

Chapter - 05

LAND USE PATTERNS AND CONSERVATION- MANAGEMENT ISSUES

5.1 Buffer Zone - Genesis:

The concept of Buffer Zones for Protected Areas emanated from the Project Tiger conservation philosophy. The guiding principle was to keep the core area free of all exploitation and human use, and to insulate it from the external influences by a buffer belt. While implementing this, the core area was freed of all biotic disturbances.

During the formative years, after the launch of Project Tiger, the buffer zone was merely treated as a forest belt surrounding the Protected Area or the core zone having a high degree of protection and conservation values. The focus was mainly on consolidating the core area and providing appropriate site-specific inputs for conservation. Subsequently, since the late eighties, the emphasis on managing the buffer zone as a multiple use area has gained momentum to achieve the conservation objectives.

The buffer zone can be visualised as a multiple use area zone or simply as an ecodevelopment zone. Eco-development is not just rural development; apart from economic development of indigenous people to a limited extent, it seeks to protect the Protected Area by eliciting the much-needed public support. By and large, it aims to generate the active cooperation of communities peripheral to Protected Areas by providing site-specific, well targeted interventions, so that the people appreciate this as emanating directly from the Protected Area in return for their commitment to Protected Area conservation.

Thus, buffer zones provide scope for inputs to sustainably absorb the human/ biotic impact, apart from enhancing the penumbral effect of the Protected Area on the core zone. Such zones need not have any special legal status, but should be areas delineated for managerial convenience to accomplish specific objectives.

5.1.1 Imperatives & Issues:

The imperatives for tiger conservation at present are:

- Managing the core conservation unit to foster a viable population of tigers
- Maintaining/ managing the buffer and fringe areas peripheral to the core for providing eco-developmental inputs to the stakeholders, and with their cooperation saving the peripheral forests as “habitat supplement”
- Saving tigers outside the Tiger Reserve/ Protected Area system by identifying the corridors and ensuring restorative inputs in such areas by integrating the Tiger Reserve/ Protected Area management plan in a larger regional management plan

Our forest management principles were essentially rooted in the earlier colonial policy of commercial exploitation. Gradually, for good, this is undergoing a change. It is being realised by one and all that meeting the needs of indigenous people and involving them in conservation and management are important to ensure the survival of forests and wildlife.

Plants, animals and human beings have co-evolved and are inseparable owing to their interdependence. Therefore, the ailments of forests also affect the wild fauna. This calls for a holistic view to redress the situation. Any strategy advocating a dichotomy would be myopic, since almost 70% of our wild fauna thrives outside the protected area system in regular forests.

5.1.2 Constraints:

There are several constraints which should not be lost sight of. Encroachments on forest lands, diversions of forest lands for non-forestry purposes, pressures of local people and their livestock, threats from migratory cattle, poaching and illegal trade in wildlife and their derivatives, insurgency, law and order problems, lack of land use policy leading to unwise land use outside protected areas, and shrinkage of village pastures are noteworthy.

Much has been said about the goal of balancing conservation and development. But how do we achieve this in a developing country like India? Here it becomes important that the public and private Institutions alike should reconcile conservation with sustainable and equitable development. We have site-specific, region-specific social, economic and natural resource problems that are not easy to solve. Since past experience has proved that there are basic contradictions between human needs and resource attributes owing to population pressure, our National Park Policy does not permit human habitations within. In a vicious scenario of overuse and abuse of surrounding areas, with no land use policy, this is imperative. However, the depleted status of general forest areas and the ever-increasing needs of locals may overwhelm the Tiger Reserve if the will and enforcement are weak, with no package of viable alternatives. Therefore, this problem has to be addressed at three levels, viz. local, community and regional.

The Existing Situation in the Impact Zone:

The impact zone (buffer) of the Tiger Reserve comprises of fringe revenue and forest villages, which exert biotic pressure on the peripheral PA resources. The dependency of these villages varies from collection of fuel wood and Minor Forest Produce, to livestock grazing, apart from the use of some water bodies. The impact zone has been delineated carefully after considering the various incidents of interface conflicts and assessment of dependencies of the surrounding indigenous communities on the protected area. The zone of influence extends in the area of 768.300 sq. kms.

5.1.3 The Profile of Impact Zone:

There are 99 villages located within the Zone of influence (ZI) out of which 51 fall in Seoni District and the remaining 48 villages are situated in Chhindwara District. All

these villages have also been selected for “Eco-development Programme”. The implantation of such programme has been executed through Eco-development committee (EDC) constituted for every village for effective supervision for the activities of such EDCs, the 99 villages have been put under the 5 Eco Units.

The following table contains the names of Eco units and the various EDCs covered under them: -

Table No. - 30
Eco units and the EDCs covered under them

S.No.	Eco-unit	District	No. of EDCs
1	Rukhad	Seoni	17
2	Kurai	Seoni	16
3	Khawasa	Seoni	18
4	Gumtara	Chhindwara	22
5	Bichhua	Chhindwara	26
		Total	99

The following list contains the name of the villages falling within the Zone of Influence and their distances from the boundary of PA.

Table No. - 31
Villages situated in the Zone of Influence (ZI)

S. No.	Eco-Unit	0 to 1 Km.	1 to 2 Km.	2 to 5 Km.	Above 5 Km.
1.	<u>Khawasa</u> (18)	Tikadi mal	Salhe	Mudiareeth	-
		Tikadi raiyat	Durgapur	Arjuni	Kothar
		Karmajhiri	Sarahiri	Kuppitola	--
		Barelipar	Kohka	Pachdhar	--
		Vijaipani	Telia	Paraspani	--
		Turia		--	--
		Awardhani		--	--
2.	<u>Kurai</u> (16)	Pindkapar	Setewani	Amajhiri	--
		Raiyarao	Mohgaon yadav	Nayagaon	--
		Kodajhiri	Vijaipani II	Harduli	--
		Potiya		Pipariya	--
		Jeerewada		--	--
		Khamrith	--	--	--
		Ambadi	--	--	--
		Satosha	--	--	--
		Khamba	--	--	--
3.	<u>Rukhad</u> (17)	Bhodaki	Tewani	Karhaiya	--
		Katangi raiyat	Airama	Panjara	--
		Murer	-	Ghatkohka	--
		Dhutera	-	Sindriya	--
		Patarai	-	Niwari	--

		Alesur	-	Mohgaon Sadak	--
		Aagari	-	Mohgaon titari	--
		Rukhad	-	--	--
4.	Gumtara (22)	Bordi	Thota mal	Bandhan raiyat	Banskheda
		Pathra khurd	Pathri	Rampuri	Khairanj
		Jamtara	Thota raiyat	Bandhan mal	Kanhasagar
		Naharjhir	Singardeep	Khamriya mal	
		Gumtara	-	Chargaon	
		-	-	Silota khurd	
		-	-	Silota kala	
				Silota raiyat	
				Davajhir	
		Kumbhpani			
5.	Bichhua (26)	Kokiwada	Surrewani	Dainy	Kanhargaon
		Pulpuldoh	Mohgaon khurd	Dongargaon	Khamarpani
		Doodhgaon	--	Kadhैया	Antara
		Thuepani	--	Kundai	Tekapar
		Chirrewani	--	Deori	Boriya
		Pathra kala	--	Bishanpur	Khursipar
		--	--	Marjatpur	Ghatkamtha
		--	--	Sawari	Dhoulpur
		--	--	Salhiwada	Dundaseoni
	Total	35	16	35	13

5.1.4 Population / Social Structure

The villages in Buffer zone are spread over in 3 tehsils. 51 villages are in Kurai tehsil in Seoni District, 43 villages are in Bichhua tehsil of Chhindwara district and 5 villages are in Chourai tehsil of Chhindwara district. The total population in 99 villages is 47905 of this 31675 population belongs to Schedule Caste and Schedule tribe community i.e. 66.12 % of total population.

