rs 77.69 lakhs under Improved PA Management. Earlier, the PA authorities had proposed a higher outlay for Improved PA Management but in the revised APO, this amount was reduced. As a consequence of this, the PA authorities have proposed some of the activities of Improved PA Management under the Village Ecodevelopment component. For example, fire protection and weed removal are reflected in the Village Ecodevelopment in the revised APO. This was one of the reasons for the huge differences in the outlays between the two components.

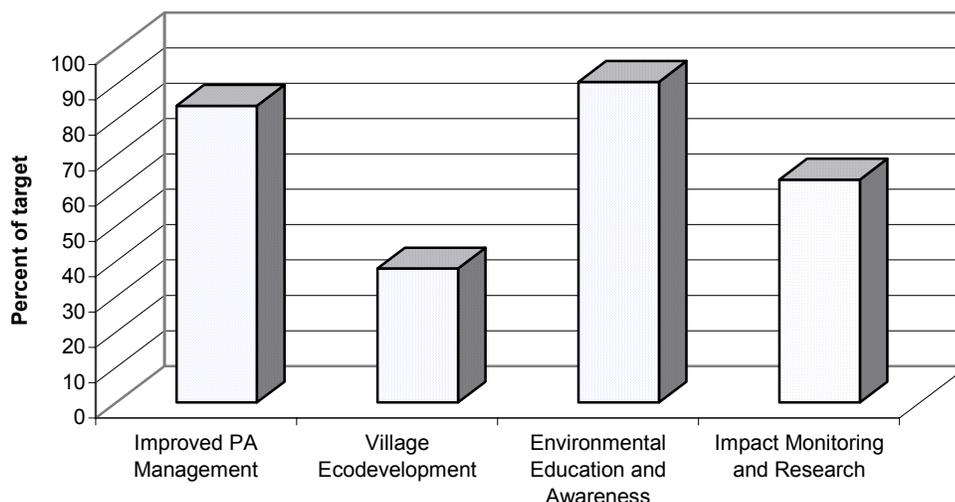
Total component-wise investment as a percentage of targeted expenditure varied from the low of 37.91% (Rs.454.17 lakhs) for the Village Ecodevelopment component to the high of 90.71% (Rs.32.72 lakhs) for the Environmental Awareness and Education component, followed by 83.95% (Rs 77.69 lakhs) for the Improved PA Management component. These variations in funds utilization as a percentage of targets are primarily a reflection of amounts released for different components and not a reflection of the performance efficiency of the respective project components. Component-wise details of expenditure incurred up to March 2003 are given in Table 12.

Table 12: Component-wise details of expenditure incurred up to March 2003

Component	Financial Target (Rs lakh)	Expenditure up to March 2003 (Rs lakh)	Expenditure as % of target
Improved PA Management	92.54	77.69	83.95
Village Ecodevelopment	1,199.44	454.17	37.91
Environmental Education and Awareness	36.07	32.72	90.71
Impact Monitoring and Research	21.6	13.62	63.06
Total	1349.65	578.2	42.88

Figure 22 depicts the expenditure under the four components at NNP.

Figure 22: Components-wise Expenditure as a percentage of target upto March 2003



Fund Flow

The APO outlay for 2002-03 for NNP was Rs.1349.65 lakhs. However, the actual amount released by the state government, in nine installments, was Rs.582.60 lakhs i.e. 43.17 % of the outlay (see table below for details). This contributed to overall low funds utilization during the financial year 2002-2003. However, it is encouraging to note that 99.24% (Rs.578.20 lakhs) of the total released funds (Rs.582.60 lakhs) were utilized by the PA.

Table 12: Release by State Government

Installments	Amount (Rs in Lakh)	Date
1 st Installment	82,00,000	May 21, 2002
2 nd Installment	60,000	June 6, 2002
3 rd Installment	98,00,000	August 8, 2002
4 th Installment	2,00,000	September 9, 2002
5 th Installment	98,00,000	September, 26,2002
6 th Installment	2,00,000	October 18, 2002
7 th Installment	1,98,00,000	October 19, 2002
8 th Installment	2,00,000	November 30, 2002
9 th Installment	1,00,00,000	March 27, 2002
Total	5,82,60,000	

As a result of only 43.17% of the outlay released to the PA, the overall funds utilization as a percentage of targeted funds was low, and stood at 42.88% of the target (Rs.1, 349.65 lakhs).

Improved PA Management

Overview of project gains

- Desilting of four water tanks in the PA was undertaken in the second quarter. We visited three tanks that were desilted during phase I of the project. These were Maralukatte, Jaladakatte and Viderakatte. Except for Viderakatte, the two other desilted ponds were filled with water, whereas Viderakatte pond was only partially filled. Indirect evidences of animal use of the area were observed.
- Putting up of animal control barriers.
- Soil working around bamboo clumps in the PA to improve the growth of bamboo and availability of fodder.
- Weed eradication.
- Maintenance and improvement of roads.
- Fire line clearance and controlled burning in Kallahalla range.
- View line clearance in Kallahalla range.
- Weed eradication in Kallahalla range.
- Improvement of 170 km of gravel inspection roads in the PA with a total expenditure of Rs 16.06 lakhs.
- Construction of four check dams, causeways, culverts in Kallahala, Mathigod, Metikuppe and Nagarhole Ranges.
- Construction and repair of animal control structures such as EPT and solar fence with a total expenditure of Rs 4.39 lakhs.
- Building maintenance and other works.
- Construction of 1,376 km of fire protection line in all the seven Ranges in the PA with an expenditure of Rs 51.80 lakhs.
- Desilting of eight tanks in the PA.
- Construction of water harvesting structure / feeder channel.
- Construction of fire watchtower at Masalebetta in DB Kuppe wildlife range was completed in the month of March 2003.
- Soil-working (i.e., increasing the porosity of soil for moisture absorption) around natural bamboo clumps was undertaken with a total expenditure of Rs 7.01 lakhs to improve availability of fodder by enhancing the productivity of clumps.
- View line and clearance of weed was undertaken for which an expenditure of Rs 18.48 lakhs was incurred.

Site-specific Key Strengths and Shortcomings

Strengths

- Improvement of 176 km of gravel roads were carried out in the PA with a total investment of Rs. 16.06 lakhs.
- About 1,376 km of the fire protection line was constructed in all ranges of PA with an expenditure of Rs. 51.80 lakhs.
- Construction of water harvesting structures/ feeder channels was undertaken.
- Effective animal control barriers have been put up in some of the EDC villages. In some cases solar fencing, with a running length of 105 km, has been put up, which has been useful. Besides this, about 110 km of EPT restoration works have been undertaken.

- An ecologist was engaged, during Phase I, for collection of basic data for estimating reduction in firewood use and intensity of grazing. Average firewood use is estimated at 5 tons/per family/per year and average fodder grazed by cattle is 467 tons/village/year.
- Soil – working around natural bamboo clumps was undertaken with a total expenditure of Rs. 7.01 lakhs to improve the availability of fodder by enhancing the productivity of clumps.

Shortcomings

- The services of the ecologist were discontinued in the extended phase of IEP.
- Coffee estates located around the PA and tobacco barons in peripheral villages continue to put pressure on PA resources. Both tobacco curers and labourers from coffee estates extract firewood.
- Despite efforts to control crop depredation by wild animals, the problem is continuing.
- Staff inadequacy continues to constrain PA management. Number of posts of forest guards, forest watchers and foresters, among others, are vacant.

Village Ecodevelopment

Site-specific Key Strengths and Shortcomings

Strengths

- Involvement of NGOs in microplan preparation and implementation had been useful. Three NGOs were contracted by the PA authorities for facilitating microplan implementation in the EDC villages. The representatives of these NGOs are from surrounding areas and are well versed with the local language and cultural conditions.
- One hundred eight microplans were prepared to cover 15,500 beneficiary families.
- About 6,500 households have been provided with LPG connections and this is likely to reduce firewood extraction from PA forests.
- More than 250 tribal families from Hadies located inside the PA have been successfully relocated to areas outside the PA.
- Translation of microplans in local language from English and distribution of translated microplans to respective EDC villages.

Shortcomings

- Inability of a large number of landless beneficiaries to derive benefits from IEP in some of the EDC villages.
- Inadequate capacity of EDC Chairmen in keeping and maintaining records pertaining to EDC activities.
- Administrative delays due to frequent transfers of senior officers lately have slowed the progress of microplan implementation.

Social Impact

The social impact of Village Ecodevelopment component has been critically assessed and examined through a snap beneficiary survey of all the seven PAs, including the

Nagarhole National Park. As mentioned above, the beneficiary survey was conducted to understand the dynamics of the village ecodevelopment programmes in terms of its interface with PA conservation. The salient findings are as follows:

- In the extended Phase of IEP, emphasis was on Village Ecodevelopment. Other components, such as Impact Monitoring and Research, Improved PA Management and Environmental Education and Awareness were assigned low priority.
- The beneficiaries are using the assets provided during the first phase, such as LPG, Biogas plants etc. As a result of continuous use of fuel saving devices, there has been a reduction in extraction of firewood from PA forests to the tune of 40% to 50%. Now more and more villagers are coming forward for fuel saving devices, particularly, LPG, which can be obtained by paying 50 percent of the total cost as beneficiary contribution.
- Most of the microplans have been revised recently and are available in local language. In some of the villages, beneficiaries want to substitute a few of the microplan activities with activities that were found more useful in the previous phase.
- The average amount of microplan funds spent for providing benefits to the landless families was low primarily on account of their inability to provide the matching 25% contribution.
- The women SHGs formed during first phase of the project are continuing to function effectively. The process of formation of SHGs is continuing in the extended phase of IEP. The SHG members are regularly making contributions to the SHG corpus, which is rotated as loan to SHG members. Sustenance of the SHG depends on enabling members to acquire skills for undertaking income generating activities.
- An increasing number of poor beneficiary families were assisted for initiating self-employment activities by providing wage labour in community oriented activities (community hall, boundary wall, etc.).
- In some villages, implementation of IEP has been unsatisfactory with low investments varying between Rs.2000 to Rs.9000 per family.
- Fast pace of microplan implementation in the extended phase of IEP encouraged a large number of beneficiaries to deposit 25 percent contribution. The EDC members who did not deposit 25% contribution earlier were ready to do so in the extended phase.
- Records of EDC funds, total expenditure incurred, total amount realized from the members and outstanding balance etc. continue to be available only with the concerned Member Secretaries.
- Investments made under Improved PA Management have led to a substantial reduction in the intensity of PA resource use, in comparison with the scenario that existed prior to the start of IEP.
- Since most farmers had requested that solar fencing be erected around their fields for protecting their crops from wildlife, the PA authorities undertook solar fencing work in some areas along PA boundaries, and around some EDC villages.
- PA authorities have established anti-poaching camps in the PA to minimize poaching threats through effective vigilance.
- Three NGOs were retained in the extended phase of IEP for providing microplan implementation support in sixty EDC villages (twenty villages assigned to each NGO). These are not functioning effectively as they have not received copies of microplans, the revised statement of accounts relating to investments, and unspent amount available with the EDCs.

- Delay in the posting of Field Director adversely impacted project progress, as in his absence field level staff could not take timely decisions regarding project implementation.
- There are wide variations in EDC members' and field officers' estimates of quantum of reduction in fuelwood consumption and grazing of cattle – 75 to 85% and 40 to 50% respectively. Estimates made by NGOs tally with estimates of field officials.
- In the last quarter, the speed of work was slow due to non- release of 56.83% of the total outlay for 2002-03. Also, there was inadequate supervision of the project activities due to prevailing uncertainty and confusion in the appointment of project administrators. This issue needs to be addressed on an urgent basis.

Analytical Evaluation and Assessment

The pattern of project investment under the Village Ecodevelopment component was determined on the basis of analysis of investments in a sample of 10 villages in Nagarhole visited during Phase II of IEP. Details of investments made in 10 sample villages, microplan budget, and investment per family.

There is a wide variation in exposure of Microplan budget. It varies from the low of 39% (Sogahally) to the high of 86% (Kachuvanhally). The average exposure of microplan budget across 10 villages is 62%.

Environmental Education and Awareness

Site-specific Key Strengths and Shortcomings

Strengths

- Construction of NIC at Nagarhole with audiovisual facilities was useful for exposure workshop and environmental education and awareness programmes.
- Involvement of local NGO for conducting environmental education and awareness programs.
- Good implementation of awareness programs during first phase and extended phase of IEP with a variety of programs conducted targeting many specific groups besides general population.
- PA has developed good absorption capacity for fund utilization under this component.

Shortcoming

- Recently constructed NIC at Veeranhosally is not yet functional.
- Workshop proposed in the APO was not conducted by the PA authorities.

Analysis of Activities Initiated by PA

The services of a local NGO (IITE), which was contracted in the first phase of IEP, were continued for the extended project period. The implementation of education awareness programs through an NGO was a useful strategy, as the members of the NGO were familiar with local cultural conditions and were able to successfully carry out a number of awareness building events for schools and other stakeholder groups, such as, EDC

Presidents and Executive Committee Members. Many of these were well received and had a good impact on people.

Civil works like construction of Nature Interpretation Centre at Nagarhole has been completed. Construction of Nature Interpretation Centre at Veeranhosahally is presently in progress. For the awareness programs, the PA authorities were able to utilize substantial part of the allocated funds (90.71%) under this component by spending Rs 32.72 lakhs.

Financial performance for 'Development of Conceptual Framework' and 'Education Center' was impressive. The PA authorities had utilized 86.28% of the allocated funds for this activity. Construction of NIC at Nagarhole with audiovisual and other facilities had been completed. This has proved to be useful for organizing workshop and environmental education and awareness programme for stakeholders. Recently constructed NIC at Veeranhosally is not yet functional.

During the current year, the PA authorities have conducted six Trekking and Nature camps for school children, adventure club members and others to create environmental awareness. Field visits and workshops for staff and EDC members were also conducted, for which an expenditure of Rs 6.06 lakhs was incurred in the current year.

Good community participation was observed in a number of environmental education and awareness activities that were carried out in villages as well as Hadies. For example, 24 tree-planting activities were organized in which about 1,200 villagers and tribals participated. Similarly, more than 2,000 beneficiaries participated in eight fire awareness programmes.

Institutional and Financial Aspects

Strengths

- The micro plan is perceived as peoples' plan, and the authorities concerned with its implementation have adequate degree of freedom to adopt changes, if any required, in response to communities' needs. There is, thus, some amount of flexibility in implementation of micro plans including goal and target setting, which can be modified at the level of the PCCF.
- Use of occasional workshops as a forum for communicating decisions to forest staff. The decisions filter down to the EDC Chairmen either through the RFOs or when the EDC Chairmen participate in such workshops.
- Field staff makes regular visits to EDC villages and thus the decisions taken by higher authorities regarding micro plan implementation reach the beneficiaries. Regular visits also help in cementing the cordial relationship between the Forest Department and the project beneficiaries that currently exists.

Inadequacies

- The timeframe involved for approval of goals is often long and takes 3-4 months in certain cases. It would be appropriate to reduce the timeframe for modifying micro plan activities.

- Administrative delays arising due to the absence of a designated Field Director have hampered project implementation at the institutional level.
- Vacancies at the level of field staff, despite the presence of a staff plan. The full complement of staff was not posted.

Innovative Practices

The unique approach and concept of IEP and its implementation resulted in introduction of innovative practices during Phase I, which were continued during the extended phase in view of their demonstrated positive impact on project deliverables including beneficiary participation. Some new innovative practices were added during the extended phase of IEP. Some of the noteworthy innovations at Nagarhole, which we have shared with beneficiaries through Transfer of Knowledge Workshops, are:

- **NGO support in micro plan implementation:** In the first phase, four noted NGOs were awarded contracts for assisting the PA authorities in micro plan preparation and implementation. Services of two of them were retained during extended phase of IEP. This proved useful, as the PA staff was initially inexperienced to handle the specialized nature of IEP.
- **Project funds and Hadies.** Hundred percent financial assistance for acquisition of project related assets was provided to tribals residing in Hadies, which are located inside the PA forests. The tribals did not provide their 25% share for the benefits that accrued to them from project funds.
- **Resettlement strategy.** Utilizing the funds of Centrally Sponsored Beneficiary Oriented Tribal Development Scheme, over 250 tribal families from the Hadies were resettled by the PA authorities in the Nagapura resettlement colony. Each family that relocated was provided with two □ exposure of agriculture land and one house, in addition to cash support, which was proposed at Rs one lakh. The living conditions in the resettlement colony were much superior than the Hadies, and were well appreciated by the resettled tribals.
- **Engagement of NGO for awareness building:** The PA authorities successfully engaged a local NGO for undertaking a variety of awareness programs and campaigns targeting various stakeholders.

Lessons Learnt

- Fund flow during project implementation should be smooth lest project's progress is constrained.
- Staff capacity building and specialized training should be completed in the first year of the project and the trained staff should not be transferred.
- All documents related to villages, such as micro plans, should be available in local language from the project start and adequate copies should be made available to village communities.
- Staff strength should be adequate for implementing a specialized project like IEP.
- Support from NGO and individual consultants proved beneficial not only for reducing the workload on the PA staff, but also for addressing project tasks requiring specialized professional inputs.
- Project should have in-built mechanisms for monitoring and auditing of accounts, ensuring financial accountability, and fiscal and operational transparency.

- There should be limited financial autonomy at the PA level for engaging professionals for conducting research, as required, for improving PA management.

Recommendations

Environmental Management Strengthening

1. Weed removal works that yielded good results should be monitored closely and selective weed removal should be undertaken to prevent re-emergence. Other critically weed-infested areas should be identified, and if the project gets extension, then these areas should also be subjected to weed removal.
2. The PA authorities should provide skill development training to field staff in areas, such as, vegetation sampling, for monitoring the improvement of PA habitats through interventions implemented under the Improved PA Management component.
3. Inadequacy of staff, hampers effective implementation of approved management plan. Staff shortage needs to be addressed as early as possible by the State Government. Beside others, vacant posts of forest guards/beat guards should be filled up on a priority basis to ensure improvement in PA Management.
4. The results of completed research projects were not factored in the Management Plan as many research studies were completed after the finalization and approval of the PA Management Plan. Accordingly, the PA authorities should compile the recommendations emanating from various research projects and share those with field functionaries, EDC, and others concerned with IEP implementation in order to further improve PA management.
5. Forest staff on duty should be provided some fuel saving devices. They should be provided LPG facilities at anti-poaching camps, where at present locally collected wood is being used for cooking purposes.