Table No. – 32
Population in Buffer Zone villages

S. No.	Tehsil	Villages	Total Population	Population of SC/ST	Percentage of SC/ST
1	Kurai	51	22769	16063	70.55
2	Bichhua	43	18230	13148	72.12
3	Chourai	5	6906	2464	35.68
	Total	99	47905	31675	66.12

Comparisons between tehsils show that population of Schedule caste and Schedule tribe is highest in Bichhua tehsil of Chhindwara district i.e. 72.12 % & lowest in Chourai i.e. 35.68% of total population.

5.1.5 Land use in Buffer Zone villages

Land use in Buffer Zone villages is as following –

Table No. - 33
Land use Pattern in Buffer Zone

S. No.	Classification	Land (Hectors)	Percentage
1	Forest	10650.27	28.65
2	Agriculture Land	18417.92	55.12
3	Gauchar	3408.95	9.26
4	Uncultivable Land	2522.85	6.97
	Total	35364.33	100.00

Source : District Land Records

5.1.6 Land use in Buffer Zone villages of Kurai tehsil

Forest area in Kurai tehsil is more than that in Bichhua and Chourai tehsils. Forest boundary of revenue villages is 32.62 % of the total land boundary of villages. Land under agriculture is 47.75 % of the total land and is lower than the average for all the Buffer Zone villages.

Table No. - 34
Land use in Buffer Zone villages in Kurai Tehsil

S. No	Classification	Kurai Tehsil		Bichhua Tehsil		Chourai Tehsil	
		Land (in Ha)	%	Land (in Ha)	%	Land (in Ha)	%
1	Forest	6277.26	32.62	3559.33	27.42	813.68	25.90
2	Agriculture Land	9099.73	47.75	7633.60	59.96	1684.58	57.65
3	Gauchar	2124.82	11.04	1000.03	7.70	284.10	9.04
4	Uncultivable Land	1651.98	8.59	638.06	4.92	232.81	7.41
	Total	18241.94	100	12980.78	100	3141.61	100

Source : District Land Records

Land under forest is highest in villages of Kurai tehsil as compared to Bichhua and Chourai tehsils. Gauchar land on records is highest in Kurai as compared to other tehsils. However ground reality reveals that practically these lands are not utilized as gauchar lands.

5.1.7 Agriculture in Buffer Zone Villages

Agriculture Practices

Agriculture practices in Buffer Zone Villages are still in pre-modern stage. People in some villages are still depending on indigenous agriculture practices due to intensity of poverty. Big farmers of Chourai tehsil are implementing scientific agriculture

practices. Agriculture crop yield in Bichhua and Kurai is very low. Farmers in these tehsils are still following primitive agriculture practices.

The old traditional implements consist of hal or nagar, the common plough. This plough is used for breaking wasteland and for plugging fields of wheat and sugarcane. With minor improvisation it is also used for seed sowing. Another important tool is the bakhar, which is used in preparing all kinds of land and is a kind of bladed harrow. Tiffan is a three tined seed-drill generally used along the Maharashtra border. The Ghana or mill and the kadhari are used for sugar processing. With the progress in sugarcane cultivation the number of crushers in district has also gone up and particularly, the modern power driven crushers has increased substantially. Olped threshers, winnowers, fodder cutters, etc are among the other modern implements. But the threshers yield a rough bhusa and often the bullock are required to trample over it to soften the bhusa.

However, the iron plough an improvement over its wooden counter part is slowly gaining popularity. It may be due to the cheapness over the wooden plough as well as the fact that, it can be used in all kinds of soil and varying conditions. Among the other modern machinery the tractors have also increased substantially in numbers.

Agriculture practices are directly related with communities. Scheduled caste and Scheduled tribes living near to the forest are still using primitive technique of agriculture. Farmers who have large landholding and are educated are adopting scientific agriculture techniques in their fields. Scheduled caste and Scheduled tribes do not have large landholdings.

Table No. - 35
Agriculture Land in Buffer Zone Villages

(In Hectares)

S. No.	Tehsil	Agriculture Land	Irrigated Land	% of irrigated land
1	Kurai	9099.73	1501.46	16.50
2	Bichhua	7633.60	969.47	12.70
3	Chourai	1684.58	303.22	18.00
	Total	18417.92	2774.15	15.06

Source Agriculture department Seoni and Kurai

5.1.8 Crop wise distribution of Agriculture land

Agriculture production is mostly dependent on rains due to unavailability of adequate irrigation facilities in Kurai, Bichhua and Chourai tehsils. The major crops produce in area is as following –

Table No. - 36
Crop wise distribution of Agriculture land

S. No.	Grains	Area (Hectars)	Bichhua (%)	Chourai (%)	Kurai (%)
1	Dhan	1345	3.93	1.83	43.34
2	Wheat	5115	14.95	25.96	16.09
3	Jawar	5319	15.25	6.03	17.77
4	Makka	2144	6.27	12.02	5.41
5	Others	644	1.88	0.90	0.76
B	Cereals				
1	Chana	1425	4.16	7.65	6.92
2	Tuer	2054	6.00	3.54	2.66
3	Masoor	54	0.16		0.62
4	Others	758	2.22	3.26	7.01
5	Udad	1083	3.17	3.28	
C	Oilseeds				
1	Alsi	103	0.30	0.00	1.41
2	Groundnuts	985	2.88	2.30	0.64
3	Sarsaon	0	0	0	0.10
4	Soyabean	10695	31.26	46.43	12/52
5	Til	69	0.20	0.17	
6	Others	796	2.33	3.77	2.48

Source : Agriculture Department Seoni & Chhindwara

5.2 Social Economic Profile of Buffer Zone Villages

5.2.1 Social Profile

Caste Configuration

Gond, Pardhan, Bharia – Bhumia, Halba or Halbi and Baiger are the major tribes of the area. Gond represents 90% of the total scheduled tribes population in all three tehsils.

Table No. – 37
Caste configuration in Buffer Zone of PTR

					(In Percentage)
S.No.	Caste/Tehsils	Kurai	Bichhua	Chourai	% of Total Population
1.	Scheduled Tribes	62.69	60.71	29.06	50.82
2.	Scheduled Castes	7.60	11.40	6.61	8.53
3.	General	29.01	27.89	64.33	40.41

Source : Census of India

Mahar or Mehra, Cham and Basor represent the scheduled caste population in all three tehsils. Mahar, Chamar and Basor are more than 90% of the scheduled caste population of villages in the area.

Bramhins, Rajputs, Vaishyas, Patels (usually landowners), Kirars and Ahirs represent general caste of the project area.

5.2.2 Sex ratio

Sex ratio is defined as the number of females per thousand males. In Kurai tehsil sex ratio is 1010, which is above national average (927).