Monitoring Procedures

6. Village EDCs should be motivated and encouraged to restart regular EDC meetings for monitoring physical and financial progress, and discussing future/planned activities to be undertaken. EDC meetings in the post-project period would be critical for EDC sustainability.
7. Guidelines for effective utilization of Village Development Fund should be evolved and provided to all EDCs. Most villagers are keen to utilize the VDF in some form or the other. Availability of guidelines would facilitate easy monitoring of VDF.
8. Out-of-state exposure trips for EDC Presidents and Member-Secretaries should be planned in advance so that these could be undertaken and are not constrained due to other factors, such as non-availability of Member-Secretaries during the fire season.
9. The PA authorities should appoint a suitable Woman Development Officer to provide guidance to SHGs to enable them to acquire skills and capacities required for their long-term sustainability. The appointed officer should also tie up with other state agencies to provide necessary training to the SHG members for undertaking income generating activities.
10. Women SHG members are eagerly waiting for a policy decision on utilization of a portion of VDF amount (25% contribution deposited in EDC funds), for providing loans for income-generating activities. Since most of the SHGs had recovered all outstanding dues from their members, some SHGs (showing good performance) may be given small loans by the EDCs on an experimental basis.

11. To make the SHGs viable and sustainable, a Confederation of SHGs may be set up with vertical linkages with local banks, NABARD and marketing agencies. For the present, the NGOs engaged for implementation support should be asked to provide necessary support and cooperation to the SHG executives, who are enthusiastic and sincere, but lack experience and skill.
12. Microplan activities should be clearly displayed in a prominent place indicating total cost of the microplan, main activities, total anticipated expenditure and total number of beneficiaries. Walls of school buildings, balawadi centres, health centres etc can be suitably utilized to avoid damage/removal of the display boards, by the miscreants.
13. The PA authorities should attempt to generate local employment by way of using local labour for undertaking tendered works such as construction of community halls. For this they may have to seek cooperation of contractors who are awarded construction contracts.
14. NGOs that are providing micro plan implementation support should meet regularly among themselves and with PA staff (Member-Secretaries, ACF, Ecodevelopment etc) to tackle any challenges that may arise during the course of the remaining project period. They should be provided with copies of the revised microplans, statement of accounts, available funds with CDF and VDF accounts, and latest decision of the PA authorities regarding utilization of VDF. Unless they are supplied with relevant information and given clear guidelines, they cannot be made accountable for failure or lapses in IEP implementation.
15. The NGOs should play a more critical role in identifying and popularizing local success stories that have emerged out of the IEP. For this, they should actively arrange inter-village visits by different members of EDCs.
16. The NGO implementing the education and awareness campaigns should be asked to develop a small capsule on dissemination of the new management plan of NNP and include the same on its campaigns in various EDC villages.
17. The EDC Presidents, Executives and Member Secretaries should be taken to other PAs for exposure trips to learn how other EDCs overcome constraints. The EDCs which are functioning most effectively should be considered for proper recognition; this will motivate the members to perform better.

Other Recommendations

18. Activities, such as construction of community halls and erection of solar fence should be completed well within the project period, so that the villages can start using the assets while the project is still continuing.
19. The community halls should be used for some income generating activities (tailoring units, processing of spices, renting out for marriage, etc.) to ensure that some earning is generated, which can be used for its maintenance and recreational activities of the community.
20. The PA authorities should ensure that local labour force engaged in community oriented works to enable them pay 25 percent contribution and avail assets like pressure cooker, LPG, etc. For this, they may have to seek cooperation of contractors who are awarded the construction contracts.
21. A Confederation of EDCs may be set up for regular supply of LPG cylinders to beneficiaries at a reasonable price. Such an agency will be able to earn profit for its members, provide employment to few unemployed youths, and develop sense of community participation. The concerned NGOs may be advised to monitor the use of LPG and other assets provided to EDC members

PALAMAU TIGER RESERVE

Project Progress Status

PTR has utilized 96.19% of funds released (including revalidated amounts) during the project period (see figure 23). A year-wise account of utilization of released and revalidated funds is given in Table 13 and Figure 24.

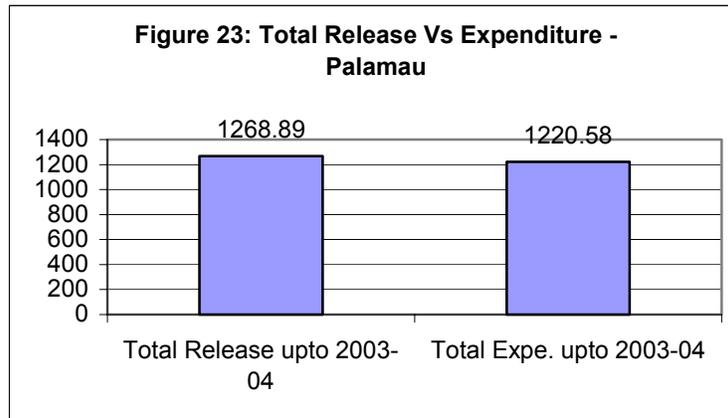


Table 13: Year-wise funds utilization (Rs Lakhs)

<u>Year</u>	<u>Release</u>	<u>Expenditure</u>	<u>Revalidated Amount</u>	<u>% Utilization</u>
1995/96	30	1.245	28.755 (1996/97)	4.15
1996/97	0	6.11	22.645 (1997/98)	21.25
1997/98	50	0	72.65 (1998/99)	0
1998/99	89.985	61.145	101.49 (1999/2000)	37.60
1999/00	200	126.786	174.704 (2000/01)	42.05
2000/01	125	90.672	209.032 (2001/02)	30.25
2001/02	325.67	262.08	272.622 (2002/03)	49.01
2002/03	252.39	412.60	112.4 (2003/04)	78.59
2003/04	195.84	259.91		84.32
Total	1268.89	1220.58	994.298	96.19

Source : Project Tiger Office

The funds utilization remained under 45% of released funds during the period 1995-96 to 2000-01 demonstrating inadequate absorptive capacity of the PA. In the first year of project implementation only 4% funds could be utilized. It was only during the year 1999-2000 that the PA authorities utilized substantive funds, which was also low at 42%.

During 1997-1998 the expenditure was nil, as the State Government did not release the funds to the PA authorities. The key factors contributing to low investments are:

- Inadequate staff – about 70 positions have been lying vacant for several years
- Inadequate administrative mechanisms
- Disruptions in administrative mechanisms arising from the splitting of Bihar in two separate states
- Poor response to reciprocal commitments in the initial project period

Due to low expenditure by PTR, the World Bank revised the targets after the Mid-Term Review. It is noteworthy that the total initial approved budget was reduced by 57%. The maximum reduction was under the Village Ecodevelopment component, which was slashed by almost 63%.

Utilization of available funds increased in Phase II, as by then the beneficiaries were fully aware of the nature and benefits of the project and they came forward in large numbers to avail the benefits. The high utilization of available funds continued in the final year of project implementation also and the utilization was at 84.32 percent of released funds.

Figure 24 : Year-wise utilization of funds as % of available funds

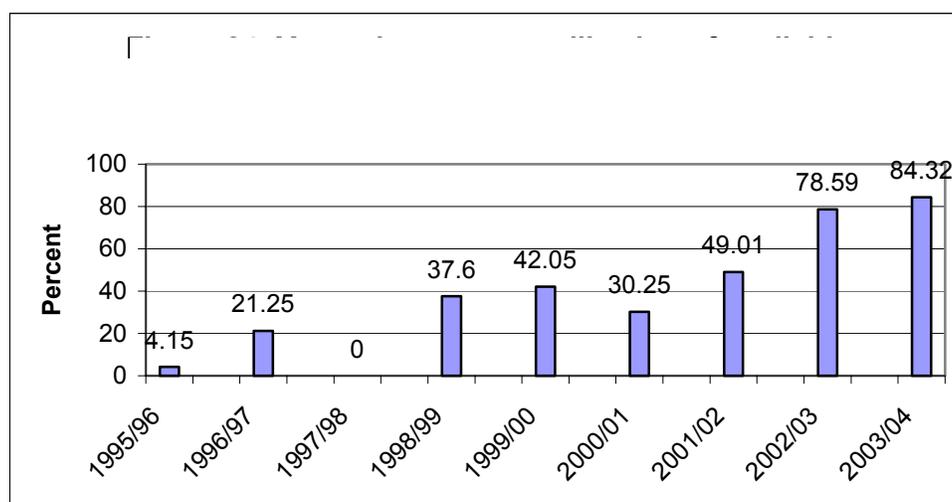


Table 14: Component-wise funds utilization as a percentage of APO targets of the three phases – Palamau

Components	Phase I	Phase II	Phase III
Improved PA Management	11.87	50.95	42.39
Village Ecodevelopment	19.41	73.34	83.37
Environmental Education and Awareness	14.97	0.53	69.62
Impact Monitoring and Research	2.57	34.38	100.00
Total	15.70	65.51	66.27

Component-wise expenditure pattern for the three phases indicates that though investments under Improved PA Management were not impressive, the component of Village Ecodevelopment performed quite well in the final two years of project implementation. The funds utilization in Phases II and III for Village Ecodevelopment was at 73.34 and 83.37 per cent of targeted funds respectively. With regard to Environmental Education and Awareness, expenditure was miniscule in Phases I & II, but was significant in phase III (69.62% of APO target). Under the component of Impact Monitoring and Research, investments in the first two Phases remained low as no major studies were awarded. In Phase III all the targeted funds under this component were utilized.

The APO outlay for PTR for the year 2003-2004 was Rs 392.17 lakhs. This included both investment (amount spent on various project activities) and recurrent (salaries and O&M) costs. Whereas investments were funded by the Central Government Funds (Project Tiger Office), recurrent costs were met by the State Government funds. Following table provides details of budgetary allocations in the PA for the year 2003-2004, which includes Rs. 49.30 lakhs as Staff Cost to be borne by the State Government and Rs. 34.66 lakhs as villagers' contribution.

Table 15: Details of the budgetary allocations for the year 2003-2004

Table/ Activity	Total Cost of APO as restricted by World Bank cost tables (Component wise)			Central Government Share			Amount including the revalidated amount (Rs in lakh)
	Investment Cost	Recurrent Cost	Total	Investment Cost	Recurrent Cost	Total	
104 Improved PA Management	29.02	131.58	160.6	29.02	82.3	111.3	89.04
204 Village Eco Dev. Program	213.28	4.4	217.68	178.62	4.4	183.02	146.41
304 Envtl. Education & Awareness Campaign	11.5	0.22	11.72	11.5	0.22	11.72	9.38
404 Impact Monitoring & Research	2.17	-	2.17	2.17	-	2.17	1.73
501 Infor. Tech. Eqpt.	0.03	-	0.03	0.03	-	0.03	0.03
Total	256	136.2	392.2*	221.34	86.9	308.24	246.59

The PA has made significant progress with regards to all project components during the current financial year (2003 – 2004), which is demonstrated by overall utilization of 87% of the APO outlay till March 2004 i.e., Rs. 392.17 lakhs of the APO outlay Rs.342.84 lakhs had been spent. Under the component Improved PA Management, 73% of the

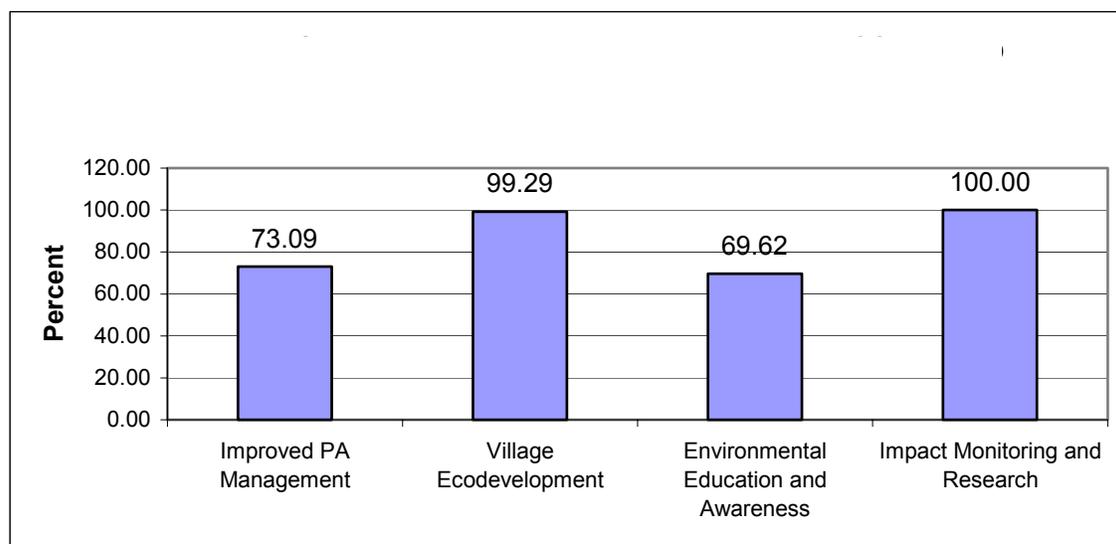
targeted funds have been utilized. For the components such as Village Ecodevelopment, Environmental Education and Awareness and Impact Monitoring and Research, the progress has been highly impressive with 99%, 69% and 100% utilization respectively. Component-wise details of financial targets and expenditure incurred up to March 2004 are given in table 16:

Table 16: Component-wise details of expenditure incurred for the year 2003-2004

Component	Financial Target (Rs lakh)	Expenditure up to March 2004 (Rs lakh)	Expenditure as % of target
Improved PA Management	160.60	117.38	73.09
Village Ecodevelopment	217.68	216.13	99.29
Environmental Education and Awareness	11.72	8.16	69.62
Impact Monitoring and Research	2.17	2.17	100
Total	392.17	343.84	87.68

The following chart provides component-wise utilization of funds as a percentage of APO targets in the current financial year (2003 – 2004)

Figure 25: component-wise utilization of funds as percentage of APO targets upto March 2004



Improved PA Management

Overview of project gains

Progress up to June 2003

- 190 km of boundary demarcated & 1423 pillars erected.
- 235 km of access track improved & 47 causeways constructed.
- 3 wireless operators rooms & 2 Fire Watchtowers made.
- Approx 14.3 km EPT restoration completed; Rs 6.44 Lakh.

- Weed removal in about 1685 ha undertaken.
- 32 km of road/track path improvement undertaken.
- 6 staff quarters and 3 check dams constructed.
- 1 Animal Rescue Center constructed.
- 2 fire watchtowers constructed.

Progress during 2003 – 2004

- Management Plan approved.
- 5 anicuts and checkdam constructed .
- Weed eradication undertaken in an area o 1860 ha.
- Desilting of old checkdams, construction of contour trench and culverts and installation of handpumps.
- Construction and repair of Guard/Foresters Quarters.
- Study tours for guards and forester conducted.
- Conducted workshops on gender sensitization.

Site-specific strengths and shortcomings

Strengths

- New Management Plan is approved and is under implementation.
- The new management plan has strengthened the PA management, as it led to collection of latest information on various aspects of PA management by awarding eight short-term consultancies.
- PA management capacity has been upgraded:
 - One animal rescue center constructed.
 - Two fire watch towers constructed.
 - 200 chains of EPT in South Division and 600 chains of EPT in PT division were constructed for preventing crop raiding by wild animals.
 - Construction of forest guard quarters and installation of two hand pumps were completed with an expenditure of Rs. 6.38 lakhs, under amenities for staff.
 - Two cars have been acquired at a cost of Rs. 8.80 lakhs to improve mobility of senior staff.
 - Two wireless operators rooms constructed.
 - Twelve causeways were constructed with an expenditure of Rs 6.60 Lakhs for improving mobility and transportation.
- Habitat improvement works have started yielding positive results. Areas where weed removal had been undertaken have shown increase in grass cover area, which is useful for herbivores.
 - Weed removal works were carried out on over 3544 ha to restore habitat quality.
 - Over 230 km of road improvement work has been carried out.
 - Better growth of native species observed after weed removal.

Shortcomings

- Mobility of staff for PA protection is still a problem, mainly due to inadequate transport and communication infrastructure and presence of heavily armed extremists in the PA.

- Inadequacy of field level staff is a major shortcoming and has constrained PA management. Further, the existing staff is old and inadequately trained in wildlife conservation issues
- The staff Plan is old and requires reassessment. More and young staff is required.
- Existing staff is inadequately trained in wildlife management issues.
- Available wireless handsets cant be used, as they identify staff as easy targets for extremists.

Village Ecodevelopment

Site-specific strengths and shortcomings

Strengths

- 65 microplans prepared covering 5312 households.
- Project has made positive impact on social and economic status of the beneficiaries. Most of the tribal households have improved their economic condition, as they have derived benefits from IEP.
- Appointment of women facilitators in villages has been a useful strategy for increasing women participation in EDC activities.
- Construction of new ponds, irrigation wells and dams and land leveling (Korkar) have been fruitful interventions, as these served the interests of farmer community and also lead to wage opportunities for the landless and poor.
- Increase in goodwill and confidence of people and increased trust between the villagers and forest officials.

Shortcomings

- Poor mobility of Member-Secretaries, as most of the times they have to depend on State transport services.
- Poor law and order situation and threat to life of the PA officers negatively impacted on project implementation.
- High resource extraction continues by villagers living in more than 100 fringe area villages.
- Low emphasis on alternative fuel / saving devices to reduce firewood extraction pressure from PA forests.

Social Impact

- One of the social impacts of project implementation is the commitment of villagers towards PA protection. Accordingly, as per the project beneficiaries, there is a reduction of firewood extraction from forests by 30% to 40%
- Community benefits and personal benefits have benefited the beneficiaries economically, and are equally preferred in the implementation of microplan interventions.
- The landless and poor families have benefited through availing employment opportunities generated by community works
- Most beneficiaries (94%) feel that relationship with Forest Department has improved.
- Women have been empowered through project implementation, particularly through SHG activities.