Table No. – 38
Sex ratio in Buffer zone of PTR

Tehsil	Population	Male	Female	Sex Ratio	Sex Ratio Below 0-6 year
Kurai	22769	11330	11448	1010	976
Chourai	18230	9207	9018	979	977
Bichhua	6906	3622	3484	962	837

Source : Census of India

5.2.3 Literacy

The overall Literacy rate in Buffer Zone Villages are 34.04% which is much below the National Average of 52.21%. The detail of tehsil wise literacy is given below –

Table No. – 39
Literacy in Buffer zone of PTR

S. No.	Tehsil	Male	Female	Person
1	Kurai	63.76	43.93	53.82
2	Bichhua	29.04	15.05	22.11
3	Chourai	35.53	15.01	26.20
4	Total	42.27	24.66	34.04

Source : Census of India & Socio Economic Survey

Economic Profile

5.2.4 Occupation

In agrarain economy land is a complex issue and it is more so in the case of tribal area. The percentages of tehsil wise cultivators is as following –

Table No. – 40
Percentage of cultivators in Buffer zone of PTR

S.No.	Tehsil	% of Cultivators
1	Kurai	60.32
2	Bichhua	58.77
3	Chourai	51.70
4	Total	58.75

Jowar, Rice, Kodan – Katki, Wheat, Sugar cane etc. are major crops of the region. Only Sugar cane is the major cash crop, others are predominantly crops of consumption.

The occupation pattern of the people in the area is as following –

Table No. – 41
Occupational pattern in Buffer zone of PTR

Occupation	Percentage
Agriculture	58.75
Labour	29.47
Services	1.66
Agriculture & Labour	10.56

Source : Primary Survey

5.2.5 Landholding Pattern

Land holding is of almost importance in agrarain economy. Socially it is a status symbol. Landholdings in the area have been divided into 5 categories as given below -

Table No. – 42
Landholding Classes

0 biogas	landless
1-15 acres	Mirginal
16 – 30 acres	Small farmers
31-45 acres	Medium farmers
46 and acres	big farmers

The distribution of different landholding classes among the population in the area has been presented below –

Table No. – 43
Distribution of landholding classes

Land Holding	Numbers	Percentage
Landless	129	22.18
1-15 acres	317	54.36
16 – 30 acres	94	16.23
31-45 acres	17	2.98
46 and acres	27	4.25

Source : Primary Survey by DALAL Consultants

Percentages of landless & landholders range of 1 – 15 acres is very high.

5.2.6 Land Productivity

Return from crops grown in this region is very low. Due to low return from land the intensity of poverty is very high. Income from other sources such as from, Minor Forest Produce is not sufficient to meet the daily needs of a family. The estimates of return from crop is as following -

Table No. – 44
Estimation of return from crop

Area	Production	Price/Quintal (1 Quintal 100 Kgs)	Total Value
Kodari – Katko 1 acres	2 quintals	Rs. 300	Rs. 600
Paddy – 1 acres	3 quintals	Not saleable in local market	
Jowar	2 quintals	Rs. 300	Rs. 600

Source : Primary Survey

The reason for low productivity is primitive or traditional practices of agriculture, and poor irrigation facilities.

5.2.7 Live Stock

Live stocks are a part and parcel of families in a predominant agrarian economy. Livestock helps the communities in agriculture and provides milk to meet basic needs. Tribal communities keep cattles and poultry. Buffaloes are normally found in household belonging to scheduled caste and general caste communities. The livestock per family in the Buffer Zone area is as following –

Table No. – 45
Livestock per family in the Buffer Zone

Livestock	Number	Per Family
Cattle	2055	3
Buffaloes	623	1
Goats	1564	2
Poultry	2560	3

Source : Primary Survey

5.3 Income and Expenditure

5.3.1 Income and Expenditure and Landholding size

5.3.1.1 Landless

Landless refers to persons who do not have land for agriculture. Their Income Pattern is as following –

Table No. – 46
Income Pattern of Landless persons

S.No.	Source	Income	Percentage
1	Cultivation		
2	Livestock	598	5.30
3	Labour	8400	75.80
4	Household industry	809	7.30
5	Services	133	1.31
6	MFP	1141	10.29
	Total Income	11081	

Source : Primary Socio – Economic survey

The Expenditure Pattern in Landless is as following –

Table No. – 47
Expenditure Pattern of Landless persons

S. No	Source	Expenditure	Percentage
1	Food	10773	85.41
2	Fuel	216	1.71
3	Clothing	685	5.43
4	Education	48	0.38
5	Celebration	505	4
6	Purchase of tools, fertiliser and Medicines	265	2.1
7	Labour Hiring	120	0.95
	Total Expenditure	12612	

5.3.1.2 Marginal Farmers

54.36% of the total households fall under the category of marginal farmers (land holdings between 1 to 15 acres). The Income Pattern in Marginal Farmers is as following –

Table No. – 48
Income Pattern of Marginal Farmers

S. No	Source	Income	Percentage
1	Cultivation	13118	74.00
2	Livestock	784	4.39
3	Labour	2781	15.6
4	Household industry	160	0.80
5	Services	89	0.40
6	MFP	962	5.39
	Total Income	17894	

Source: - Primary Socio-economic survey

The Expenditure Pattern in Marginal Farmers is as following –

Table No. – 49
Expenditure Pattern of Marginal Farmers

S. No	Source	Expenditure	Percentage
1	Food	12158	64.42
2	Fuel	181	0.95
3	Clothing	1794	9.5
4	Education	63	0.33
5	Celebration	743	3.93
6	Purchase of tools, fertiliser and Medicines	2573	13.63
7	Labour Hiring	1359	7.20
	Total Expenditure	18871	

Source: - Primary Socio-economic survey

5.3.1.3 Small Farmers

16.23% of the total households were under the category of small farmers (i.e. landholding between 16 to 30 acres). The Income pattern in Small farmers is as following -

Table No. – 50
Income Pattern of Small Farmers

S. No	Source	Income	Percentage
1	Cultivation	29134	89.5
2	Livestock	1335	4.1
3	Labour	1432	4.4
4	Household industry	163	0.5
5	Services	130	0.4
6	MFP	391	1.21
	Total Income	32585	

Source: - Primary Socio-economic survey

The Expenditure Pattern in Small Farmers is as following -

Table No. – 51
Expenditure Pattern of Small Farmers

S. No.	Source	Expenditure	Percentage
1	Food	20627	60.75
2	Fuel	269	0.79
3	Clothing	2086	6.14
4	Education	101	0.29
5	Celebration	1178	3.46
6	Purchase of tools, fertiliser and Medicines	5956	17.54
7	Labour Hiring	3735	11
	Total Expenditure	33952	

Source: - Primary Socio-economic survey

5.3.1.4 Medium Farmers

3.16% of the total households in villages were under the category of medium farmers (i.e.31 to 45 acres of landholding). The Income Pattern in Medium Farmers is as following -

Table No. – 52
Income Pattern of Medium Farmers

S.No	Source	Income	Percentage
1	Cultivation	45107	97.8
2	Livestock	922	2
3	Labour	0	0
4	Household industry	0	0
5	Services	0	0
6	MFP	92	0.2
	Total Income	46121	

Source: - Primary Socio-economic survey

The Expenditure Pattern in Medium Farmers is as following -

Table No. – 53
Expenditure Pattern of Medium Farmers

S. No	Source	Expenditure	Percentage
1	Food	22521	47.17
2	Fuel	294	0.61
3	Clothing	2502	5.24
4	Education	192	0.4
5	Celebration	1732	3.62
6	Purchase of tools, fertiliser and Medicines	10827	22.67
7	Labour Hiring	9673	20.26
	Total Expenditure	47741	

Source: - Primary Socio-economic survey

5.3.1.5 Large Farmers

2.37% of the total households come under the category of large farmers (45 biogas and more of landholding). The Income Pattern in Large Farmers is as following -

Table No. – 54
Income Pattern of Large Farmers

S. No	Source	Income	Percentage
1	Cultivation	69331	97.39
2	Livestock	926	1.30
3	Labour	641	0.91
4	Household industry	0	0
5	Services	143	0.2
6	MFP	143	0.2
	Total Income	71184	

Source: - Primary Socio-economic survey

The Expenditure Pattern in Large Farmers is as following -

Table No. – 55
Expenditure Pattern of Large Farmers

S. No	Source	Expenditure	Percentage
1	Food	33552	45
2	Fuel	298	0.4
3	Clothing	3430	4.60
4	Education	746	1
5	Celebration	2311	3.10
6	Purchase of tools, fertiliser and Medicines	16105	21.62
7	Labour Hiring	18044	24.22
	Total Expenditure	74486	

Source: - Primary Socio-economic survey

5.3.2 INCOME AND EXPENDITURE AND OCCUPATION CLASSES

The occupation pattern of peoples in the Buffer Zone villages is as following -

Table No. – 56
Occupation Pattern in Buffer zone

S. No.	Occupation type	% household
1	Agriculture	58.75
2	Labour	29.47
3	Service	1.22
4	Agriculture and labour	10.56

Source: - Primary Socio-economic survey

5.3.2.1 Agriculture

Most of the people in villages are engaged in agricultural activities (58.75% of the households). The Income Pattern of Agriculturist is as following -

Table No. – 57
Income Pattern of Agriculture

S.No	Source	Income	Percentage
1	Cultivation	31077	87.15
2	Livestock	1449	4.06
3	Labour	1866	5.23
4	Household industry	61	0.17
5	Services	78	0.21
6	MFP	1127	3.16
	Total Income	35658	

Source: - Primary Socio-economic survey

The Expenditure Pattern in Agriculturist is as following -

Table No. – 58
Expenditure Pattern of Agriculture

S. No	Source	Expenditure	Percentage
1	Food	21133	59.80
2	Fuel	281	0.79
3	Clothing	2043	5.78
4	Education	143	0.40
5	Celebration	1316	3.72
6	Purchase of tools, fertiliser and Medicines	6032	17
7	Labour Hiring	4387	12.41
	Total Expenditure	35335	

Source: - Primary Socio-economic survey

5.3.2.2 Labour

29.47 % of the total households in the villages come under this occupation category. The Income Pattern in Labours is as following -

Table No. – 59
Income Pattern of Labour

S.No	Source	Income	Percentage
1	Cultivation	73	0.63
2	Livestock	598	5.22
3	Labour	8956	78.23
4	Household industry	924	8.07
5	Services	144	1.25
6	MFP	752	6.56
	Total Income	1447	

Source: - Primary Socio-economic survey

The Expenditure Pattern in Labours is as following –

Table No. – 60
Expenditure Pattern of Labour

S.No	Source	Expenditure	Percentage
1	Food	10668	85.4
2	Fuel	210	1.68
3	Clothing	695	5.56
4	Education	47	0.38
5	Celebration	508	4.09
6	Purchase of tools, fertiliser and Medicines	259	2.07
7	Labour Hiring	111	0.9
	Total Expenditure	12498	

Source: - Primary Socio-economic survey

5.3.2.3 Services

1.22 % of the total household in revenue villages were under this occupation category. The Income Pattern in Services is as following –

Table No. – 61
Income Pattern in Services

S. No	Source	Income	Percentage
1	Cultivation	3903	35.81
2	Livestock	0	0
3	Labour	3286	30
4	Household industry	1708	15.67
5	Services	1854	17.01
6	MFP	165	1.51
	Total Income	10898	

Source: - Primary Socio-economic survey

The Expenditure Pattern in Services is as following -

Table No. – 62
Expenditure Pattern in Services

S.No	Source	Expenditure	Percentage
1	Food	7439	75.59
2	Fuel	148	1.50
3	Clothing	653	6.63
4	Education	90	0.91
5	Celebration	473	4.80
6	Purchase of tools, fertiliser and Medicines	924	9.39
7	Labour Hiring	113	1.14
	Total Expenditure	9840	

Source: - Primary Socio-economic survey

5.3.2.4 Agriculture and Labour

10.56 % of the total households were under this category. The Income Pattern in Agriculture & Labour is as following -

Table No. – 63
Income Pattern in Agriculture and Labour

S. No	Source	Income	Percentage
1	Cultivation	6832	47.63
2	Livestock	291	2.02
3	Labour	5882	41
4	Household industry	665	4.63
5	Services	159	1.10
6	MFP	514	3.58
	Total Income	14343	

Source: - Primary Socio-economic survey

The Expenditure Pattern in Agriculture & Labours is as following -

Table No. – 64
Expenditure Pattern in Agriculture and Labour

S.No	Source	Expenditure	Percentage
1	Food	10011	72.01
2	Fuel	171	1.23
3	Clothing	662	4.76
4	Education	62	0.44
5	Celebration	589	4.23
6	Purchase of tools, fertiliser and Medicines	1937	13.93
7	Labour Hiring	469	3.37
	Total Expenditure	13901	

Source: - Primary Socio-economic survey

5.3.3 Income and Expenditure of Scheduled Tribe

The Income Pattern in Scheduled tribe is as following -

Table No. – 65
Income Pattern of Scheduled Tribe

S. No	Source	Income	Percentage
1	Cultivation	12389	62.5
2	Livestock	420	2.12
3	Labour	5612	28.31
4	Household industry	0	0
5	Services	159	0.8
6	MFP	1243	6.27
	Total Income	19823	

Source: - Primary Socio-economic survey

The labour earn by working in Nagpur & Chandrapur cities of adjoining Maharashtra.

The Expenditure Pattern of Scheduled Tribe is as following –

Table No. – 66
Expenditure Pattern of Scheduled Tribe

S. No	Source	Expenditure	Percentage
1	Food	16191	78.75
2	Fuel	154	0.75
3	Clothing	1439	7
4	Education	82	0.4
5	Celebration	1069	5.2
6	Purchase of tools, fertiliser and Medicines	1573	7.65
7	Labour Hiring	51	0.25
	Total Expenditure	20559	

Source: - Primary Socio-economic survey

5.3.3.1 Income and Expenditure of Schedule caste

The Income Pattern in Scheduled caste is as following -

Table No. – 67
Income Pattern of Scheduled caste

S.No	Source	Income	Percentage
1	Cultivation	13245	66.62
2	Livestock	923	4.64
3	Labour	5006	25.18
4	Household industry	342	1.72
5	Services	38	0.19
6	MFP	328	1.65
	Total Income	19882	

Source: - Primary Socio-economic survey

Major household industry in this area is Bamboo works.