The social impact of Village Ecodevelopment component has been critically assessed and examined through a snap beneficiary survey of all the seven PAs, including the Palamau Tiger Reserve. As mentioned above, the beneficiary survey was conducted to understand the dynamics of the village ecodevelopment programmes in terms of its interface with PA conservation. The salient findings are:

- Personal or individual benefiting activities in the form of land leveling and provision of agriculture equipment i.e. pump set, etc. and wage employment opportunities provided through individual based and small group based and community based activities are preferred by both the poor and farming communities. This is clearly demonstrated by high demand for these activities in villages surrounded by forest and having meager water supply for agriculture.
- The land holders continued to derive more benefits from microplan implementation than the poor and the landless.
- Difficulty in procurement and high cost of LPG have constrained promotion of LPG.
- Substantive interest has been created among the villagers about IEP activities, primarily due to implementation of interventions based on demand driven approach.
- Within the ambit of community-works, water source development is the most preferred activity. Wells, ponds and check dams are all preferred activities, as they help improve both agriculture and drinking water shortages.
- The emphasis on alternative fuel saving devices has remained low throughout the project implementation. Project beneficiaries have received pressure cookers and LPG, but the distribution / provision of such assets is low and insufficient.
- Most beneficiaries continue to depend on firewood as the main source of fuel for both cooking and lighting. This is also reflected from the fact that over 80% of the respondents visit PA for firewood collection at least once in a week.
- Grazing also continues to put pressure on PA habitats, as it has been estimated that about 80,000 cattle graze in PA forests.
- IEP implementation has contributed to the reduction of pressure on PA resources, though only marginally. A large number of beneficiaries have reflected that some reduction has been achieved in firewood extraction, grazing as well as poaching.
- General awareness regarding project funds, microplan outlays and expenditures is observed. Transparency and awareness regarding project provisions adversely impacted beneficiary participation in Village Ecodevelopment programme especially in project tiger divisions.
- Almost all the beneficiaries are of the view that their relationship with forest department has improved significantly though threat from MCC group and miscreants are also continuing.
- Most beneficiaries agree that women participation has increased through project implementation. SHG formation has been undertaken but has not gained momentum. There is potential to form 1 or 2 SHG in each EDC.
- A large number of beneficiaries are of the view that women empowerment has increased due to IEP, particularly their representation both in EDCs and in SHGs.

Analytical Evaluation and Assessment

Based on a sample of 10 EDC villages, the average per family microplan expenditure in the EDC villages at PTR is Rs 11,475 on the various activities implemented in the villages.

Environmental Education and Awareness

Site-specific key strengths and shortcomings

Strengths

- Recently a contract was signed with CEE with a total cost of Rs. 10 lakhs to prepare modules and other details of training programmes.
- Awareness creation efforts started at PA level.
- EDC presidents and executive committee members regularly visit Nature Interpretation Center at Betla. Upgradation of NIC is in progress with more informative and educative displays.

Shortcomings

- No emphasis on establishment of nature clubs, nature camps, etc.
- No investments made for materials and publications.
- No availability of NGO support for undertaking awareness building programs.
- Very low investment levels under the component.
- Inadequate emphasis on awareness workshops, seminars and training programmes.

Analysis of activities initiated by PA authorities

Due to the implementation of IEP and constant interaction of the forest staff with the EDC beneficiaries, the awareness level of the people in EDC villages has gone up. This is primarily due to the fact that the project investments have helped people and they appreciate the help rendered to them by the Forest Department. While visiting EDC villages, we found that the project beneficiaries were aware of the importance of conservation of forest resources. However, the number of such beneficiaries was not very high. The PA authorities would need to undertake awareness generation workshops, which could be held at the village level and also at the Nature Interpretation Center at Betla. In the past, workshops for EDC members were held on various aspects of project and its implementation. However, for increasing beneficiary awareness regarding forest protection, regular workshops covering as many beneficiaries as possible should be conducted. In this regard a mobile exhibition-cum-workshop can also be considered.

In the first phase, The PA authorities undertook very limited activities under this component. This is evident from the low expenditure levels. With regard to Development of Conceptual Framework, no investment was made on organizing the workshop and for strategy formulation.

During Phase II no activity was undertaken by the PA authorities under this component. Out of the total financial target of Rs. 17 lakhs, only Rs. 9, 000 was spent towards recurrent costs. However, nine training programmes were conducted during this phase for which investment was made from the Improved PA Management component. These training programmes were focused on capacity building of staff, EDC members and other stakeholders in the area of PA management, participatory monitoring processes,

tranquilizing/ capturing and transporting stray animals and managing community revolving funds.

During Phase III, no investment was made on awareness programmes, workshops / training programmes under the component. Only investment made was towards payment of consultancy fee to CEE for design and installation of NIC at Betla. Few training programmes, workshops and study tours were conducted this year for which expenditure was incurred from the component Improved PA Management.

Institutional and Financial Aspects of Project Implementation

Strengths

- EDCs are being institutionalized and being registered by the state government for their continuance in post project period.
- Existence of a staff plan having clarity with respect to roles and responsibilities of staff at all levels.
- A well-defined participatory mechanism for goal setting. The EDC sets the goals through a consultative process that involves village committees.
- Mechanism for associating professionals, as required, with the project to address specific issues.
- Leveraging of funds from the state plan agreed by government of Jharkhand to sustain EDCs in post project period.

Inadequacies

- Transparency of operations. For example, despite a structured mechanism for communicating the set goals to villagers, the community is not fully aware of the goals and their implementation that substantially reduces the transparency of PTR operations. The inadequacy vis-à-vis transparency is not due to systemic factors but is primarily a result of inadequate staff strength.
- Inadequate staff strength. A large number of posts have been vacant since the past two decades. This inadequacy also impacts adversely on implementation of the planned and set activities. The staff is mostly old and inadequately trained which results in constraining overall progress of the project.
- Inadequate mechanisms to link conservation with livelihood needs of the PA population - livelihood needs and conservation issues cannot be delinked
- Absence of dedicated budget for staff training and skill upgradation. Despite provision of funds under the IEP, adequate training to staff has not been provided.

Innovative Practices

Some of the noteworthy innovations at Palamau are:

- **Appointing women coordinators/facilitators:** The strategy of appointing a woman for facilitating and empowering women through the setting up of SHGs is a new innovative strategy adopted by PTR. This strategy is likely to increase the participation of women in EDC activities.

- **Appointment of one women EDC member (tribal) as EDC President:** This has resolved some village disputes and created confidence among women of neighbouring villages about their capacity to mobilize group activities.
- **Implementing some popular activities:** Some of the activities such as dam construction have been very popular among the beneficiaries, as they addressed the needs of farmers and poor people by providing water for irrigation and drinking purposes, and employment.
- **Loans to educated people for alternative income generating activities:** Some of the educated and motivated beneficiaries have been supported to start income generating activities. The success of these activities has motivated other villagers who have taken on such activities on their own.

Lessons Learnt

- Lack of smooth flow of funds in the initial project phase can severely constrain overall project performance due to substantial ripple effect in the later years.
- Motivation of field staff along with skill up-gradation is critical for success of the project. Staff skills should be upgraded in the initial phase of the project itself and trained staff should not be transferred.
- Appointing suitable women coordinators would encourage increased women beneficiary participation in the village ecodevelopment activities and SHG formation.
- To reduce the dependence of villagers on the PA resources, it is paramount that fuel saving devices be promoted, in the absence of which firewood extraction would continue to pose a threat to PA habitats.
- Grazing continues to be a major problem and needs to be addressed by PA authorities. There is need to intensify cattle breed improvement programmes through artificial insemination or providing murrhah bulls to the communities to provide natural services. This will help improve local cattle breed with high productivity and subsequently enable community to reduce the unproductive cattle population. This effort will counter the problem of excessive grazing in the PA.

Recommendations

Environment Management Strengthening

1. Impact assessment and monitoring of habitat improvement works such as weed eradication, water management, etc. should be done to assess the improvement in habitat status, wildlife movements and distribution and enhancement of biodiversity in the PA.
2. Communication network vehicles and other equipment in the PA need to be strengthened to improve the mobility and communication of PA staff during PA protection.
3. Weed eradication in the PA should be extended to areas with high density of weed and should be carried out at the appropriate time and on a regular basis. Areas where intensity of weed invasion is high should be mapped and weed removal should be carried out in these areas.

4. PA protection needs to be strengthened to check illegal felling of trees and other offences related to wildlife. Patrolling should be regular by day and night. Communities should be encouraged for joint patrolling in the PA.
5. The PA authorities should explore the possibility of introduction of smokeless chullah as an alternative fuel saving device, since the same is cost effective, and fuel-efficient and will lead to reduction in firewood extraction.

Monitoring Procedures

6. The EDC Chairmen and members of Executive Committees should be provided training in record keeping and maintenance of accounts. This is important, as it will facilitate managing the EDC affairs beyond the project period and will help in monitoring of EDC works.
7. EDC Executives should be trained for monitoring the use of VDF amount.

Other Recommendations

8. Adequate emphasis should be given to consolidation of gains and establishment of linkages with other agencies for ensuring post project sustainability.
9. Beneficiaries should be encouraged to undertake visit to other EDC villages for observing successful works and for experience sharing among themselves.
10. The PA authorities should conduct workshops, and also consider mobile exhibition-cum-workshop, for awareness generation on a large scale.
11. The SHGs need to focus on income generating activities and they should be encouraged to start loan facility for their members.
12. The PA authorities should emphasize consolidation of gains achieved so far by circulating important observations to various EDCs. This will help them to adopt best working practices of the better performing EDCs.
13. The PA authorities should organize suitable training programmes for the women facilitators to equip them with better skill and technique for SHG formation, collection of subscription, membership fees, circulation of money within the members, its recovery, undertake small income generating activities and maintenance of accounts.
14. The PA authorities should supply one page statement in Hindi to each EDC Chairman indicating microplan budget amount, amount spent till January 2004, balance unspent amount available and VDF amount available with the concerned EDC.
15. One page document in Hindi indicating strategies to be followed for better utilization of VDF amount with a view for sustenance of the EDC during post project period, and maintenance of the assets created should be given to EDC Chairmen and Executive Committee members. They should be clear that any bad investment will be at their own risk and they should be accountable to the community.

PENCH TIGER RESERVE

Project Progress Status

Funds for the PA are provided through budgetary allocation. Both state sponsored and centrally sponsored schemes cover the expenditure for the PA. There are both recurring and non recurring expenses.

PTR has utilized 100% of funds released (including revalidated amounts) during the project period (See Figure 26) A year-wise account of utilization of released and revalidated funds is given in Table 16 and Figure 27.

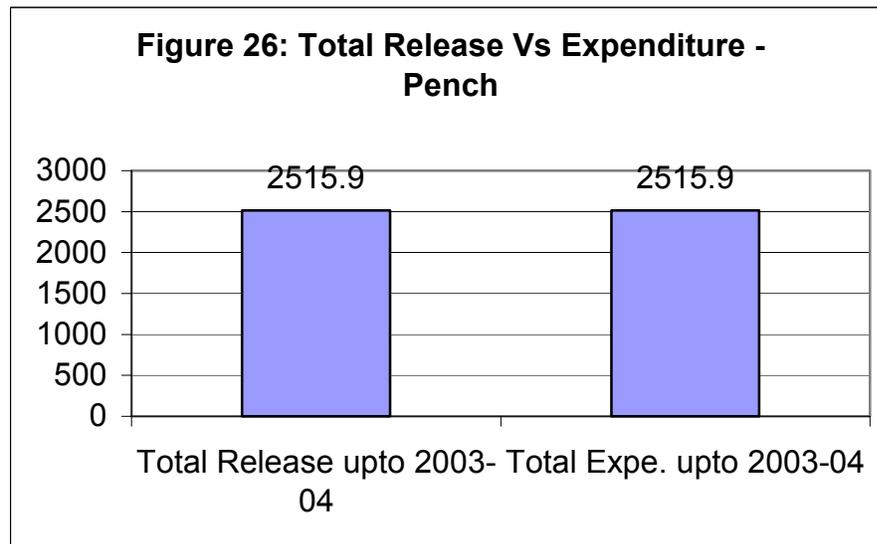


Table 16 – Year-wise funds utilization (Rs Lakhs)

Year	Release	Expenditure	Revalidated Amount	% Utilization
1995/96	30	1.96	28.04 (1996/97)	6.53
1996/97	0	8.89	19.15 (1997/98)	31.70
1997/98	50	42.84	26.31 (1998/99)	61.95
1998/99	365.87	217.43	174.74 (1999/00)	55.44
1999/00	417.72	297.75	294.71 (2000/01)	50.26
2000/01	322.94	461.44	156.21 (2001/02)	74.71
2001/02	643.79	477.21	322.79 (2002/03)	59.65
2002/03	539.21	634.22	227.78	73.58

Year	Release	Expenditure	Revalidated Amount	% Utilization
			(2203/04)	
2003/04	146.37	374.15		100
Total	2515.90	2515.90	1249.73	100

Source : Project Tiger Office

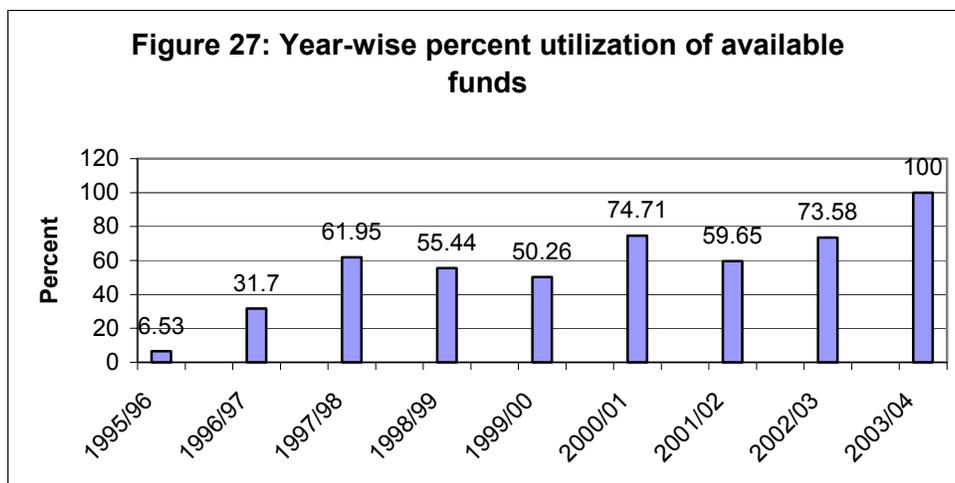
The funds utilization increased progressively in the first three years and then went into a decline phase in the next two years. It again took an upward turn in the year 2000-01. The initial poor quality of microplans negatively affected expenditure pattern. The declining trend during the years 1998-99 and 1999-2000 was perhaps due to uncertainty regarding transfer of staff to the newly created state of Chattisgarh, as a result of which not much work was undertaken in the EDC villages. During the initial project period, there was a lack of trust between the villagers and Forest Department officers. It took some time for the PA authorities to establish a good relationship with the beneficiaries, which later on pushed the expenditure figures, as more and more beneficiaries came forward to take benefits from the IEP funds. During 2001-2002, the funds utilization dipped again. This decline was on account of reduced expenditure incurred on the Improved PA Management component.

The expenditure picked up again in 2002-2003 and peaked at 73.58% of released plus revalidated funds and during 2003-2004 there was 100% utilization of available funds. The last two phases at PTR have been very beneficial and high utilization of funds has helped the PA authorities in consolidating the gains achieved in the early years of project implementation.

Some of the other reasons that contributed to low financial achievements during early project years are:

- Lack of experience of PA staff, particularly in Chhindwara district, in carrying out ecodevelopment activities at the village level
- Some villages were under the charge of Territorial Forest Division in the Chhindwara district, which also resulted in low expenditure, as the officers of Territorial Division did not take adequate interest in ecodevelopment activities. Later the villages were transferred to the Wildlife (PA) Division.

As can be seen from Table 16, with the advance of project period, the expenditure increased progressively, indicating that in the initial phase of the project, the PA did not have adequate absorption capacity to utilize budgeted outlays. But gradually, they were able to build capacity for incurring expenditure on various items. Pench now has demonstrated capacity for undertaking implementation of specialized projects, such as IEP.



The phase-wise funds utilization against the APO targets is given below in Table 17

Table 17: Component-wise utilization of funds as a percentage of APO targets

Components	Phase I	Phase II	Phase III
Improved PA Management	55.38	109.59	109.94
Village Ecodevelopment	45.86	69.21	119.52
Environmental Education and Awareness	16.94	42.60	15.63
Impact Monitoring and Research	20.51	69.91	48.09
Total	45.34	73.28	113.11

Phase III of IEP was the most productive for the PA authorities, as they were able to spend maximum amount of funds allocated to them. In fact, the total utilization exceeded the allotted budget. During phase II, under two components, namely, Improved PA Management and Village Ecodevelopment, the PA authorities exceeded the budgetary outlays. Except Phase I, the PA authorities utilized significant portions of APO targeted funds. Utilization remained low in Phase I for the reasons discussed above. Only during the last two years of phase, did the expenditure pick up at PTR. Overall, in all the three phases, expenditure under the component of Environmental Education and Awareness remained low.

Table 18 below gives the details of the budgetary allocations for the year 2003-2004. The costs in the table include Rs. 39,98 lakhs as Staff Cost to be borne by the State Government and Rs. 49.86 lakhs as villagers' contribution.

Table 18: Budgetary allocations to PTR for the year 2003-2004

Table/ Activity	Total Cost of APO as restricted by World Bank cost tables (Component wise)			Central Government Share			Amount including the revaluated amount (Rs Lakhs)
	Investment Cost	Recurrent Cost	Total	Investment Cost	Recurrent Cost	Total	
Improved PA Management	39.25	39.98	79.23	39.25	-	39.25	31.4
Village Ecodevelopment Program	408.55	0.39	408.94	358.69	0.39	359.08	287.25
Environmental Education & Awareness Campaign	17.27	-	17.27	17.27	-	17.27	13.81
Impact Monitoring & Research	7.61	-	7.61	7.61	-	7.61	6.1
Information Technology Equipment	-	-	-	-	-	-	-
Total	472.68	40.37	513.05*	422.82	0.39	423.21	338.56

Source : Project Tiger Office

Although IEP is under implementation since 1996-1997 onwards, investments remained low until the year 1999-2000. At Pench, the investments picked up after November 2002 due to:

- After harvesting of crops, more and more beneficiaries were in a position to give their 25% contribution to avail benefits
- Distribution of individual benefits such as LPG and pressure cookers encouraged more participation.
- The fact that only a few months were remaining for the project completion (as the project was extended for one year) also triggered an upsurge for availing benefits by the villagers.
- Proposals already submitted by various EDCs were cleared and expenditure was incurred on them.
- Works under the habitat improvement continued along with increased efforts for creating education and awareness regarding conservation.