The Expenditure Pattern in Scheduled caste is as following -

Table No. – 68
Expenditure Pattern of Scheduled caste

S.No	Source	Expenditure	Percentage
1	Food	13310	65.13
2	Fuel	486	2.38
3	Clothing	732	3.58
4	Education	102	0.5
5	Celebration	466	2.28
6	Purchase of tools, fertilizer and Medicines	3721	18.21
7	Labour Hiring	1619	7.92
	Total Expenditure	20436	

Source: - Primary Socio-economic survey

5.3.3.2 Income and Expenditure of General Castes

The Income Pattern in General Caste is as following -

Table No. – 69
Income Pattern of General Castes

S. No	Source	Income	Percentage
1	Cultivation	20349	82.48
2	Livestock	1076	4.36
3	Labour	2265	9.18
4	Household industry	392	1.59
5	Services	229	0.93
6	MFP	353	1.43
	Total Income	24665	

Source: - Primary Socio-economic survey

The Expenditure Pattern in General caste is as following -

Table No. – 70
Expenditure Pattern of General Castes

S. No	Source	Expenditure	Percentage
1	Food	15377	60.82
2	Fuel	248	0.98
3	Clothing	1380	5.46
4	Education	121	0.48
5	Celebration	1001	3.96
6	Purchase of tools, fertiliser and Medicines	3977	15.73
7	Labour Hiring	3641	14.4
	Total Expenditure	25746	

Source: - Primary Socio-economic survey

5.4 Resource Dependence of Villages

The Buffer Zone villages in the vicinity of the PTR are dependent on the forests to meet with their requirements of firewood, timber, grass collection, grazing, and collection of minor forest produce etc. With the increase in human population the pressure on forests for obtaining natural resources also increases. Declaration of a forest area as a National park results in either the people losing the right to collect the resources or imposition of restriction on removal of resources. Such as Prohibitions/ restriction lead to illegal activities. They are also the main causes of the conflict between people and forest authorities.

To address to this issue it is necessary to assess the domestic needs of the people in respect of particularly, Firewood, timber, grass, minor forest produce etc.

5.4.1 Firewood

Dependence on forest for Firewood is quite high. Primary Survey by DALAL Consultants shows that 56.75% households use firewood for cooking purpose.

37.95% of the total households use Kerosene for cooking- Apart from being used in cooking, wood is also used for heat and illumination in winter. It was noticed that consumption of wood for domestic purpose is almost twice in winter than in summer. On an average, in summer, each household requires 1.5 Kg/per day/person of wood. In winter each household requires approximately 2.5 Kg / per day/ person of wood.

5.4.2 Shelter

Timber, bamboo, thatch material and stones which are all essential requirements for construction of houses, cattle sheds, fences and watch towers are collected from the forest. Houses in forest villages are relatively smaller. Most of the houses are tiled houses.

On an average, each household with an average size of 5 persons requires 2.44 m³ of timber for construction of house and about 0-91 m³ of timber for construction of other household items. In addition 50 to 60 bamboos are used for supporting thatch in the construction of a house. In forest villages 1,16 m³ timber is require for construction, including cattle sheds and agriculture implementation.

5.4.3 Fodder

Fodder is another important resource for which dependence on forest is almost complete. Both milch and plough cattle as well as beasts of burden are essential for the rural tribal economy. Fodder for these. animals essentially come from the forests.

The Livestock Grazing is as following –

**Table No. – 71
Livestock Grazing**

Place	Number	Percentage
Own premises	73	12.47
Village land	103	17.60
Forest	409	69.91

Source:- Primary Survey

The Average rates of per day feeding of the livestock is as following -

**Table No. – 72
Per day feeding rate of Livestock**

Category of Livestock	Concent rates (Kg)	Green Fodder (Kg)	Dry Fodder (Kg)
i. Crossbred (Milch)	2.75	20.00	6.00
ii. Females 3 years age			
(a) Improved Cows (Milch)	1.20	10.00	6.00
(b) Other Milch Cows and those not calved even once	0.125	3.50	3.16
iii. Males 3 years age	0.17	4.96	5.65
(a) Crossbred (young stock)	1.50	10.00	2.00
(b) Other young stock	0.016	1.58	1.47
Buffaloes			
i. Female 3 years age			
(a) Improved buffaloes	1.50	10.00	6.00
(b) Other milch buffaloes and that not calved even once.	0.41	5.72	5.08
ii Males 3 years age	0.11	6.57	5.43
iii. Males/ females 3 years age	0.01	1.59	1.64
Other Livestock			
i. Improved Sheep/goats	0.28		0.40
ii Horse & ponies	0.50	-	-

Source: - National Commission on Agriculture

5.4.4 Minor Forest Produce

Minor Forest Produce such as Tendu leaf, Mahua, Chirongi (Achar) are sources of Income to villagers of Buffer Zone. Income from minor forest product is seasonal income. Tendu leaf, Mahua and Chironji (Achar) are three types of Minor forest product found in Buffer Zone.

5.4.4.1 Tendu Leaf

Tendu leaf collection is done in the month of May - June. Almost all the families in Buffer Zone collect Tendu leaves. The Income of Households from Tendu Leaf collection is as following –

Table No. – 73
Income from Tendu Leaf

S.No	Income	No. of Families	% of Families
1	Up to 500	802	45.70
2	501 to 1000	692	39.43
3	1001 to 1500	221	12.59
4	1501 to 2000	40	2.28
	Total	1755	100.00

Source:- Primary Survey

5.4.4.2 Mahua

Collection of Mahua provides seasonal income to people from March to June. People who have Mahua trees in their land able to earn good amount through selling flowers and seeds of Mahua. Normally tree yields approximately 50 Kgs Mahua in a season. People sale Mahua at the rate Rs 4/ per Kg. The market conditions however determine the sale rate.

The Annual Collection of Mahua Seeds and Flowers is as following -

Table No. – 74
Annual Collection of Mahua Seeds and Flowers

People	Mahua Fruits/per family	Mahua Flower / per family
Landless	15.20 Kg	125 Kg
Land Owners with Mahua trees in their land	38.48 Kg	500 Kg

Source:- Primary Survey

In Participatory Rural Appraisal peoples revealed that those who have land are able to earn between Rs. 1500 to 2000 in a season. Peoples who are landless and collect Mahua from forest earn between Rs. 300 to 500 in a season. Income from Mahua also depends upon number of elderly persons in house, who are able to go in forest for Mahua collection. Each person is able to collect 1.5 to 2 Kg Mahua from forest. If it sold at Rs 4 / Kg it means each person will to earn Rs. 6 to 8 per day.

5.4.4.3 Chironji

Chironji (Achar) is another Minor Forest Produce collected in Buffer Zone. Collection of Chironji is normally done in summer Season. In season Chironji Fruits are sold in the market at the rate Rs. 30 to 40 per Kg. Normally each family collect 40 to 45 Kg of Chironji in one season. In the village having more forest in surrounding area quantity increase to 70 to 80 Kg. A family on an average earns Rs 1200 to 2000 through Chironji collections in a year.

5.5 Human – Wildlife Conflicts

Plant and animal emerged on the earth at the same time during the course of evolution. Long period of evolutionary development and process of succession produced complex and higher forms of both the plants and animals. Conflict between man and animal was not a part of man-nature complex until the 19th century's scientific development. Expansion of British Empire in the continents especially in tropical and subtropical region introduced and enhanced the exploitation of natural resources. This was the time when actually man-animal conflict started. Clear cutting of forests for non forestry purposes like agriculture, tea, spice and rubber plantation, establishment of human settlements at work sites and heavy extraction of timber for railways started quick shrinkage of forest cover and loss of habitat both at plain and hilly terrain.

Man encroached into the forest for three attractive amenities i.e. ample availability of (1) water (2) good quality land and (3) fodder.

From ancient times man knows that the forest is main reservoir of ground water. The forest cover available on its water shed regulates annual flow of river. Water is essential for agriculture so that agricultural lands are developed in and around the forest.

Humification of forest litter mixing with weathered parental rock forms fertile soil in due course. Slashing the forest stand on alluvial plains was the highly practiced measure to get best agricultural land from earlier times.

Cattle rearing for sustenance, is the oldest economic activity of man adapted by him, even before he started agriculture. Ample availability of leaf and grass fodder is essential and perhaps most important commodity accessed free of cost by man for cattle rearing and thatching huts, since earlier times.

Accelerated process of forest degradation resulted in loss of habitat and space for wild animals in last one and half centuries. Many species have been lost from the evolution chain due to vanishing habitats. Heavy grazing posed many competition over wild animals for their survival in terms of reducing forage and cover, sharing of water with cattle and man, disturbance due to constant presence of livestock and it's master, intentional fire setting and timber and NTFP extraction.

On the other hand people residing close to wild animal's habitat also suffer due to: -

1. Economic loss due to crop raiding by wild animals
2. Cattle depredation
3. Carnivores attack on human being
4. Transmission of diseases from wild animals.

In this man-animal interface conflict, wild animals are affected more adversely by activities of man in two ways -

(i) **Loss of habitat** due to conversion of forestland into non-forestry purposes.

(ii) Losses of animal species/communities due to indiscriminate hunting, till 1972. Purpose of hunting may be just for sport, for livelihood earning by some aboriginal groups, like; Pardhi, Moghia, Baheliya" etc. Lust to earn more and more by selling for expensive wildlife products, like: tiger bones; Ivory, 'Rhino's horn'; Tiger skin; etc. Killings of wild animals in retaliation due to crop raiding, cattle depredation and attack on human being.

Contamination of water holes by livestock also poses threat of epidemic diseases among wild animals. Almost all of the water holes, situated in peripheral area of Pench Tiger Reserve are vulnerable to livestock influx from nearby villages. The **presence of human being along with grazing cattle causes** great disturbance to wild animals.

Setting of fire is another major threat to wildlife.

These fires may be intentional or unintentional, but cause many direct and indirect adverse impacts. 'Mahua' and 'shed antler' collectors intentionally set fire to clear ground to make it easy to search antlers and pick dropping 'Mahua', flowers. Fires cause physiological and psychological shock to animals, sometime it may be fatal to diseased, injured and young animals, may destroy shelters of birds, rodents, small mammals and invertebrates and disturb entire food chain at particular sites. Burnt litter can be blown by wind and break the bio-geo-chemical cycle in terms of non-return of minerals to the soil. Soil moisture is lost due to high temperature and quicker drying of topsoil make it loose, which can be washed away from surface by first showers.

Extraction of edible fruits like 'Amla', 'Achar', 'Ber', 'Tendu', and honey by villager also reduces availability of food to certain wild animals, birds and insects. Presence of NTFP collecting people and their methods of collection also disturb the wild animals and vanish the source by cutting branches/tree, burning honeycomb etc.

It is observed that any human activity harmful to biotic or abiotic components at any level may be destructive to forest ecosystem in terms of disturbance to ecological cycles like- food chain; food web; bio-geo-chemical cycle etc. and cause short and long term adverse impacts in which some may be irreparable also.

Other facet of human animals conflict relation is suffering of human being due to wild animal is also considerable. People residing in close proximity of PA has following problems -

(i) **Crop raiding by wild animals** is very common and destructive threat to the villagers. Wild boar, Spotted deer, Blue bull and 'Sambhar' are the main crop raiders. Villagers residing at immediate fringe reported that there crop is being spoiled by wild animals. Villages like Tikadi, Karmajhiri, Murer, Bhodki, Alesur', Patrai, Dhutera, 'Raiyarao', 'Potiya', 'Vijaypani', 'Ambadi', 'Satosha', 'Turiya', 'Awarghani', Thuepani', 'Pulpuldoh', 'Singardeep', 'Gumtara', 'Jamtara' have crop raiding problems. PA management has constructed Game Proof Wall in the periphery of PA along the village boundary during last few years to protect the agricultural crop from wild animals. The incidence of crop raiding by Spotted deer, Blue bull and Sambar has come down drastically but still there is some problem of crop raiding by Wild boar. From this year PA Management has improve the design of Game Proof wall to make it more effective against Wild boar. The crop raiding causes discontent among the effected villages.

(ii) **Cattle depredation** is another source of discontent among people. Some time tiger, panther, Wild dogs and wolves enter into the surrounding of the villages and lift the cattle from the village or near by forest area. During the last six year 26 number of cattle lifting were reported by PTR and 129 by surrounding territorial divisions. The detail is given in following table -

Table No. – 75
Cattle Lifting in an around the PTR (2000-01 to 2005-06)

Animal Killed	Compensation paid by PTR	Compensation paid by Divisions
Buffalo	6	10
Cow	13	75
Goat	3	6
Horse	1	0
Ox	3	38
Total	26	129

The detail of Cattle lifting reported by PTR and other surrounding divisions is given in **Annexure No. – 32 (A & B)**.

(iii) **Occasional attacks on human being by wild animals** also develop a feeling of antagonism among the indigenous people residing near the forest.

The detail of attack on human being by wild animals is given in following tables -

1. Human being attack by wild animals – Reported by PTR (1986 - 2007)

Table No. – 76
Human beings attack by wildlife in PTR

S. No	Human Death/ Injury	Animal	Compensation paid by PTR
1	Death	Tiger	2
2	Injured	Bear	2
3	Injured	Panther	1
4	Injured	Wild boar	1
5	Injured	Tiger	6
		Total	12

2. Human being attack by wild animals – Reported by Adjoining Territorial Divisions (1996 - 2005)

Table No. – 77
Human beings attack by wildlife in Adjoining Territorial Divisions (1996 - 2005)

S. No.	Human Death/ Injury	Animal	Compensation paid by Divisions
1	Death	Bear	1
2	Injured	Bear	9
3	Injured	Chital	1
4	Injured	Jackal	5
5	Injured	Langur	2
6	Injured	Panther	5
7	Injured	Wild boar	23
		Total	46

The detail of attack on human being by wild animals is given in **Annexure No. – 33 (A & B)**

5.6 Assessment of inputs of line Agencies/ Other Department -

Development programmes going on in districts are broadly of two types Poverty alleviation programme and economic development programmes. Poverty alleviation programmes are for uplifting economic status of individual or communities living below poverty line. Development programmes are not directly focusing on individuals or communities but are benefiting indirectly by providing employment, developing infrastructure, improving agriculture production etc.

5.6.1 POVERTY ALLEVIATION PROGRAMMES

Buffer Zone villages in vicinity of Pench Tiger Reserve are having predominant tribal population. Data collected from Kurai, Bichhua and Chourai Janpad Panchayat reveals that 49.20 percent household in Kurai tehsil, 56.78% household in Bichhua tehsil and 43.25 percent household in Chourai tehsil are living Below Poverty Line (BPL) as defined by Government of Madhya Pradesh.

Documentation of all poverty alleviation programmes being implementation in Buffer Zone villages is a difficult and time-consuming task. We have selected some poverty alleviation programmes, which are focusing directly on individual. We selected programmes of Zilla Panchayat, Social welfare department and Agriculture department and have tried to assess their status in Buffer Zone villages

5.6.1.1 Programmes of Zilla Panchayat

1. Swarn Jayanti Gram Swarojgar Vojana (SJGSY),

The main Objective of this Programme is to provide grant and loans to families living below poverty line. In this Programme grants and loans are given for selected activities to individual and self help groups formed in villages and clusters Financial assistance is given in such a way that after repayment of loan; self-employed should earn minimum of Rs. 2000/ per month-Eligibility of Beneficiaries.