The PA authorities at PTR, in the past, have exhibited fairly good absorption capacity for funds, particularly for the components of Improved PA Management and Village Ecodevelopment, which are the two main components of the project. However, during 2003-2004 the expenditure dipped a little and the financial performance was average. Only under the component of Village Ecodevelopment, the PA authorities could utilize just above 70% of the allocated funds. For the component of Improved PA Management, the PA authorities were able to utilize 46.53% funds. The funds utilization scenario under the component of Environmental Education and Awareness was low at 11.34%. For Impact Monitoring and Research also only 34.54% of the targeted funds could be utilized. Table 19 below gives the financial target, expenditure and expenditure as a percent of target for the four components of IEP for the year 2003-2004.

Table 19: Component-wise details of expenditure incurred for the year 2003-2004

Component	Financial Target (Rs lakh)	Expenditure up to March 2003 (Rs lakh)	Expenditure as a % of Target
Improved PA Management	92,73,000	43,14,723	46.53
Village Ecodevelopment	6,10,69,000	4,29,17,954	70.28
Environmental Education and Awareness	23,87,000	2,70,798	11.34
Impact Monitoring and Research	10,61,000	3,66,441	34.54
Total	7,37,90,000	4,78,69,916	64.87

For the component of Improved PA Management, the PA authorities utilized funds for civil works and were able to incur expenditure on the construction of a hostel for the wards of forest staff, which is posted in remote locations. Of the targeted funds of Rs 12.21 Lakhs for the hostel, the PA authorities utilized about Rs 7.46 Lakhs. Similarly, for the sub-head ecosystem/habitat restoration, the utilization of funds remained much below the target with Rs 2.74 Lakhs spent from an outlay of Rs 7.22 Lakhs. From a total of Rs 2.76 Lakhs for equipments, the PA authorities could only spent Rs 1.46 Lakhs. It may be recalled that during the EIA conducted this year, the PA authorities have given themselves the minimum score of one under the parameter of equipment. Available funds need to be spent for procuring useful equipments at the earliest. The PA authorities were able to incur an expenditure of Rs 6.96 Lakhs for undertaking an international tour from available funds of Rs 12.98 Lakhs.

Under the sub-head of contract for Management Support, the PA authorities were able to utilize the services of an ecologist, sociologist, women coordinators and computer professionals for information management. A total of Rs 6.07 Lakhs were spent from an outlay of Rs 14,98 Lakhs. A workshop was organized at PTR with an expenditure of Rs 62,480.

For the component of Village Ecodevelopment, some of the activities where expenditure was booked are given below:

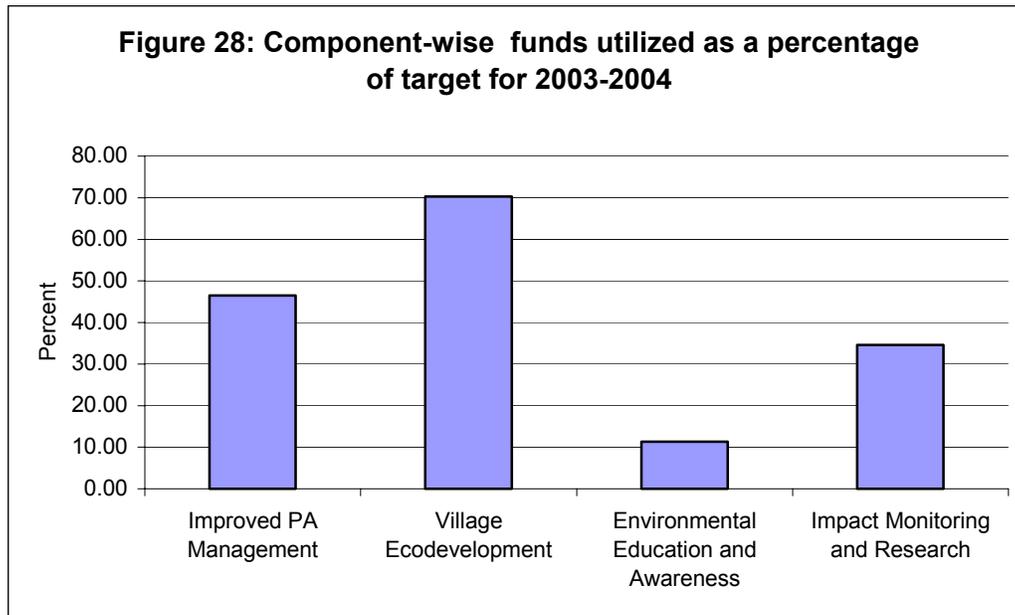
- Rs 3.07 Lakhs from an outlay of Rs 5.23 Lakhs on TA/Subsistence for park staff.
- Rs 65,948 from an outlay of Rs 66,000 for project signboards and dissemination.

Besides these activities, funds under this component were largely spent on microplan activities and other community-oriented works.

Under the component Environmental Education and Awareness, the PA authorities incurred expenditure on procuring materials and publication. A total of Rs 1.25 Lakhs were utilized from an available budget of Rs 1.76 Lakhs. About Rs 1.45 Lakhs were spent on procuring audio-visual equipment.

For the component of Impact Monitoring and Research, Rs 3.66 Lakhs have been spent on Surveillance of Infectious and Parasitic Diseases of the native wild animals of PTR. This is the only activity, under which expenditure was booked for the component of Impact Monitoring and Research.

Figure 28 gives the funds utilization as a percentage of targeted funds for the year 2003-2004.



Overview of project gains

Improved PA Management

Progress up to June 2003

- 18 patrolling camps & 10 barriers created; 1423 boundary pillars erected.
- Wireless stations & 9 watch towers set up.
- 7 mobile wireless sets and 44 wireless handsets purchased.
- Maintenance of 492 km road network and 367 km of trek path.
- 19 stop dams & approximately 9000 loose boulder check dams.
- 28 staff quarters constructed & 15 causeways constructed.
- Successful weed removal works on over 9000 hectare.
- Construction of 7 Game proof walls completed,
- Water conservation works being undertaken in over 10 places inside the PA.
- Two-storied concrete watchtower completed at Rayya Kassa.

Progress during 2003 – 2004

- Construction of hostel for wards of lower staff in Bichua completed.
- Purchase of field equipment for Guards, Foresters and Rangers.
- Construction of GPW in some EDC Villages undertaken.
- Construction of Water Harvesting Structure in the PA and Surrounding EDC Villages undertaken.

Site-specific strengths and shortcomings

Strengths

- PA management capacity has been enhanced with increased ability of PA authorities to continuously focus on conservation activities as per management plan guidelines.
- Development of natural water sources within the PA has eased the water situation for wildlife and has arrested the practice of supplying water through tankers.
- Improved fire protection measures are in place and there is regular maintenance of 295 km of fire lines. Also, maintenance of 492 km road network was undertaken to improve mobility of PA staff.
- The PA authorities have been vaccinating the cattle in the PA area for preventing transmission of diseases to wild animals. A veterinary doctor constantly visits the peripheral villages for immunizing the cattle.
- Habitat improvement and enrichment works have started yielding positive results and more works are being carried out.
 - Successful weed removal works on over 9000 hectare.
 - About 19 stop dams & approximately 9000 loose boulder check dams were built for prevention of soil erosion and water conservation.
- Services of consultant Ecologist are being utilized for:
 - Monitoring the progress of habitat improvement works - continuous monitoring of over 100 natural & 36 artificial waterholes & loose boulder check dams, and
 - Development of draft participatory monitoring guidelines.

Shortcomings

- Lack of adequate coordination with other State Government departments for soliciting funds for undertaking developmental works.
- Low emphasis on weed removal works during the extended Phase.
- Some areas of the buffer are under the management of South Seoni Territorial Division, and East Chhindwara and South Chhindwara Territorial Divisions. This constraints adequate management of PA forests.
- The staff-plan for Pench is quite old (1981) and thus requires reassessment. More field staff is required.

Village Ecodevelopment

Site-specific strengths and shortcomings

Strengths

- 99 microplans were prepared for villages falling in the impact zone.
- Project has made positive impact on social and economic status of the beneficiaries. Some of the tribal households have improved their economic condition, as they have derived benefits from IEP..
- Appointment of women facilitators in villages and a women coordinator boosted SHG formation during second Phase. It has been a useful strategy for increasing women participation in EDC activities.

- Construction of ponds, wells (for drinking and irrigation purpose), dams and farm bunding have been some of the good interventions, as these served the interests of farmer community and also lead to wage opportunities for the landless and poor.
- Increase in the goodwill and confidence of people and increased trust between the villagers and MPFD.
- Installation of a large number of biogas plants and continued emphasis on alternative fuel saving devices in the extended Phase of IEP. It is estimated that this has resulted in reduction of fuelwood consumption by 3 tons/year/family.
- Construction of game proof walls by employing local labour thereby generating large number of mandays as employment and also reducing beneficiaries' dependence on PA resources.
- Focus on assisting poor and landless families for generating alternative employment sources.
- Project has made a positive impact on the beneficiaries. This has created interest in the programme among the non-members and non-interested beneficiaries who were earlier reluctant to contribute and avail the benefits.

Shortcomings

- The frequency of monthly EDC meetings has reduced substantially in the extended Phase of IEP. In some villages only two to three EDC meetings were held during 2002-2003.
- Apart from a copy of the microplan, other documents (particularly passbooks, account registers etc.) are still not available with EDCs. These documents need to be transferred to the EDCs.
- Some beneficiaries have been reluctant to avail benefits on account of their perception that financial assistance received by them from IEP will have to be repaid later.

Social Impact

The implementation of microplan activities in PTR has impacted the lifestyles of the beneficiaries and has impacted the society in a number of ways. Some of the social impacts, as observed by us during our visits to EDC villages and through our interaction with the beneficiaries are listed below:

- A high 90% reduction in grazing intensity reported by PA authorities
- Reduction in firewood is about 50%
- Community-based works are preferred over personal benefits and income generating activities
- The landless and poor also prefer community-based works due to wage employment opportunity
- Land leveling is the most preferred activity (81% beneficiaries)
- LPG and pressure cooker are most preferred devices, followed by biogas
- Inability to afford LPG is a critical factor in limiting its use
- Awareness regarding SHG formation has increased in EDC villages and SHG groups are functioning well in most EDCs
- Women beneficiaries feel empowered through participating in microplan activities, including regular meetings

The social impact of Village Ecodevelopment component has been critically assessed and examined through a snap beneficiary survey of all the seven PAs, including the Pench Tiger Reserve. As mentioned above, the beneficiary survey was conducted to understand the dynamics of the village ecodevelopment programmes in terms of its interface with PA conservation. The salient findings are:

- Personal or individual benefiting activities in the form of game proof walls, farm bunding (*medhbandi*) and provision of agriculture equipment i.e. pump set, etc. along with wage employment opportunities provided through community based and small group based and some individual based activities are preferred by both poor as well farming communities.
- The landholders have derived more benefits from microplan implementation than the poor and the landless.
- Difficulty in procurement and high cost of LPG has been constraints in promoting the use of LPG.
- Lack of training on O&M of biogas units has been one of the main constrains in popularizing its use.
- Substantive interest has been created among the villagers about IEP activities, primarily due to implementation of interventions based on demand driven approach.
- Within the ambit of community-works, water source development is the most preferred activity. Wells, ponds and check dams are all preferred activities, as they help improve both agriculture and drinking water shortages.
- Use of firewood has gone down, as compared to the time of project start. Gradually increasing use of alternative fuel saving devices has resulted in reduction of firewood use.
- Grazing pressure on PA habitats has also reduced. Some grazing is still prevalent in the Chhindwara district area of the PA.
- IEP implementation has contributed to the reduction of pressure on PA resources. A large number of beneficiaries have reflected that good level of reduction has been achieved in firewood extraction, grazing as well as poaching.
- General awareness regarding project funds, microplan outlays and expenditures is observed. Transparency and awareness regarding project provisions has developed through beneficiary participation in Village Ecodevelopment programme in both Sioni and Chindwada districts.
- Almost all the beneficiaries are of the view that their relationship with forest department has improved significantly and a bond of trust between forest officials and villagers has been strengthened.
- Most beneficiaries agree that women participation has increased through project implementation. SHG formation has been undertaken and gained momentum, but had become dull after Phase II due to lack of supervision, monitoring and guidance.
- A high number of beneficiaries are of the view that women empowerment has increased due to IEP, particularly through their representation in both EDCs and SHGs.

Analytical Evaluation and Assessment

Investments under the Village Ecodevelopment component had been on varies activities, ranging from improvement in agricultural support on one hand to providing LPG on the other. Based on a sample of 10 EDC villages, the average per family

microplan expenditure in the EDC villages at PTR is Rs 11,275 on the various activities implemented in the villages.

Environmental Education and Awareness

Site-specific key strengths and shortcomings

Strengths

- Awareness level of the field staff and the EDC members has grown over a period of time.
- Environment education and awareness strategy study was awarded during Phase II.
- PA level visitor strategy and participatory ecotourism study awarded and completed.
- New Nature Interpretation Center under construction.
- New infrastructure added for accommodating increasing tourist inflow.
- Booklets on bird diversity of Pench under preparation.

Shortcomings

- Negligible expenditure on 'Development of Conceptual Framework'.
- Environment education and awareness strategy delayed.
- Nature Interpretation Center building at Khawasa lying unutilized.
- Considerable delay in the construction of a new NIC building at Turia gate.
- Inadequate arrangements for visitor orientation and education programmes.

Analysis of activities initiated by PA authorities

The Environmental Education and Awareness component of IEP received scant attention during the first Phase of IEP. One of the primary reasons for this was absence of a well-equipped Nature Interpretation Center (NIC), which was proposed during the first Phase but not completed. In Phase II, a Nature Interpretation Center was constructed at Khawasa. However, it was found that the NIC built at Khawasa was not ideally located for serving its purpose. This is because it is a few kilometers away from the park's gate and is located in a timber depot of MPFD. Thus, while emphasizing protection of forests and conservation of biodiversity, the NIC itself would have been surrounded by cut tree logs! Accordingly, another NIC is now under construction near Turia Gate. The design had been prepared and finalized at a cost of Rupees 5.00 lakh. Simultaneously, while the NIC building is coming up, the PA authorities have begun to procure equipment for the new NIC. Minor expenditure was also incurred on NGO contract for programme implementation, which included preparation of dissemination material. The procurement process had started after the completion of the first NIC building near Khawasa. Once the new NIC is in place, programmes to increase environmental awareness would be taken up targeting a range of stakeholders.

The PA authorities are proposing to convert the not-in-use NIC building at Khawasa into a youth hostel for providing inexpensive accommodation to student visitors to the PA.

During the first Phase of IEP implementation, many EDC villages, particularly in Chhindwara district, were not covered for creating awareness regarding conservation and sustainable use of natural resources. During the second Phase of IEP, although the

awareness of villagers has increased due to their enhanced participation in village ecodevelopment, awareness campaigns targeting EDCs in district Chhindwara remained low. Awareness campaigns did not take off in the third Phase as well.

The PA authorities had started environmental awareness and education programs for different target groups, such as, villagers, school children and urban people towards the end of Phase I and in Phase II. A visit to the PA was organized for women self-help groups to increase their awareness. It was immensely liked, as most women had never visited Pench before. School children from nearby towns and from as far as Jabalpur visited the Tiger Reserve and camped at Karmajhiri for increasing their awareness about nature and biodiversity conservation.

Impact Monitoring and Research

Site-specific strengths and shortcomings

Strengths

- Construction of research building at Seoni, Jamtara and Karmajhiri completed.
- Some useful research contracts were awarded that provided useful data and information on PA ecology. Such studies were not conducted before on Pench forests.
- Most of the research studies have been completed.
- The PA authorities employed the services of an Ecologist for undertaking scientific monitoring of habitat improvement works, such as loose boulder check dams, weed removal and natural and artificial waterholes etc.

Shortcomings

- Some critical research studies should have been completed prior to the preparation of the PA management plan. Since these are still continuing, opportunity has been lost to give additional direction to PA management related works.
- There is a need to quantify the positive impacts, particularly the impact of biogas plants and LPG in reducing the firewood extraction from the PA forests, which have not been done scientifically so far.
- Research buildings constructed at Karmajhiri and Jamtara should be put to proper use by stocking them with required instruments and other supplies necessary for undertaking various research activities. At present they are lying under-utilized.

Analysis of activities initiated by PA authorities

A total of 10 research projects and consultancies were awarded under IEP to various agencies. Of the 10 research projects/consultancies, four were awarded to the State Forest Research Institute (SFRI), Jabalpur. Majority of the studies were awarded towards the end of Phase I and during Phase II.

Some of the studies on floral and faunal survey were important but the timeframe for carrying out these studies was rather short, from June to December 2001, and May to December 2001 respectively. Within this limited timeframe it was difficult to complete such exhaustive studies and, moreover, these studies and surveys could not have

covered all the seasons of the year. Consequently, these studies overshot their stipulated timeframe and were completed only during the second Phase of IEP.

A number of research studies that were continuing during Phase II included:

- Study on Wetlands and Riparian areas in PTR with a focus on diversity of fishes, waterfowls and mammals.
- Faunal survey focusing on insects, fishes, reptiles and amphibians.
- Surveillance of infectious and parasitic diseases of the native wild animals of PTR.

During the extended Phase of IEP, the PA authorities tried to upgrade support services by investing in purchasing a generator set for the newly constructed research building at Karmajhiri. Power situation in the region is very poor and there are frequent power cuts lasting for hours at a stretch. Consequently, availability of uninterrupted power would facilitate conduct of basic experiments, and preservation of vaccines stored in refrigerator for administering to cattle.

Institutional and Financial Aspects of Project Implementation

Strengths

- The existence of a well-defined goal setting process, which is participatory in nature. Most of the goals under the village ecodevelopment component are set by assessing the demand at the village level.
- Clarity with respect to the roles and responsibilities of staff at all levels.
- Ability of PA authorities to acquire services of a consultant Sociologist and Ecologist that have greatly facilitated in monitoring the progress of project interventions.

Inadequacies

- Though a full staff complement is in place as per the staff plan, more staff strength is required to meet the increased pressure on the PA forests. The PA authorities shared that the staff plan was approved in 1981 and was based on the requirement at that time. Since then the need for additional staff has risen but this issue has not been addressed adequately.
- Absence of a dedicated budget for staff training and skill upgradation. However, under the IEP there are funds for accomplishing this. Adequate training to staff has not been provided so far.
- Absence of a technical person for preparing estimates of minor engineering works and supervising them

Innovative Practices

- **Provision of inputs for Agriculture:** The needs of a large number of small and large farmers were addressed by providing them with inputs to improve their agriculture practices and increase their household income to reduce farmer's dependence on PA. This demonstrated to the farmers that the PA authorities are sensitive to their needs and won the confidence of the community with respect to IEP activities.

- **Construction of Game Proof Walls:** In the second Phase of IEP, the PA authorities undertook construction of a large number of game proof walls in many strategic locations near the boundary of the PA for preventing the entry of both wild animals in the farmlands, and cattle in the PA forests. This addressed the problem of crop raiding, which was a major bone of contention between the park management and villagers living in villages in the periphery of PA.
- **Development of natural water sources inside the PA:** In the extended Phase, the PA authorities have emphasized development of natural water sources inside the PA, and stop dams and check dams have been constructed by locating and developing natural springs. This has resulted in localized improved water regime and is proving as a useful management strategy for increasing the availability of water for wildlife, particularly during summers. Earlier, water was being provided through tankers.
- **Promotion of biogas plants:** The PA authorities have placed a special focus on installing a large number of biogas plants. A large number of households have been covered and more are proposed to be covered. This activity was publicized by the PA authorities, which convinced women beneficiaries to opt for biogas.
- **Introduction of anti-malaria plant.** A locally available herb chiraita (*Andrographis peniculata*), which has been traditionally used for prevention of malaria is being provided to villagers. It has been reported by the beneficiaries that the herb is quite useful.
- **Establishment of a grain bank.** A grain bank has been created from the Village Development Fund in order to meet the requirements of the villagers during drought years, and when the crop yield is low.

Lessons Learnt

- Microplan preparation at the project start should be done with caution and this exercise should be accorded adequate time. Hasty microplan preparation later poses constraints in its effective implementation, as happened in Pench (during Phase I). Revision of microplan at a later stage involves both time and money.
- Staff capacity building and specialized training should be completed in the first year of the project itself. Exposure of PA staff (Member-Secretaries) and EDC Chairmen should be adequately addressed by organizing exposure and study tours to other areas where similar project activities are under implementation. Postponing this towards project end does not serve much purpose.
- For building early trust among and between project beneficiaries and PA authorities, documents related to village ecodevelopment, such as microplans, should be made available in local language from the project start itself.
- Adequately empowering women beneficiaries has been a useful strategy in reducing dependence on PA resources. With skill building and training, the women members prefer to indulge in income generating activities rather than visiting PA for firewood extraction etc.
- Initial listing of families for inclusion in microplans should be done carefully and adequate time should be given to this task. Left out families in the same village divides the village community and is not conducive to post-project sustainability of the EDCs.

Recommendations

Environment Management Strengthening

1. Weed removal works that yielded good results should be monitored closely and selective weed removal should be undertaken to prevent re-emergence. Other critically weed-infested areas should be identified and subjected to weed removal. Weed removal should be carried out at least for three years continuously on one site to ensure long-term removal of weeds. Regular weeding also allows native vegetation to establish.
2. Construction of dykes should be promoted only after assessing their success in the post monsoon period. Check dams for conserving water inside the PA should be promoted wherever possible.
3. Habitat improvement works need to be promoted in the areas of these PA falling in the Chhindwara district, as not many works have been carried out. Efforts are required to curb rampant grazing and also other works like road improvement, construction of ponds inside the PA, check dams to enhance water regime and soil conservation are required to be undertaken in the Chhindwara district.
4. Water harvesting works that have resulted in significant improvement of habitat conditions in the PA should be continued. Adequate financial allocations should be made arranged for this, as once IEP is over, there would be a shortage of funds.
5. The PA authorities should focus on reducing and preventing grazing intensity by promoting purchase of improved breed of cattle, developing alternate pasture lands, wherever possible etc.
6. Inadequacy of staff, hampers effective implementation of approved management plan. Staff shortage needs to be addressed as early as possible by the State Government. Vacant posts of forest guards/beat guards should be filled up on a priority basis to ensure improvement in PA Management.

Monitoring Procedures

7. Documents, such as, VDF bank passbooks etc should be provided to the EDCs for safekeeping. Transferring important documents to the EDCs will increase the ownership sentiment and increase transparency, which would be a critical requirement for post-project EDC sustainability.
8. Regular monitoring and maintenance of Game Proof Walls should be carried out with help from the EDCs, as some of the GPWs have been broken to facilitate easy movement of villagers. The EDC need to be encouraged to identify the culprits and discourage such practices, as GPW prevent both raiding of crops by wild animals and entry of cattle in the PA.
9. Village EDCs should be motivated and encouraged to restart regular EDC meetings for monitoring the progress as well discussing and planning of interventions for post project period. EDC meetings in the post-project period would be critical for EDC sustainability.
10. EDC Presidents, Member-Secretaries and Executive Committee Members should be trained and equipped with skills for maintaining records pertaining to microplan implementation including accounts, EDC resolutions, minutes of EDC meetings. This would help in monitoring EDC activities in the post project period.
11. Monitoring of reciprocal commitments, as stated in the microplan, by the project beneficiaries is essential to ensure that IEP implementation continues to have a

positive impact on PA. Regular EDC meetings should be used to emphasize this to beneficiaries.

12. PA authority should try and bring resources from state government to provide financial support to EDCs in post project period for the sustainability purpose.

Other Recommendations

13. The PA authorities should strengthen the functioning SHGs and also encourage the earlier ones to regroup and restart their activities. These SHGs need to be tied up with other Government and Non-Government initiatives for their continuous growth and development.
14. The PA authorities should conduct a workshop in groups of EDC villages for disseminating the provisions of the VDF guidelines for their clear understanding. This will help the VDF management in the post project period.
15. The frequency of the visits of the senior PA officials to the EDC villages need to be increased, as the project is at a very critical juncture and is about to be closed. To encourage post project sustainability, such visits, would be very useful.
16. Group and community based activities have revealed good results. To assess and quantify the impact of these activities the PA authorities should engage the PA sociologist and ecologist for conducting social audit of the activities implemented under microplan investments. If possible, the help of other development agencies i.e., CARE and UNICEF (already existing in the area) should also be obtained for this purpose.
17. The Nature Interpretation Center building at Turia Gate should be completed at the earliest and the NIC should be made functional within the remaining project period.

PERIYAR TIGER RESERVE

Project Progress Status

PTR has utilized 97.61% of funds released (including revalidated amounts) during the project period (See Figure 29). A year-wise account of utilization of released and revalidated funds is given in Table 20 and Figure 30

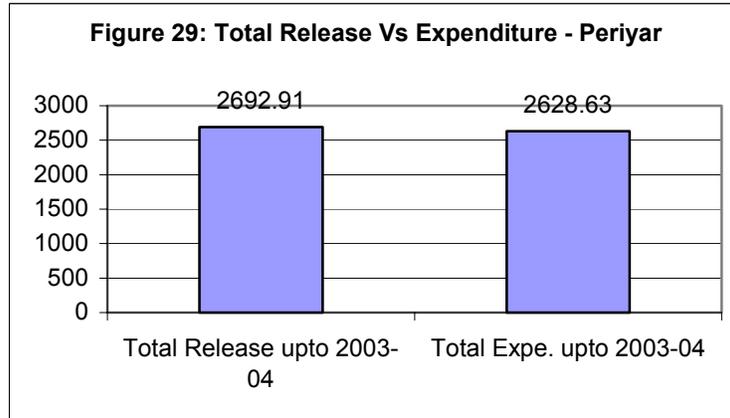


Table 20 – Year-wise funds utilization (Rs Lakhs)

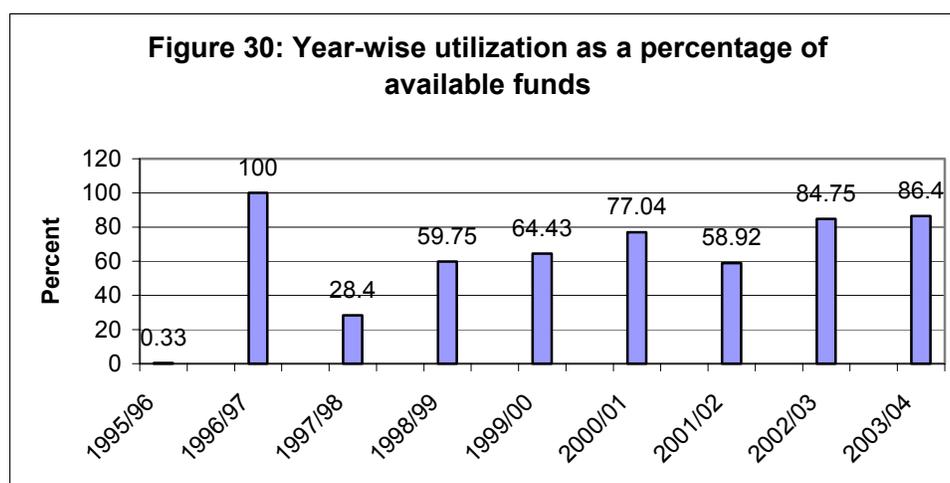
Year	Release	Expenditure	Revalidated Amount	% Utilization
1995/96	30	0.1	29.90 (1996/97)	0.33
1996/97	0	29.9	0 (1997/98)	100
1997/98	449.5	127.65	321.85 (1998/99)	28.4
1998/99	378.95	418.73	282.07 (1999/00)	59.75
1999/00	402.57	441.13	243.51 (2000/01)	64.43
2000/01	561.81	620.39	184.93 (2001/02)	77.04
2001/02	704.41	524	365.34 (2002/03)	58.92
2002/03	65.01	323	65.63 (2003/04)	84.75
2003/04	100.66	143.69		86.40
Total	2692.91	2628.63	1493.23	97.61

Source: Project Tiger Office

The overall funds utilisation stood at 97.61% of released funds (including revalidated amounts). Progressively higher investments in later years of project implementation

were able to overcome the low investments of initial year, resulting in good overall utilization of funds. Investments during 1998-99 to 2001-02 were able to derive substantial benefits for the PA. Expenditure until the last year (2003-2004) was good at 86.40%. In fact, expenditure during phase II and III have been substantially high.

A wide variation in funds utilization as a percentage of targeted funds is seen in the first three years of the project cycle, increasing from 0.33% in 1995-96 to 100% in 1996-97 and then declining sharply to 28.40% in 1997-98. Utilization of funds in the first year was low primarily as a result of inadequate infrastructure for project management coupled with little experience and poor understanding of the untrained field staff. The released funds were fully utilized in 1996-97 due to capital investments to develop the project management infrastructure - equipment and construction activities. The sharp drop in the following year was primarily on account of delays in release of funds and inadequate response to reciprocal commitments due to which the beneficiaries were unable to provide 25% contribution. Expenditures were largely in the form of small loan amounts given to the beneficiaries in the EDC villages. With gradual redressal of these constraints funds utilization increased progressively in the subsequent years going up to 77.04% in 2000-01. A slight reduction in funds utilization is observed for the year 2001-2002, which is primarily due to the fact that most of the infrastructure requirements had been completed and not many new tasks were started. Fund utilization again improved with the extension of the project and in Phases II and III, the PA authorities were able to consolidate the gains made in earlier years of project implementation.



The APO outlay for PTR for the year 2003-2004 was Rs 391.56 lakhs. This included both investment (amount spent on various project activities) and recurrent (salaries and O&M) costs. Whereas investments are funded by the Central Government Funds (Project Tiger Office), recurrent costs are met by the State Government funds. The following table provides details of budgetary allocations in the PA for the current year, which includes Rs. 76.73 lakhs as Staff Cost to be borne by the State Government and Rs. 31.03 lakhs as villagers' contribution.

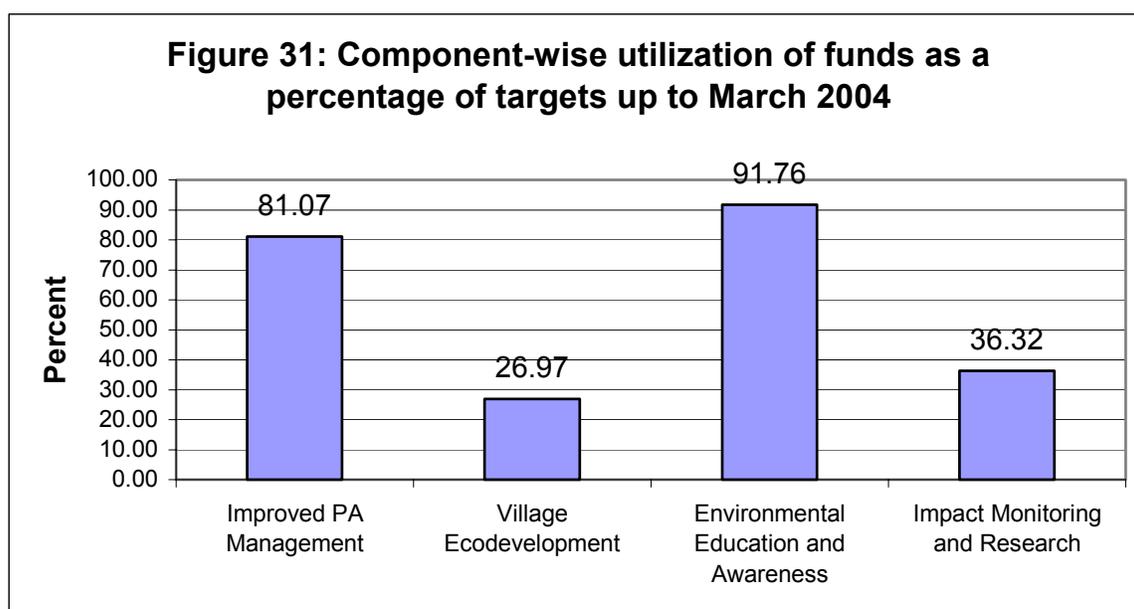
Table 21- Details of the budgetary allocations for the year 2003-2004

Table/ Activity	Total Cost of APO as restricted by World Bank cost tables (Component wise)			Central Government Share			Amount including the revaluated amount
	Investment Cost	Recurrent Cost	Total	Investment Cost	Recurrent Cost	Total	
Improved PA Management	34.56	103.83	138.39	34.56	27.1	61.66	49.33
Village Ecodevelopment Program	164.93	4.88	169.81	133.9	4.88	138.78	111.03
Environmental Education & Awareness Campaign	2.04	2	4.04	2.04	2	4.04	3.23
Impact Monitoring & Research	0	3.38	3.38	-	3.38	3.38	2.7
Total	201.53	114.09	315.62	170.5	37.36	207.86	166.29

Till March 2004, the PA had spent Rs.203.75 lakhs (including recurrent costs) as against the outlay of Rs.391.56 lakhs sanctioned in the APO (Table 12). Thus, till March 2004, the overall utilization of targeted funds was 52%, which is far below the utilization of approved outlay in the financial year ending March 2003. However, under the components Improved PA Management and Environmental Education and Awareness, the progress has been significant with the fund utilization above 81% and 91% of targeted expenditure respectively. As highlighted earlier in this report, the PA has benefited with the presence of a Nature Education Officer, who conducted a large number of workshops and organized nature camps. Under the component Impact Monitoring and Research, the funds utilization stood at 36% of targeted funds whereas under the component Village Ecodevelopment the funds utilization was very low at about 27% of the targeted funds. According to PA officials the low funds utilization with respect to Village Ecodevelopment is an underestimate as it does not take account all expenses under this head as (i) the EDCs have not as yet submitted the completed expenditure statements till March 2004 to the EDO, and some EDCs statements are not yet audited and therefore, not reflected in the financial progress till March 2004. According to the PA authorities, the actual expenditure figures will go up to at least 70% and above. Fig 31 depicts the component-wise percentage utilization of funds up to March 2004.

Table 22: Component-wise details of expenditure incurred for the year 2003-2004

Component	Financial Target (Rs lakh)	Expenditure up to March 2004 (Rs lakh)	Expenditure as % of Target
Improved PA Management	169.44	137.36	81.07
Village Ecodevelopment	203.24	54.82	26.97
Environmental Education and Awareness	8.50	7.80	91.76
Impact Monitoring and Research	10.38	3.77	36.32
Total	391.56	203.75	52.04



A component-wise performance with regard to fund utilization as a percentage of APO targets is presented below in Table 23.

Table 23: Phase-wise and component-wise utilization of funds as a percentage of APO targets

Components	Phase I	Phase II	Phase III
	% achievement	% achievement	% achievement
Improved PA Management	70.30	82.16	96.88
Village Ecodevelopment	37.56	90.14	55.42
Environmental Education and Awareness Campaign	66.08	71.25	91.76
Impact Monitoring and Research	18.65	76.50	55.59
Total	50.66	85.71	72.52

As can be seen from Table 23 above, phase II was most productive, as the PA authorities were able to utilize maximum funds in this phase. During phase II maximum gains were achieved under the component of Village Ecodevelopment, whereas in the other two phases (phase I and III) the component of Improved PA Management performed better. Utilization of available funds was very low for Impact Monitoring and Research in phase I but it picked up considerably in phase II and dropped slightly again in phase III. The PA authorities have consistently utilized sizeable funds for Environmental Education and Awareness during all the three phases.

Improved PA Management

Overview of project gains

Progress up to June 2003

- 573 ha Vayal improvement & 1346 ha. Vista line clearance.
- 39 staff quarters constructed; water supply provided in 20 staff locations .
- 7919 rock check dams constructed.
- 90 km of access track and 107 km of trek path improved.
- 10 mobile wireless sets and 85 handless wireless sets purchased.
- 98 FR/Fr./FG trained and 11 staff sent for study tours in the country.
- 15 motorcycles, 3 boats & 2 jeeps purchased.
- 27 wireless & 2 watch towers constructed.
- 180 pillars erected for interstate boundary demarcation.
- 3 prefabricated interstate protection camps established.
- Construction of patrolling route of 31 km.

Progress during 2003 – 2004

- Management Plan approved and being updated to incorporate New Ecotourism Initiatives and findings of Research Studies
- Purchase of equipment such as laptop computer, personal computer, printers, digital cameras, GPS, air conditioners and field equipment.
- Upgradation of guard stations.
- Maintenance and Improvement of Roads, Trekparks, Vestaline Clearance undertaken.
- Weed eradication work in an area of about 200 ha. was undertaken.
- About 150 k.m. of trek paths were formed in both East and West Divisions of the PA.