2. National Rural Employment Garanti Scheme (NREGS)

In this scheme there is provision to give employment to a family for 100 days employment in a year. In this scheme following individual and community based works has been taken.

1. Individual Beneficiary Oriented -

Table No. – 78
Individual Beneficiary Oriented Works

S.N.	Name of Sub Scheme	Works
1	Kapil Dhara	1. New Well 2. Khet Talab 3. Masonary Check dam/Stop dam RMS 4. Small Tank
2	Nandan Phalodhyan	Plantation of Horticultural species
3	Bhumi Shilp	1. Land Development 2. Contour Bund 3. Field Bund
4	Resham	1. Plantation of Mulberry 2. Silk Production

2. Community Oriented -

Table No. – 79
Community Oriented Works

S.N.	Name of Sub Scheme	Works
1	Shailparn	1. Contour trenching, Gully plugging, Loose Boulder Check Dam, Construction on barren hills 2. Plantation on barren hills
2	Vanya	Plantation of host plant Arjun & Saj for tasar silk worm

3. Sampuran Gramin Rojgar Yojna (SGRY) –

This scheme to provide additional employment, food security and to improve the quality of nutrition. In this scheme soil and moisture conservation, small irrigation, renovation of drinking water source, augmentation of water table, improve the tradition sources of water, removal of silt form rural tank, pokhar, rural approach road, trench construction and forestry works will be taken on priority basis. In addition to, other works like road leading to school, Hospital, community center, Panchayat building and local market places will be developed.

4. Indira Awas Yojana

The objective of this programme is to provide financial assistance for construction of houses to homeless families living below poverty line in rural area.

5. Food for work Yojna –

This scheme is implemented to provide - additional wages and employment, food security, development of permanent community, social & economical infrastructure in rural areas.

5.6.1.2 Programmes of Social Welfare Department

Social welfare department of Madhya Pradesh government is implementing programmes like leprosy clinic in rural and urban areas, hostels for tribal girls and boys, Gaon Ki Beti Yojna, Vivekanand Group Insurance Scheme and other programmes providing direct benefits to people. Integrated Social Security Pension programmes is well known programme of this department Parent implementation agency of this programme is social welfare department but due to implementation of 73rd amendment of constitution Government of Madhya Pradesh had given power to Panchayats for selection of beneficiaries.

1. Integrated Social Security Pension

Integrated Social Security Pension programme is sponsored by state and central government. This programme provides to give Rs. 150/ per month as pension to senior citizens persons or old age persons and widows who do not have other source of income.

5.6.1.3 Programmes of Agriculture Department

Agriculture Department of Madhya Pradesh has around 30 programmes like integrated grain development programme, Tilhan Dalhan avam Makka ki Akikrit Yojna, Ganna development scheme, to improve agriculture production in the state. There are 7 core programme and others are extension programmes.

1. Improved Seeds Programmes

In this programme the department provides improved seeds to all farmers on subsidy rates.

2. Surajdhara Programme

This programme is only for SC/ST/Small Marginal farmers. In this programme. Agriculture department provides pulses / oil seeds to farmers on 75% subsidy. Seeds are provided for 1/10-hectare area.

3. Annapurna Programme

Beneficiaries' eligibility criteria is same as for Surajdhara programme, but in this programme department provide only seeds of cereals.

4. Culture Distribution Programme

Continuous use of chemical fertilizers adversely affects the productivity of land. To encourage use of Bio-fertilizers, Government gives subsidy of Rs.4 on every pack of 150 gms of bio-fertilizers for all farmers.

5. Modern Agriculture Implementation

To encourage use of Modern Agriculture Implement Government provides 50% subsidy directly to the farmers on purchase.

6. Sprinkler Set Distribution Programme

This programme is also for all farmers. In this Government provides 50% subsidy to farmers belonging to SC and ST Communities, Special preference is for women beneficiaries. Farmers belonging to other castes are eligible for 35% subsidy

7. National Biogas Project –

To encourage and install the other sources of energy and high quality fertilizer this programme is going on for SC/ST, small marginal farmers, landless, laboures and for general class farmers who are eligible. Beneficiaries are selected by Agriculture Development. There is a subsidy of Rs. 3500/- for SC, ST, Small, Marginal, Landless, laboures & Rs. 2700/- for other farmers.

5.6.2 INFRASTRUCTURE DEVELOPMENT PROGRAMMES

5.6.2.1 Fisheries department

Fisheries department is responsible for promotion of pisciculture in district. An Deputy Director heads the department in the district. Fisheries department implements programmes through committees and fisheries societies formed in villages. Presently fisheries department of Chhindwara and Seoni district are implementing improved seeds programme of fishes.

5.6.2.2 Irrigation department

Irrigation department undertakes works for enhancement of irrigation facilities for agriculture in the district. Department had formed irrigation Jal committees in villages for optimum utilization of available irrigation source in district. At present Jal committees are active in Chargaon, Nayegaon, Khamarpani, Surewani Buffer Zone villages.

Irrigation by well is much higher than other source. In Chourai 10699 wells and in Bichhua 3315 wells are under utilization for irrigation. It reflects that ground water table is high in Chourai as compared together tehsils. In Chorai total 38.41 % of irrigated land is irrigated by wells and the Bichhua 19.81% irrigated land is irrigated by wells. In Kurai 42% area is irrigated by wells.

5.6.2.3 Public Works Department (PWD)

Public works department undertakes works related to construction and maintenance of Government assets like road, community building, Lakes, public toilets, rest house etc. This department also executes works proposed through MP and MLA funds as planned by District Planning Committee.

5.6.2.4 Public Health Engineering Department

Public Health Engineering department executes drinking water supply schemes in rural and urban areas of district. This Department also maintains Hand pump installed in villages for drinking water purpose.

5.6.2.5 Industries Department

Chhindwara district is in C category of industrialization. Minerals based industries are possible in district due to rich minerals deposits. Industrial Estates in district are established in Parasia, Chandamata and Chhindwara. Seoni district is industrially backward as compared to Chhindwara and other districts of the state Some small-scale industries are working in Chhapara block of the district. Recently one unit of Baidyanath group has been established in Seoni block.

5.6.2.6. Khadi and Village Industries

Khadi Gram Udhog Department of Madhya Pradesh Government implements programmes for promotion of cottage industries in the state. Department gives loan to individuals for establishment of cottage industries in rural and urban areas.

5.6.2.7 Madhya Pradesh Mineral Development Corporation

Chhindwara district is very rich in mineral deposits. It is one of the major Manganese producing districts of the country- Coal, Manganese and Dolomite mines in Chhindwara and Seoni districts are situated in Parasia, Sausar, Tamia, Chhapra, Lakhnadoun blocks of the districts, which are far away from Pench Tiger Reserve.

5.6.2.8 Veterinary and Animal Husbandry Department

Animal Husbandry has become a prominent sector for generating employment and income to the rural people, Specifically the poor. The activity offers means of supplementary income to families of the cultivators in rural areas adds to the economic growth of the district as well as create employment opportunities in rural areas.

5.6.2.9 Rajiv Gandhi Watershed Mission

This programme is implemented by Zilla Panchayat The main work of the programme is watershed treatment.