Site-specific strengths and shortcomings

Strengths

- Improved amenities to field staff such as toilets and drinking water supply were extended to staff locations.
- Routes for increased vigil and patrolling were improved. Construction of 31 km of patrolling routes in the PA was undertaken during the implementation of IEP.
- Construction of one prefabricated interstate protection camp shed and improvement of three interstate protection camp shed were done in order to increase vigil.

- Demarcation of interstate boundary with 180 stone pillars.
- PA management capacity enhanced with respect to mobility, transportation and communication:
 - 15 motorcycles, 3 boats & 2 jeeps purchased.
 - 26 wireless & 2 watch towers constructed.
- Appointing of consultants for sharing staff workload:
 - Ecologist, sociologist, economist, research officer
- Effective habitat improvement works undertaken along with regular and scientific monitoring:
 - Vistaline clearance undertaken in 1,346 ha.
 - Trek path improvement in the PA.
 - Grass cutting works in over 600 ha.
 - Construction and maintenance of EPT.
 - Vayal (grassland) improvement in 573 ha.
- Increased involvement of EDCs in protecting the PA.

Shortcomings

- Overburdened PA staff (Member-Secretaries).
- Issue of the location of a hotel inside the PA, and other tourism activities run by KTDC within the PA remained unresolved.
- During Phase I of IEP there was considerably low emphasis on alternative fuel saving devices to reduce PA resource use.

Village Ecodevelopment

Site-specific strengths and shortcomings

Strengths

- Microplans were prepared with assistance from consultants. Enhanced literacy levels of beneficiaries also facilitated microplanning
 - 72 microplans prepared covering 5,503 families. All microplans revised.
- Availability of microplans in local language.
- Appointment of a DCF level officer as the Ecodevelopment Officer, to exclusively look after IEP. This intervention helped in proper monitoring and consolidation of project gains.
- Reduction in firewood sale due to economic gains made by families through IEP assistance.
 - From 3,042 tons/year at project start to 997 tons/year in 2002
- Formation of EDCs based on their dependence on PA – village, professional and user-group EDCs formed.
- Improvement in the relationship between PA authorities and former poachers. The former poachers now function as anti-poaching patrolling squads.
- Formation of women SHGs (140) in the EDC villages.
- Setting up of Coordination Committees for group of villages implementing similar interventions
 - LPG distribution, eco-tourism, Sabarimala business, etc.

- Appointment of a DCF level officer as the Ecodevelopment Officer, to exclusively look after IEP. This intervention helped in proper monitoring and consolidation of project gains.
- Participatory monitoring exercise to assess the performance of EDCs have been started through workshops, seminars and skill formation training programmes.

Shortcomings

- Most of the activities initiated in the 72 EDCs are based on loans given to individuals, leaving little for creation of infrastructure at the village level.
- Realisation of loans may be difficult after the project period, as there will be reduced involvement of KFD staff.
- Joint patrolling and use of fuel saving devices are not up to expected level reflecting that beneficiaries are inadequately meeting their reciprocal commitments.

Social Impact

The implementation of microplan activities in PTR has impacted the lifestyles of the beneficiaries and has impacted the society in a number of ways. Some of the social impacts, as observed by us during our visits to EDC villages and through our interaction with the beneficiaries are listed below:

- 50% reduction in grazing pressure observed in PA forests.
- About 40-50% reduction in firewood extraction achieved by project beneficiaries, which was confirmed by almost 80% of them.
- Most (73%) beneficiaries preferred community-based works over any other category, as these works provide wage earning opportunities.
- LPG is most preferred device used for cooking, however, its distribution is limited to few families only.
- Almost 60% of the beneficiaries given LPG confirmed its regular use.
- Many of the beneficiaries, about 55%, also use firewood.
- Most beneficiaries (95%) reflected that relationship with the Forest Department has improved.
- There is good awareness regarding functioning of SHGs and members of SHGs feel empowered.
- As a result of women empowerment, there is an all women EDC at Periyar.

The social impact of Village Ecodevelopment component has been critically assessed and examined through a snap beneficiary survey of all the seven PAs, including the Periyar Tiger Reserve. As mentioned above, the beneficiary survey was conducted to understand the dynamics of the village ecodevelopment programmes in terms of its interface with PA conservation. The salient findings of which are as follows:

- Most of the microplans revised recently and copies made available to the EDC Chairmen.
- In the extended phase, SHG movement gained momentum.
- An increasing number of poor beneficiary families were assisted for income generation activities by providing loan facilities.

- Awareness levels of beneficiaries (including women) were increased considerably through awareness programmes (workshops, seminars, etc.). Women have reduced their visits to PA for fuel wood collection.
- Fencing of PA at some locations has been a good intervention, as it has helped in reducing crop raiding. Well development is also a preferred activity under village microplanning. Farming community is particularly satisfied with these activities.
- LPG is the most acceptable fuel saving device. The distribution of fuel saving devices in the form of LPG picked up after an EDC Confederation was formed and acquired LPG agency. However, un-affordability constrains its wide acceptance.
- Reduction in firewood extraction has resulted as a result of distribution of LPG, and loans for income generating activities. Most beneficiaries now buy firewood rather than extract it illegally. Majority of the beneficiaries reported that they are using firewood collected from their own fields where spices are grown.
- There has been some reduction in the intensity of grazing in PA areas. The survey findings reveal that cattle belonging to the beneficiaries visit the PA at least once in two weeks for grazing.
- There was an overwhelming response by project beneficiaries to IEP's plans of reduction of pressure on PA forests through reduced extraction of firewood. The respondents observed that pressure on PA in terms of fuel wood collection had reduced by 70% followed by reduction on grazing pressure (80%) and poaching by 86%.
- Contribution by project beneficiaries (25% contribution) is largely in the form of labour (56% respondents) followed by cash (only 19%). A sizeable percent (30%) did not respond to this question.
- Ecotourism related activities by professional group EDCs have gained momentum. Income generated collectively by these EDCs was nearly Rs 50 lakh.

Analytical Evaluation and Assessment

The pattern of project investment under the Village Ecodevelopment component was determined on the basis of analysis of investments in a sample of 10 villages visited during Phase III of IEP. Based on this , the average per family microplan expenditure in the EDC villages at PTR is Rs 14,670 on the various activities implemented in the villages. This is primarily because loans given to the EDC members were recovered fully and the money thus realized was again revolved as loan. This recycling of funds led to higher funds utilization.

Environmental Education and Awareness

Site-specific key strengths and shortcomings

Strengths

- Formation of 46 nature clubs in various EDCs.
- About 65 extension programmes were conducted for EDC members (both men and women).
- Appointment of a Nature Education Officer.
- Organization of nature camps for EDC members and other target groups, such as school children etc. Over 475 nature camps have been organized so far.

- Holding of awareness workshops for groups of EDCs. Over 50 awareness workshops were conducted by the Nature Education Officer for various target groups.
- Over 35 outreach programmes to different target groups were organized.
- Appointment Ecotourism officer.

Shortcomings

- Lack of focus on targeting tourists for creating awareness.
- Low visitation to the Nature Interpretation Center at Thekkady.
- Lack of effective programme development for NIC.

Analysis of activities initiated by PA authorities

The PA authorities are regularly conducting workshops, nature camps and awareness programmes to create environmental awareness to change the traditional mind-set of the people. The programmes also intended to focus on sustainability of the institutions and resources developed during Phase I, II and III of the project. The PA authorities had been successful in getting enormous support of the communities in completing and fulfilling the objectives of these programmes.

In the current year, PA authorities have conducted popular and successful technical workshops for park staff on anti-poaching and legal issues on which an expenditure of Rs.1.26 lakh has been incurred. Besides this, PA authorities have regularly conducted nature camps, awareness programmes. A total of 35 Nature Camps in Vallakkadavu Range and 46 Nature Camps in Thekkady Range were organized by PA officials to associate children and youth in conservation efforts. Also, 46 Nature Clubs have been formed in various EDC villages. In addition, capacity building programmes such as teachers training workshops, staff training programmes, academic forums, excursion programmes to educational institutions and seminar and workshops were conducted in the current year at a cost of Rs.2.9 lakhs.

In the last quarter, 25 training programmes were organized at EDC level. Several Nature Camps, awareness programmes, seminars, educational institution programmes were organized by PA authorities during this period at a cost of about Rs.6 lakhs.

Impact Monitoring and Research

Site-specific strengths and shortcomings

Strengths

- Large numbers of research studies (about 36) were awarded and completed.
- Twenty-two research studies were supported by discretionary fund for small research grants ten of which have been completed.
- Ecological impact monitoring of habitat improvement works undertaken by PA Ecologist and Research Officer.
- Completion of a few studies and timely availability of research findings for some areas of PA management.
- Quantification of positive impacts for resource utilization being undertaken.

- PA started participatory monitoring exercise through workshops and seminars to improve the performance of EDC beneficiaries.

Shortcomings

- Lack of adequate control over Sabarimala pilgrimage route (mainly controlled by Devasthanam Trust) leading to large-scale threats to the PA habitats.
- Late start of research studies, both long-term and short-term.
- Suitable findings / outcomes of these studies yet to be fully incorporated in strengthening PA management.
- Late institutionalization of monitoring of reciprocal commitments.

Analysis of activities initiated by PA authorities

A number of research projects were awarded during the first and the second extended Phase of IEP. Besides these research/consultancy projects, the PA consultants (Ecologist, Economist, Sociologist and Research Officer) have also carried out research on various aspects of PA management and village ecodevelopment.

About thirty-six research studies and consultancies had been completed so far by PTR. The findings of these studies are being disseminated to academic forums. So far 12 academic forums have been constituted, which have been immensely helpful in disseminating research / study findings to field level staff for informed decision making. About twenty-two short-term projects were awarded from discretionary funds to local talent drawn from regional and state universities and professionals from nearby areas of PTR. The PA authorities informed us that the duration of these short-term assignments ranged from 3 to 6 months. Ten of these studies had been completed.

As part of impact monitoring activities, a research and monitoring cell was established in February 2002 to monitor habitat improvement activities, pilgrimage, baseline studies, fire and regeneration. The cell has been helpful in ecologically monitoring the PA.

Baseline mapping of the PA, which was awarded to Kerala Forest Research Institute (KFRI) was completed. KFRI has also developed a three dimensional digital map of the PA. Distribution of maps up to range level was completed. All the maps of the PA were being prepared based on the available baseline information.

In the fiscal year 2003-2004, a budget of Rs.3.39 lakhs was provided for on going eleven consultancies under the subhead consultancies and contracts of the component Improved PA Management. So far only Rs.74, 000 have been utilized. All the on going consultancies, for which Rs.3.39 lakhs was allocated, should have been completed by now, and their important findings incorporated in the revised management plan. PA authorities should ensure the timely completion of on-going consultancies.

During the Phase III, the PA authorities conducted an exhaustive impact monitoring exercise with external help from NIRD, Hyderabad in May 2003. It was found that there was a positive impact as well as improvement of situation related to many issues that plagued the PA conservation and its resources. For instance, the Participatory Impact Assessment and situational analysis concluded that there had been a 95% reduction in poaching incidences, 75% reduction in tree felling, 90% reduction in Ganja cultivation,

98% reduction in debarking of cinnamon trees and 30% reduction in grazing incidences. Such results were quite encouraging and if the PA authorities could sustain this level of momentum of people's participation in conservation efforts, there could be further improvement in some of the problem areas such as grazing, fuel wood extraction and felling of trees.

Institutional and Financial Aspects of Project Implementation

Strengths

- **Designated Ecodevelopment Officer.** A post of the EDO has been created to ease the workload on the existing officers. Two Range Officers assist the EDO, who exclusively looks after eco-development related tasks.
- **Mechanism for associating professionals, as required, with the project to address specific issues.** The PA authorities have hired large number of contractual staff, e.g. the PA Ecologist, Sociologist and Nature Education Officer etc. The hired staff has been very helpful and has facilitated the implementation of the project interventions during the entire course of the project. According to the PA authorities, the sanctioned strength of the contractual staff is adequate.
- **A well-structured goal setting process.** Goal setting is participatory in nature and takes into account the requirements of the project beneficiaries. Micro plan goals are set in consultation with concerned EDCs. Micro plan Implementation Support Teams monitor micro plan targets. New targets are set after carrying out an assessment of the requirements at the field level. The APO goal setting is based largely on the management plan.

Inadequacies

- **Inadequate inter-departmental coordination mechanisms.** There is need to establish an effective system of coordination with other line departments, such as animal husbandry, agriculture and irrigation and tribal welfare etc. There is a PA level Coordination Committee, which has representation from the District Planning Committee. However, Coordination Committee has not been very effective in diverting funds from other sources to promote conservation of PA resources, similarly its positive impact on PA is yet to be seen.
- **Inadequate staff strength.** Though, there is a staff plan, the field staff for undertaking eco-development has been inadequate. For instance, in one case an EDC Member-Secretary has to look after as many as nine EDCs leading to immense pressure and high workload on the officer. Additional positions were required, as at present the staff component is almost complete indicating that the allocated strength at the field level is inadequate.

Innovative Practices

The implementation of IEP with its unique approach and concept has resulted in some new experiences and innovations. Some of these have already been disseminated to various project stakeholders through the transfer of knowledge workshop conducted by us during the third round of field visits in the extended Phase of IEP at each of the six PA implementing the IEP.

Some of the noteworthy innovations at Periyar are:

- **Creating confederations of EDCs:** The PA authorities have been able to bring more than 30 EDCs together for handling supply of LPG and form a Confederation of these EDCs. This novel approach has generated adequate community participation. More beneficiaries are opting for LPG since the agency is helping regular supply in difficult areas.
- **Tribal Heritage:** The Tribal Heritage EDC was formed recently (December 2003) with a total strength of 21 members. This is not covered under IEP and was set up on the initiative of the tribals belonging to Mannakudi village. As a result funding for EDC activities are generated by the villagers themselves. This is an encouraging sign an innovative practice started by the local communities.
- **Economic Assistance:** Most useful intervention was in the form of loans to villagers. These loans are interest free and are given in installments. The borrower has to return the entire amount before another installment is given to him/her. This has helped large number of villagers to generate income and reduce pressure on PA.
- **Formation of Professional EDCs:** Some EDCs have been created on the basis of resources used by them from the PA forests, for example, grass collectors EDC to reduce pressure on PA. and Ex-Vayana bark Collectors EDC has been formed by a group of individuals who were engaged in illegal poaching. Tribal Trekkers EDC has been set up to help the tribals in income generating activities and at the same time do PA protection work. SAAP EDC is doing useful service in the PA protection (fuelwood) and at the same time generates additional income through sale of food items to the pilgrims / tourists.
- **Vanitha Squad:** The Vanitha Squad, now named as 'Vasantha Sena' , has 98 women registered members. of whom 61 are regularly participating in volunteer activities and assisting the staff in strengthening PA protection. Every day a group of six members conducts one day patrolling in the sandal wood areas. The members are provided raincoats, leech soaks, hats, knives, etc. Day patrolling time is from 10 am to 5 pm. They submit reports about their days work.

Lessons Learnt

- Initial listing of families for inclusion in microplans should be done carefully and adequate time should be given to this task. Left out families in the same village divides the village community and is not conducive to post-project sustainability of the EDCs.
- All the villages falling in impact zone (adjacent to PA boundary) should be covered in future projects like IEP and all the villagers should be covered in the microplans.
- Capacity of the EDC Chairmen and executives should be strengthened before implementation process starts. The EDC Chairmen should receive some honorarium to compensate for wage loss for managing various activities (including meeting with officials). Equal participation (25% contribution) for both well-to-do and poor households is a good concept but the poor and landless could not take full advantage of IEP while the rich households could contribute and benefited much.

- The poor will continue to put pressure on PA.
- Support from specialized staff, such as sociologist, economist, education officer, etc. have speed up the micro planning process and helped in building a good rapport between PA authorities and village communities.
 - Staff capacity building and specialized training which was strengthened during the Phase II and III should have been completed in the first year of the project itself.
 - Copies of documents related to EDC records (pass book, registers, etc.) should be made available to EDC Chairmen. Their capacity to handle the records and monitor the progress (including CDF management) would help the EDCs become efficient in the post project period.

Recommendations

Environment Management Strengthening

1. Important findings of research projects and consultancies that have been completed should be incorporated in the revised Management Plan to improve PA management effectively. More research studies need to be awarded to complete any gaps in database regarding scientific management of the PA.
2. Adequate emphasis should be given to habitat/ecosystem restoration works to improve habitat quality. PA authorities should enhance opportunities to generate funds through state or central schemes for improving habitats. Habitat improvement works like desilting of water holes, vayal maintenance, *Lantana* eradication should be undertaken on a continuous basis. Weed removal needs to be carried out for at least three years on the same site to make positive perceptible changes in habitat quality.
3. Adequate steps should be taken to stop ganja cultivation in the reserve through efficient protection by regular patrolling and monitoring of the areas still under ganja cultivation.
4. The PA authorities should have effective control for keeping the Sabarimala trek pollution and plastic free. They should also conduct campaigns for creating proper awareness and motivation among the pilgrims (particularly children), regarding importance of biodiversity conservation.
5. As part of ecotourism activities, villages located near the PA may be encouraged to provide accommodation, transportation, and other infrastructure facilities to the visiting tourists, particularly foreigners. Steps initiated by the PA authorities to develop tourism facilities in the Periyar West Division are encouraging and it will reduce pressure on Thekkady region.
6. The PA authorities need to sustain awareness camps, workshops, nature clubs, which helped awareness building among staff and EDC members during the project period.

Monitoring Procedures

7. There should be effective ecological monitoring of Sabarimala pilgrimage to check its adverse impact on the PA biodiversity. The action plan for the management of pilgrims along traditional routes should be strictly implemented.

8. Village EDCs should continue regular EDC meetings for monitoring the progress, and discussing the steps to be taken for recovery of outstanding loans in the post-project period. Close monitoring of the CDF account will be required as it is used as a revolving fund.
9. For greater transparency, microplan activities should clearly be displayed in a prominent place indicating total cost of the microplan, main activities, total number of beneficiaries benefited and total expenditure incurred during the project period. Walls of school buildings, balawadi centres, health centres etc can be suitably utilized to avoid damage/ removal of the display boards, by the miscreants.
10. It would be critical to provide important documents, like bank passbooks and meeting registers etc to the EDC office bearers for monitoring the EDC functioning in the post project period.
11. Regular review meetings for the post project functioning should be held and a team of PA sociologist, economist and accountant should supervise participatory monitoring and social audit.
12. All the Chairmen should be supplied copies of the latest accounts (up to June 2004) so that they are appraised of the latest position. They should also be supplied photocopies of the bank pass books to enable them to know the actual amount available in both Project Fund and Community Development Fund Account. This will bring required transparency. In the absence of EDC Secretaries and NGIs (actually managing the EDC activities), the Chairmen and Executive Committee Members should be able to discuss latest financial status of their EDCs. This will help in post project monitoring of EDC functioning.

Other Recommendations

13. Adequate emphasis should be given to consolidation of gains and ensuring sustainability through establishment of linkages with other agencies in order to sustain project investment, approaches and community institutions.
14. For consolidation of gains, the PA authorities should undertake exercises in experience sharing through documenting best practices and making this available to various EDCs. This would facilitate and catalyse EDCs to adopt the best practices and thereby enhance their performance in the post project period.
15. The State Government should extend the provisions of its earlier GO for establishing the EDCs for the post project period.
16. The PA authorities should emphasize on publishing case studies / papers documenting the process achieved in the functioning of SHGs and circulate the same among other EDC and non-EDC villages. The villages, which have not been covered under IEP may also derive some benefit from the experience of other successful EDCs.
17. The PA authorities will have to identify and leverage funds from other sources in order to sustain some of the useful activities initiated through IEP funds once the financial support from the project ends.
18. The PA authorities should ensure effective measures for recovery of loans provided to large number of beneficiaries (irrespective of income status and purpose), lest EDCs are left with inadequate funds to maintain the assets created, and to manage activities during the post project period. The recovery of loans should be completed, before the end of extended Phase (June 2004). The amount realized should not be used as revolving fund for further loan till a policy is decided for utilization of VDF in the post project period.

19. For effective running of SHGs, linkages with banks and NABARD should be developed. The SHGs need marketing support. The produce of the SHGs (curry powder, spices, candle, ready made garments, craft, etc.) may be displayed in the shops run by the PETS EDC (Thekkady) and outlets of State Emporium and KVIC.

RANTHAMBHORE TIGER RESERVE

Project Progress Status

Funds for the PA are provided through budgetary allocation. Both state sponsored and centrally sponsored schemes cover the expenditure for the PA. There are both recurring and non recurring expenses.

Ranthambhore PA had utilized 93.35% of all released funds during the entire project period (see figure 32 and table 24).

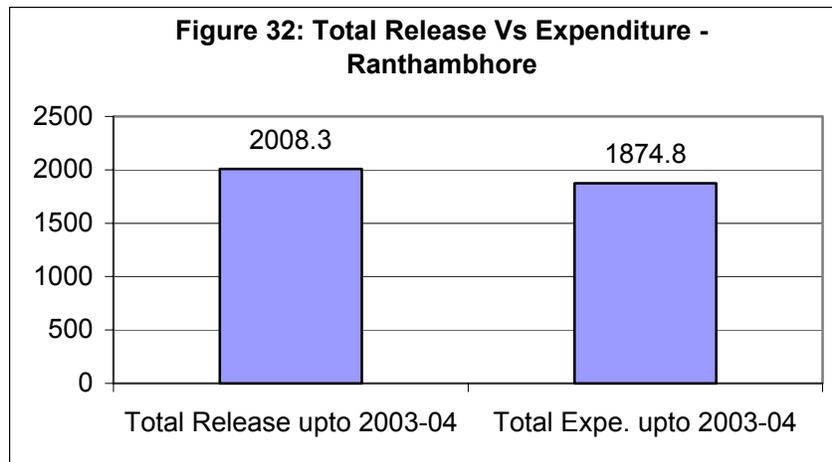


Table 24– Year-wise funds utilization (Rs Lakhs)

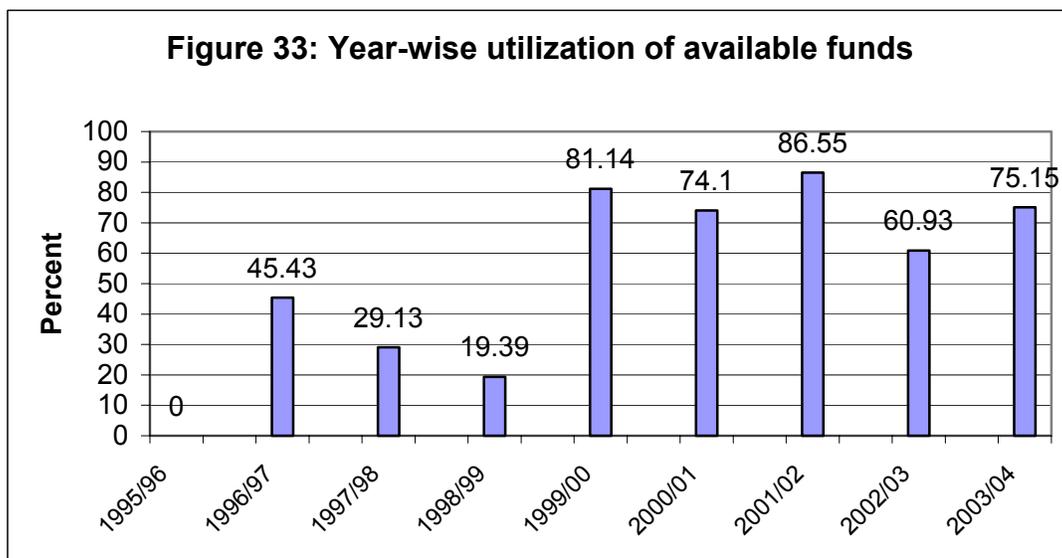
Year	Release	Expenditure	Revalidated Amount	% Utilization
1995/96	30	0	30 (1996/97)	0
1996/97	0	13.63	16.37 (1997/98)	45.43
1997/98	50	19.34	47.03 (1998/99)	29.13
1998/99	158	39.77	165.26 (1999/00)	19.39
1999/00	150	255.82	59.44 (2000/01)	81.14
2000/01	531.28	437.773	152.947 (2001/02)	74.10
2001/02	227.50	329.28	51.09 (2002/03)	86.55
2002/03	564.91	375.32	240.68 (2003/04)	60.93
2003/04	296.61	403.79		75.15
Total	2008.30	1874.80	762.81	93.35

Source : Project Tiger Office

As can be seen from Table 24 above and Figure 33 below, the record of funds utilization in the first four years was very poor. This was perhaps due to inadequacies in infrastructure, utilization mechanisms and administrative structures. With some

corrective measures taken to restore these problems, the utilization levels beginning 1999 - 2000 increased substantially. Investments were high in the last year of Phase I and in Phase II due to higher expenditure in the EDC villages. The investment levels were sustained during the third phase as well. During phase III, the PA authorities were able to incur sizeable expenditure from the available funds and were able to consolidate the gains made under the project. Some of the reasons for slow pace of project implementation and unsatisfactory funds utilization in the initial years are:

- Frequent transfers of ACF level officers that resulted in poor project management at the field level.
- Inordinately long time lag in approvals and release of funds from the State Government¹.
- Approvals for purchase of equipments were delayed.
- Non-approval of consultancies and NGO support for project activities.
- Beneficiaries were skeptical of joining the project and derive benefits out of it. This was due to their mistrust of the Forest Department.
- Drought years in RTR also resulted in low funds utilization.



The phase-wise funds utilized as a percentage of the APO targets is given below in Table 25:

¹ In the year 1997-98, after release of funds from Project Tiger Office on 25-6-1997 and 24-11-97, the State Government released the funds only in 15-10-97 and 21-2-98 respectively. Similarly, in the year 1998-99, the funds were released by the Project Tiger Office on 7-9-98 and 7-10-98, but the State Government sanction came only on 12-3-99.

Table 25: Component-wise funds utilization as a percentage of APO targets

Components	Phase I	Phase II	Phase III
Improved PA Management	35.69	85.29	98.72
Village Ecodevelopment	35.80	67.03	69.43
Environmental Education and Awareness	3.83	3.87	9.05
Impact Monitoring and Research	5.07	34.00	32.65
Total	32.02	62.33	66.17

As can be seen from Table 25 above, project performance in phase I was quite low, but picked up in the successive two phases. Improved PA Management performed exceedingly well in the final phase. In fact for all the three phases, this component outperformed other components. The component of Village Ecodevelopment could not deliver the expected outcomes in the first phase of IEP, as a result expenditure utilization of the available funds remained low. However, the component of Environmental Education and Awareness performed poorly in all the three phases indicating that the PA authorities had low absorption capacity for funds under this component. The component of Impact Monitoring and Research also performed poorly, although in second and third phase, it picked up slightly as compared to the first phase.

Table 26 gives the approved outlays for the RTR for 2003-2004 along with the amount released to the PA. This includes Rs. 39.00 lakhs as Staff Cost to be borne by the State Government and Rs. 108.97 lakhs as villagers' contribution.

Table 26: Details of the budgetary allocations for the year 2003-2004

Table/ Activity	Total Cost of APO as restricted by World Bank cost tables (Component wise)			Central Government Share			Amount including the revalidated amount
	Investment Cost	Recurrent Cost	Total	Investment Cost	Recurrent Cost	Total	
Improved PA Management	26.02	67.39	93.41	26.02	28.39	54.41	43.52
Village Ecodevelopment Program	628.27	2.58	630.85	519.3	2.58	521.88	417.49
Environmental. Education & Awareness Campaign	79.56	1.34	80.9	79.56	1.34	80.9	64.72
Impact Monitoring & Research	10.91	3.41	14.32	10.91	3.41	14.32	11.45

Table/ Activity	Total Cost of APO as restricted by World Bank cost tables (Component wise)			Central Government Share			Amount including the revalidated amount
Information Technology Equipment	0.11	-	0.11	0.11	-	0.11	0.11
Total	744.87	74.72	819.59*	635.9	35.72	671.62	537.29

Source: Project Tiger Office

The PA authorities at RTR had exhibited fairly good absorption capacity for funds, particularly for the components of Improved PA Management and Village Ecodevelopment, which are the two main components of the project. The funds utilization during the third Phase of IEP was a marked improvement over earlier Phases, particularly Phase I when funds utilization as a percentage of targeted funds remained low. Fund flow constraints was the main reason for low utilization in the earlier years of project implementation, coupled with the non-execution of some of the activities under different cost-tables. Component-wise financial targets and achievements are given in Table 27 below.

Table 27: Component-wise details of expenditure incurred for the year 2003-2004

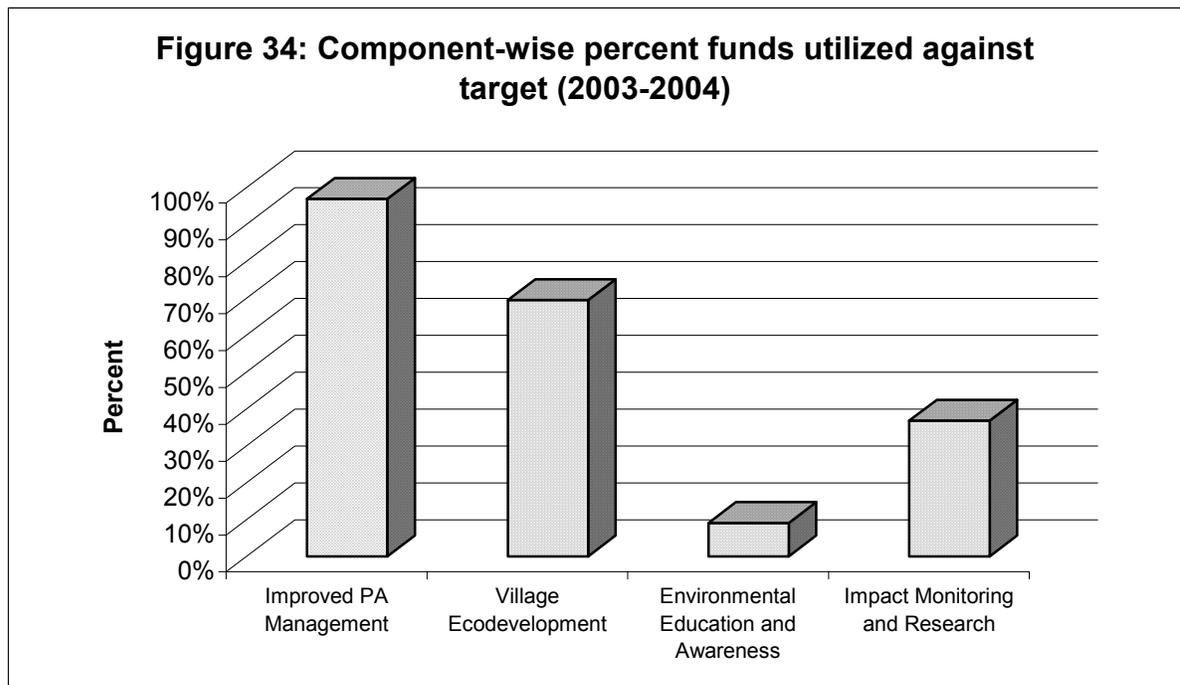
Component	Financial Target (Rs lakh)	Expenditure up to March 2003 (Rs lakh)	Expenditure as a % of Target
Improved PA Management	9517000	9221146	97
Village Ecodevelopment	63085000	43796387	69
Environmental Education and Awareness	8090000	731100	9
Impact Monitoring and Research	1256000	461446	37
Total	8194800	54210079	66

Under the Improved PA Management component, the PA authorities had utilized 97% of the allocated funds displaying a high absorption capacity for funds under this component. Expenditure under this component was incurred on activities like, survey and demarcation for construction of boundary pillars, improved amenities for staff, water conservation works and baseline mapping of PA.

For the component of Village Ecodevelopment, microplan investments were made for the completion of crop protection walls, distribution of LPG connections, development of village roads etc. For the year 2003-2004, the PA authorities utilized about 69% of the targeted funds. Fund utilization is currently going on and it is expected that by the month of June, when the project draws to a close, fund utilization under Village Ecodevelopment will enhance further.

Fund utilization under the component of Environmental Education and Awareness had remained dismally low on account of delayed construction of the proposed Nature Interpretation Center at RTR. This work has now been dropped.

For the component of Impact Monitoring and Research, some expenditure was incurred on developing support infrastructure facilities for the main field station. However, no amount was spent on research activities and for capacity building. This had limited funds utilization. Figure 34 illustrates the component-wise utilization of funds as a percentage of APO targets.



Improved PA Management

Overview of project gains

Progress up to June 2003

- PA Management Plan prepared and approved.
- 127 hectares of *Prosopis juliflora* removal undertaken.
- 47 staff quarters constructed including 34 FG; 11 Fr.; 2 RO quarters.
- 4 wireless towers and 7 fire watch towers constructed.
- 4 Four wheel drive jeeps and 4 motor cycles purchased.
- 67 staff personnel sent for study tours.
- Over 20 enclosures of 50 ha each established as fodder banks in KDS.
- More than 50 water harvesting structures (ponds) created; stored rain water lasted more than 2 months after monsoon.
- 50 boundary line pillars erected; more planned.

- 120 Hand sets, 30 mobile sets & 4 motor-cycles purchased.
- 13 tent-posts in core established for preventing illegal entry.
- Construction of Animal Protection Wall completed in several EDC villages (Bodal Barsukala, Khilchipur, Bhuri Pahari, Dungri, Khandar).
- Construction of protection wall & wire fencing near Jhumar Baoli in progress.

Progress during 2003 – 2004

- Management Plan printed.
- Survey and demarcation by erecting boundary pillars undertaken.
- Construction of Protection Wall (total 30 k.m.) completed.
- 8 traditional Water Points (Baories) revived.
- About 12 wells, bore-wells were dug up.
- Few saucers have been constructed.
- 500 mtr. of diversion channel constructed.
- 4 check dams cum causeways constructed.

Site-specific strengths and shortcomings

Strengths

- The PA authorities have managed to improve communication network, which has positively impacted PA patrolling and protection. This has been largely possible with the procurement of new equipment and installation of wireless towers.
- Constructing guard posts and barriers in strategic locations where grazing pressure is high on the PA has strengthened PA management. This has also boosted staff confidence.
- PA management has focused on augmentation of water sources inside the PA by undertaking creation of artificial waterholes and repairing of old and traditional step wells, popularly known as *baolis* at a fraction of cost of what it takes to develop such structures. The efforts are yielding positive results.
- New management system of regular monitoring of waterholes has started and waterholes registers have been introduced.
- About 13582 LPG connections have been distributed in EDC villages in order to reduce the extraction of firewood from PA forests. The use of LPG amongst beneficiary families is increasing.
- Specialized equipment, such as GPS, has been procured and put to use during wildlife animal census.

Shortcomings

- Insufficient tranquilizers and absence of a veterinary laboratory hampers animal rescue and treatment.
- Inadequate and untrained field level staff is a major constraint in improving PA management. Most of the staff is old and fresh recruitment is needed urgently.
- Absence of consultant ecologist for monitoring of ecological parameters of the PA.
- Specialized equipment, such as GPS, has not been procured.

Village Ecodevelopment

Site-specific strengths and shortcomings

Strengths

- Reconstitution of EDCs through holding of fresh elections, as per the recently issued GO indicating that EDCs function democratically.
- Creation of large-scale wage earning opportunities through the construction of crop protection walls during drought year provided the much needed relief to the poor and landless families.
- Relocation of village Padara on the wishes and request of villagers.
- Large number of beneficiaries covered under microplanning. About 14459 families covered under 62 microplans.
- More than 13500 Beneficiaries provided with LPG connections.
- Traditional '*Kulhari band*' panchayts strengthened.
- Encouraging activities like pond excavation, check dam construction in Kela Devi Sanctuary, which helped water retention and became very popular with the beneficiaries.
- Improvement in relationship with the villagers from an earlier hostile attitude to a mutually respectful one.

Shortcomings

- Non-availability of support from NGOs for facilitating microplan implementation in the EDC villages resulted in excess pressure on field level staff for undertaking village ecodevelopment.
- Reduced level of investments in microplan activities in the Core Division, as compared to the Buffer Division, particularly during the first Phase of IEP.
- Delay in finalization and subsequent approval of VDF utilization guidelines.
- Low emphasis by the beneficiaries on meeting reciprocal commitments. Patrolling of the PA by the project beneficiary families not being addressed adequately.

Social Impact

Some of the social impacts, as observed by us during our visits to EDC villages and through our interaction with the beneficiaries are listed below:

- There has been reduction in grazing due to recent efforts of building protection walls at many locations during the last two years.
- Reduction in firewood extraction is to the tune of 20-40%.
- A high 87% beneficiaries preferred community-oriented works over personal benefits and income generating activities.
- Landless and poor gets wage labour and thus prefer community works
- Pond development is the most preferred activity (80%).
- LPG is the most preferred cooking device, as confirmed by 87% beneficiaries.
- High cost of LPG is a major deterrent for its larger acceptance.
- Only 30% of respondents reflected that they still use wood as a fuel.

- 70% respondents confirmed that they do not visit PA for firewood extraction anymore.
- 98% respondents feel that relationship with the Forest Department has improved.
- Some beneficiaries (70%) were of the view that women have been empowered through microplan implementation.
- Women representation is still limited, though increasing.
- Acceptance of concept of SHG and its establishment is gaining momentum.

The social impact of Village Ecodevelopment component has been critically assessed and examined through a snap beneficiary survey of all the seven PAs, including the Ranthambhore Tiger Reserve. As mentioned above, the beneficiary survey was conducted to understand the dynamics of the village ecodevelopment programmes in terms of its interface with PA conservation. The salient findings are:

- Community-oriented works, like pond development, anicuts, crop protection wall are the preferred activity of the land owning families who derived maximum benefits from microplan implementation.
- Ecodevelopment interventions have been successful in reducing the pressure on PA with respect to firewood extraction and grazing.
- Average poor and landless preferred community-oriented works over individual benefits and income generating activities.
- Activities that had helped in generating alternate source of income have made a positive impact on the socio-economic status of the beneficiaries (both poor and land owning families).
- With respect to fuel saving devices, LPG is the most preferred. Wood is also used for cooking meals which include chapatti (Rotla and Rabri).
- Difficulty in procurement of LPG and its high cost are major hurdles.
- The number of villagers visiting PA for grazing has reduced to great extent (nearly 65%).
- The number of villagers visiting PA for fuelwood collection has reduced by 75%.
- Almost all beneficiaries are of the view that women empowerment has increased due to their representation in EDCs and setting up of SHGs.
- All the beneficiaries (100%) are of the view that relationship with the forest officials has improved significantly.
- Exposure visits for staff members to other PAs have helped them to adopt innovative approaches to ecodevelopment adopted in other PAs.
- The PA authorities have drafted an ecotourism strategy to reduce pressure on PA and provide tourism related facilities in the EDC villages.

Analytical Evaluation and Assessment

Expenditure on EDC villages ranged from improving agricultural support base for improving economic gains to provisioning of LPG for reducing firewood use. Most beneficiaries are satisfied with the kind of interventions made under IEP. Based on a sample of 10 EDC villages, the average per family microplan expenditure in the EDC villages at RTR is Rs 8,560 on the various activities implemented in the villages.

Environmental Education and Awareness

Site-specific key strengths and shortcomings

Strengths

- Procurement of equipment for using in awareness campaigns. Audio-visual equipment procured (TV, VCR, slide projector, overhead projector) were procured.
- The design consultancy for the NIC was approved during Phase II.
- Visit to PA for school children organized from time to time.
- Some environmental campaigns undertaken:
 - Tiger census methodology.
 - Project rationale – why save the tiger.
 - Park description and features.
 - Bird Fairs.
 - Tiger Mela.
 - Plantation Techniques.
 - EDC schemes.
 - Spot Painting Competition for young children.
 - PA cleaning.

Shortcomings

- The proposed Briefing Center under the APO (2001-02) will no longer be constructed and it is to be integrated with the Interpretation Center.
- Delay in starting the construction of the NIC. The design and site selection for the interpretation centre have been finalized but the construction has not started as yet.
- Absence of Nature Education Officers to undertake development of nature education programmes and regularly conducting them.

Analysis of activities initiated by PA authorities

There was an inordinate delay in starting the construction of NIC near Jog Mahal, although its design consultancy was approved and contract awarded during Phase II. Due to its repeated delays in starting the construction, it had been now dropped. The PA authorities, therefore, would have to source funds from some source other than the IEP for its construction. This is a case of missed opportunity. Funds were allocated in the APO for its construction and the work plan was approved and orders issued to the Rajasthan State Road Development and Construction Corporation for construction of the centre but, the same could not be materialize.

The performance of this IEP component was not satisfactory even in the earlier Phases of IEP. For example, only 3.87% of the targeted funds for 2002-2003 could be utilized under this component. The bulk of the approved outlay was parked for the NIC which was shelved. The PA authorities incurred limited expenditure under the sub-head of materials and publications.

There is a need to target the large number of tourists that come to RTR. Awareness programmes need to be conducted by professionals in nearby hotels and resorts and even film shows can be organized to generate awareness.

Impact Monitoring and Research

Site-specific strengths and shortcomings

Strengths

- Survey of baseline parameters has been contracted to National Remote Sensing Agency and work has started. New and upgraded baseline maps will greatly facilitate PA management.
- Ecological impact assessment has been done internally for four villages and the work is under progress in other EDCs.
- Regular monitoring of wildlife movement is being done along with monitoring of waterholes. A waterhole monitoring register has been created as part of the PA management practice.

Shortcomings

- Ten studies were approved by the PA authorities but were not undertaken in the absence of final approval of state authorities.
- Monitoring procedures were unstructured and ad hoc in the first Phase of IEP.
- Over 15 consultancies were processed but not awarded.
- Proposed research projects not yet launched.
- Regional planning workshop was not held.

Analysis of activities initiated by PA authorities

The state government did not approve any research studies or consultancies, although the PA officials had proposed 10 consultancies. Had the studies been undertaken, it would have helped in improving PA management effectively through collection of scientific data. Consultancy for baseline mapping were approved and awarded to Indian Institute of Remote Sensing, Dehra Dun at a total cost of Rs.9.76 lakhs.

During Phase II, the PA authorities had planned to award the following short-term research consultancies for a period of four months:

- Watershed programme: Micro watershed development for EDC villages.
- Undertaking socio-economic profiles of EDC villages.
- Building carrying capacity: Trainings of EDCs and SHGs for their sustainability.

The PA authorities had invited bids against tenders published in National Newspapers in March 2003. However, the process of awarding the contracts for the above-mentioned consultancies was not approved. The FD shared with us that the World Bank had not approved the consultancies, as World Bank's procurement procedures were not followed. Consequently, throughout the IEP (Phase I, II and III), no research consultancy was awarded.

Institutional and Financial Aspects of Project Implementation

Strengths

- Goal-setting process and microplan revision are participatory in nature. Goals for the village ecodevelopment are set after deliberating them with the beneficiaries. Microplan revision is undertaken only when the PA authorities receive an EDC resolution for revision.
- Structured conflict resolution mechanism. Most conflicts are settled at the level of DCF, who interferes if RFO and Member-Secretaries are unable to resolve the conflicts. The FD intervenes only if DCF is unable to resolve the matter.
- The PA has built a good communication network by investing in wireless sets. As a result, waterhole monitoring and reporting has become easier and these are now being institutionalized.

Inadequacies

- Absence of additional staff for implementing IEP. The existing staff was given the responsibility of implementing IEP along with their other routine tasks, particularly PA protection. This substantially increased their workload.
- The PA authorities have not hired contractual staff. The main constraints, as identified by the FD, in hiring of contractual staff were complex and time consuming process of hiring and lack of interest shown by the state government in hiring contractual staff.
- Lack of office staff and inability of existing office staff in understanding documents and correspondence in English, which causes delays and difficulties in managing project activities

Innovative Practices

Some of the noteworthy innovations at Ranthambhore, which we have shared with beneficiaries through Transfer of Knowledge Workshops are:

- **Implementing need-based works.** At the time of project start, construction of ponds and check dams for water conservation and harvesting were undertaken at Kela Devi Sanctuary and these have been found very successful
- **Strengthening *Kulhari Band (No axe) panchayats.*** The traditional *Kulhari Band* panchayats have been strengthened, which has helped reduction in fuelwood extraction.
- **Development of traditional *baolis* as water sources:** Old step wells (*baoli*) are being repaired at a fraction of the cost of what it takes to construct a new one. These traditional sources of water are likely to improve the water availability inside the PA.
- **Waterhole registers:** As part of habitat monitoring, the PA authorities have started monitoring of both natural and artificial waterholes in the PA on a daily basis. Data is being recorded as waterhole registers, which is a new management practice at RTR.

Lessons Learnt

- Initial listing of families for inclusion in microplans should be done carefully and adequate time should be given to this task. Left out families in the same village

divides the village community and is not conducive to post-project sustainability of the EDCs.

- Support services of NGOs and Consultants should be hired to facilitate project implementation and as far as possible such services should be contracted in the initial period of project introduction and implementation.
- Staff capacity building and specialized training should be completed in the first year of the project itself.
- All documents related to villages, such as microplans, should be available in local language from the project start and adequate copies should be made available to village communities for increasing transparency and dispelling any untoward notions carried by the project beneficiaries.
- Fund flow should be smooth for effective implementation of various project activities.
- Timely release of funds is a limiting factor in determining project performance. The State Government should provide proactive support for externally aided projects.

Recommendations

Environment Management Strengthening

1. Monitoring of waterholes and wildlife, and preparation of waterhole registers is a good management intervention and should be continued. The staff should be adequately trained for carrying out ecological monitoring of PA habitats.
2. The PA authorities should carry out feasibility and carrying-capacity study of other protected areas (for example, Sawai Mansingh Sanctuary), prior to developing plans for opening them for tourism. In this regard, stakeholder feedback should also be taken.
3. Since significant number of families, have been given LPG connections, the poor and landless families may be targeted for cheaper fuel saving devices, such as, pressure cookers, solar cookers, improved kerosene stove etc so that pressure of firewood extraction from PA forests is further reduced. Those families using LPG should be encouraged to use the pressure cookers.
4. In each village, some biogas plants should be introduced to families having sufficient cattle population. Results achieved will be a motivating factor for other families to adopt biogas. This would further contribute in reduction of firewood extraction.
5. Habitat improvement work needs to be speeded up. Weed removal works should be accorded priority by the PA authorities. There should be a planned long-term strategy for eradication of *Prosopis Juliflora*. In this regard, auctioning of weed removal works should be considered as a useful option for not only generating revenue but also encouraging EDCs to take up this work.
6. The issue related to inadequacy of staff needs to be addressed otherwise it will hamper the PA management and ecodevelopment activities. The State Government should assess the staffing requirement at RTR and endeavour to fill the existing vacancies, as this will have a direct and positive impact on IEP implementation and PA protection.

Monitoring Procedures

7. The EDCs should be encouraged to monitor use of LPG. To increase the popularity of LPG, the PA authorities need to correspond with gas agencies for ensuring regular supply to EDC villages or to at least the nearest motorable location.

8. Training and exposure component of the project is still weak and needs to be strengthened. A schedule of training/workshop and exposure visits should be developed and adhered to. Training in participatory monitoring needs to be provided to both the field staff and EDC members.
9. Impact monitoring, socio-economic and ecological studies should be approved by the state government and adequate budgetary allocations for the same should be provided for, as funds under IEP could not be utilized for carrying out research studies.
10. All the EDCs should be encouraged to undertake regular patrolling of the PA boundary and maintain patrolling registers. This will considerably improve monitoring of PA areas.
11. All the Chairmen and Executive Committee members should be trained in simple accounting procedures and advised to start activities like writing minutes of the EDC meetings. This will not only monitor EDC functioning but will facilitate EDC sustenance in the post project period.

Other Recommendations

12. There should be mechanisms to engage reputed developmental sector NGOs (BAIF, CARE etc) for capacity building and awareness building of EDCs and women SHGs for sustainability of the EDCs and SHGs in the post project period.
13. The PA authorities should ensure that guidelines and rules for utilizing the VDF amount are distributed to all EDCs for compliance. At least 50% of the VDF amount may be kept as a fixed deposit in Bank for long-term sustenance of EDCs well beyond the project period. Guidelines should be issued in local language.
14. The PA authorities should publish a gist of significant findings of the recently prepared report on Eco-dynamics of RTR and other Closed Areas for distribution in EDC villages as well as publish the economic gains of RTR in local newspaper for wider dissemination.
15. Formation of women SHGs should get highest priority. EDCs should consider giving loan to the SHGs for income generating activities. Men should also be encouraged to form SHGs. Tie-up arrangements with Banks and NABARD to make the SHGs viable and self-reliant should be arranged quickly.
16. For transparency of the accounting procedure and investments made, the same should be discussed in open forums. Actual investments made and the list of beneficiaries should be made available to all the EDC villages and discussed in GBMs, which will be treated as a tool of social audit exercise.
17. The EDCs located adjacent to the PA should be encouraged to develop ecotourism facilities to divert visitor pressure from the PA in the form of accommodation facilities, conducted tours, transportation by camel rides, camel carts, development of picnic spots, provision of snacks and tea, etc. Activities initiated in Ramsingh Pura (tourist spot) and Bhuripahari (Banasghat - tourist shelter), have tremendous scope of generating additional income.

POST PROJECT SUSTAINABILITY

The three phases of IEP have largely succeeded in realizing the set objectives and establishing the foundation for effective PA management to conserve biodiversity and increase opportunities for local participation in PA management activities and decisions. The project has also created institutional mechanisms, for example, Micro Planning, EDCs, VDF et al to reduce the negative impacts of local people on biodiversity, reduce negative impacts of PAs on local people, and increase collaboration of local people in conservation efforts. The IEP implementation has also generated extensive community support for ecodevelopment. These achievements notwithstanding, efforts are required to consolidate these gains, establish linkages with other agencies, and deepen the foundation and the institutional base to ensure their sustainability over the long-run lest the realized gains slowly wither away and fall by the road side after the project ends. For this, post-project sustainability including sustainable micro plan funding is critical.

Post-project sustainability requires development and execution of a sustainability strategy at six key levels, among others:

1. Policy
2. Legal
3. Institutional
4. Financial
5. Community
6. Microplanning

Policy: Post project sustainability would require an enabling policy environment to be in place. For example, a policy framework governing ecodevelopment and biodiversity conservation should facilitate (i) innovative revenue generation methods and retention of generated funds by the PA/EDCs, (ii) support to EDCs from FDA, (iii) establishment of Conservation Trust Funds, (iv) enabling EDCs to solicit funds etc.

Legal: An enabling legal environment is also critical for post-project sustainability. For this, it is important to examine some of the existing legislation, for example, the Indian Forest Act and the Wildlife Act, and identify those legal provisions that constrain introduction and implementation of measures directed at biodiversity conservation and ecodevelopment.

Institutional: Efforts at institutional sustainability should focus on strengthening the capacity of EDCs in areas of bookkeeping, resource management, asset management, and record keeping, among others. Equally important, the administrative structure and related processes need to be streamlined and appropriate mechanisms established to enable EDCs to efficiently discharge their responsibilities. For example, loan recovery system and structure should be strengthened to minimize non-recovery of loans provided by EDCs. Also, the EDCs should be empowered to access and leverage resources.

In addition to EDCs, the PA management should acquire skills in the areas of project monitoring and evaluation, community processes, and financial management, among others. The current financial framework of PAs is focused on implementing routine mandatory accounting systems and practices as applicable to the forestry sector. Post project sustainability would require development of mechanisms to (i) integrate financial

planning with plans and related strategies for PAs, (ii) realistically match financial budgets with availability of funds and get away from the current practice of setting financial targets on the basis of previous year's budget, and (iii) control, monitor, and manage expenditure. These suggested mechanisms should be instituted on a priority basis, as once the project is over, a large number of activities would require budgetary allocations for sustaining the gains derived from IEP. In addition to strengthening the financial management skills of PAs, it would be equally important to do so for EDCs as discussed above.

Financial: Given the current fiscal health of most states – and the Centre – and their attempts at fiscal consolidation, it is unlikely that the financial requirements for continuing the IEP activities after the project would be met in full by either the concerned state government or the Government of India. This implies that for post project sustainability PAs would need to develop innovative revenue generation methods, for example, from tourism, establishment of a Trust Fund, public-private partnerships, accessing “green investors” etc.

At the EDC level, resources can be generated through (i) leveraging resources from other government and donors' schemes, FDA, DRDA, private sector etc., through, for example, coordinating EDC activities with the relevant line departments of the state government i.e. tribal, health, education, women development, fisheries, Panchayati Raj and Cooperative, (ii) identifying and exploiting business opportunities, (iii) initiating community-based production and transferring all profits from community-based production to the Village Development Fund – this can be done *a la* use of Panchayat land for horticulture and for the production/cultivation of grass, which would provide the EDCs with a permanent source of income, (iv) promotion of income generation activities through SHG, (v) optimizing the VDF portfolio by putting aside 50% in fixed deposits and using interest earned for asset maintenance, transferring 25% to a revolving fund, and using 25% for ecodevelopment activities, and (v) creation of a revolving fund, among others.

Community: Post-project sustainability would require the community to develop a sense of ownership of the post project activities and thereby give its full commitment. This has already been achieved to a limited extent through IEP implementation but needs to be strengthened. For this, a number of measures would be required, for example, capacity development of the community, particularly in the areas of community participatory processes, finance management, entrepreneurship, and SHGs. This would enable the community to constructively interact with EDC functionaries, register their demands/requirements for inclusion in micro plans, maintaining community assets, and meet their reciprocal commitments. Also, women should be empowered for active participation in EDC deliberations, and microplanning activities. For this, the PA authorities should organize suitable training programmes for the women facilitators to equip them with better skill and technique for SHG formation, collection of subscription, membership fees, circulation of money within the members, its recovery, undertake small income generating activities and maintenance of accounts.

Microplanning: The current participatory approach should be strengthened. For this, the initial listing of families for inclusion in microplans should be done carefully, and attempt should be made to enlist all families in the village, as the excluded families would divide the village community, which would not be conducive to post-project sustainability of the EDCs. Also, it will be important to ensure equitable distribution of

benefits to people currently dependent on the PAs, especially tribals, women, and other disadvantaged groups. As concerns preparation of microplans, mechanisms should be developed to engage reputed developmental sector NGOs (BAIF, CARE etc.). To finance the microplans, the approach suggested above should be adopted.