Activities going on under this programme are formation of self-help Groups, for Construction of Stop and Check Dams, Soil and Moisture Conservation and Social forestry works.

5.7 INFRASTRUCTURE & SERVICES

Infrastructure Development is a basic necessity of an area. It is the responsibility of Government to provide these facilities to their citizens. Economic development of an area is dependent on status of Infrastructure and services. Investment in Infrastructure and services gives benefits in long run. It provides base to develop economic activities in a region. The economic development if not done with due care can lead to unsustainable development which can hamper the planning process in long term.

In this context, in the India Eco-development project emphasis has been laid by the funding agency to integrate PA's conservation goals in the large-scale landuse planning initiatives. To attain this, it is important to carry out inventory of local and regional activities including the development program in the vicinity of the PA i.e. the Eco-development villages. The objective of this is to ensure that the activities which undermining the bio-diversity conservation goal and eco-development strategy, are not encouraged while the activities which are beneficial for achieving the state goals are promoted.

5.7.1 INVENTORISATION APPROACH

Detailed inventory of Infrastructure was done. For this data was collected on Road, Drinking water, Irrigation, Hospital, Schools, Public Distribution Shops, Post & Telegraph and Market place. Data was collected from following departments in Seoni & Chhindwara districts.

1. District Planning Officer Seoni & Chhindwara.
2. Public Health Engineering Department Seoni & Chhindwara.
3. Public Works Department Seoni & Chhindwara.
4. Chief Medical Officer Seoni & Chhindwara.
5. Zilla Panchayat (DRDA) Seoni & Chhindwara
6. Irrigation Department Seoni & Chhindwara.

7. Rural Engineering Service Seoni & Chhindwara.
8. Central Ground Water Department Seoni.
9. District Statistical Officer Seoni & Chhindwara.
10. District Industrial Centre Seoni & Chhindwara.
11. Post & Telegraph Seoni & Chhindwara.
12. District Education Officer Seoni & Chhindwara.
13. Tribal Development Department Seoni & Chhindwara.
14. Agriculture Department Seoni & Chhindwara.
15. Rajiv Gandhi Shiksha Mission Seoni & Chhindwara.
16. Deputy Director, Veterinary Department Seoni & Chhindwara.
17. Khadi & Village Industries Seoni & Chhindwara.
18. Janpad Panchayat, Kurai, Bichhua & Chorai.
19. M. P. Mineral Development Corporation Seoni & Chhindwara.
20. Child and Women Development Department Seoni & Chhindwara.
21. Fisheries Department Seoni & Chhindwara.
22. Madhya Pradesh Electricity Board Seoni & Chhindwara.

5.7.2 REGIONAL SETTING

Based on the data collected and the discussion with the government officials at State, District and Tehsil level the following regional setting has emerged,

1. State Profile: Madhya Pradesh

Infrastructure Development Index of Madhya Pradesh is 86.66. The Road length in Madhya Pradesh is 45.13 per 100 Sq. km and Railway route length is 1.33 per Sq. Km. 94.37% of villages are electrified in Madhya Pradesh. Post Office in State is available at 14.73 Post Office per Lakh Population and telephone connection is available at 1.18 connection per 100 persons. Health facilities in state are available in the form of Hospitals, Primary Health Centres (PHC) and dispensaries. Primary Health Centre is important in rural scenario. At present these centres are available at the rate of 1.62 centres per Lakh Population. In Literacy rate Madhya Pradesh is far behind the national average. Primary schools in state are available at 106.38 schools per lakh population and Middle/ higher schools are available at 26.30 schools per lakh population. Development of Banking Sector shows the status of economy of the region. Branches of banks in the state are available at the rate of 5.68 branches per lakh population.

2. District Profile: Chhindwara

Infrastructure Development Index of Chhindwara district is 77.18. The Road length in district is 27.08 per 100 Sq. km, which is far below the state average. In electrification of villages it is ahead of State. In Chhindwara district nearly 99.68% villages in district are electrified. In Post and Telegraph facility district is Behind State average. 13.37 Post Offices are catering to the lakh population. In telephone connection district is far behind state average. Telephone connection occupancy rate is 0.22 per 100 persons. Health facilities in district are below average. 1.25 centres are catering facilities to 100-lakh population. Literacy rate in Chhindwara district is 48.90%, which is nearly same as that of state. Primary education in district is

better than state, 121.22 Primary Schools are providing education to per lakh population and 23.06 Middle/ Higher Schools are providing education to per lakh population. Nationalised banks are providing banking facilities to population in district. Branches of banks are available at the rate of 5.52 branches per lakh population.

3. District Profile: Seoni

Infrastructure Development Index of Seoni district is 84.97. The Road length in district is 44.23 per 100 Sq. km. This is nearly equal to state average. In electrification of villages, Seoni district is far ahead of State average. Nearly 97.10% villages are electrified. Post and Telegraph facility in district is much better than other districts of the state. In Seoni 20.47 Post Offices are catering to per lakh population that is much above state average of 14.73 per lakh population. In telephone connection district is very poor. Connection is available at the rate of 0.18 per 100 persons. Literacy rate in Seoni district is 44.49%. Education Infrastructure in district is very good. 166.65 Primary Schools per lakh population and 26.57 Middle/ Higher Schools per lakh population exist in the district. Co operative banks in Madhya Pradesh are only in big cities; in small urban areas only nationalised banks are providing facilities. In Seoni Branches of nationalised bank are available at the rate 5.90 branches per lakh population.

4. Tehsil Profile: Bichhua

Bichhua tehsil is situated on southern part of the Chhindwara district. The Southern boundary of tehsil touches Maharashtra State. Kurai tehsil of Seoni district is on eastern side, Chorai tehsil is on northern side and Sausar tehsil is on western side of the Bichhua tehsil. Bichhua tehsil is spread over an area of 453 Sq. Km. Bichhua tehsil is consisting of 51-Gram panchayats, 1 Revenue Inspector circle and 18 Patwari circles. There are 143 revenue and 7 forest villages in this tehsil. The total population of tehsil is 65,693 out of which male population is 33,336 and female population is 32,357.

Bichhua tehsil is having predominately agriculture based economy. Total land available for cultivation is 342.18 Sq. Km out of which only 53.35 Sq. Km area is irrigated. The total main workers in tehsil are 25900. Out of that 13200 are Cultivators and 7595 are agriculture labour. It clearly reflects dependency of people on agriculture. In Grains Dhan, Wheat, Jawar and Makka are major crops cultivated in tehsil. In Cereals Chana, Tuer, Masoor and (Jdad are major crops and in Oilseeds Alst, Groundnuts, Sarsoan, Soybean and Til are major crop cultivated in tehsil

In Social Infrastructure quality of Health and Family welfare facility is fairly good in the tehsit. There is 1 Hospital, 5 Public Health Centre and 25 Sub Health Centres that are in the tehsil. Education facilities are also fairly good in this tehsil. There are 120 Primary Schools, 36 Middle Schools, 6 High Schools, 6 Higher Secondary Schools and 1 College is in the tehsil. All the villages of the tehsil are electrified. The numbers of registered connection given in the tehsil are 12244.

Bichhua tehsil is well connected with other areas of the (district through roads. The total length of good quality roads is 80 Km and length of bad quality roads is 41 Km. 30 out of 150 villages in tehsil are connected through all weather approach roads. There are only three branches of commercial banks in the tehsil. 9 Primary Agriculture Credit Societies are functioning in Bichhua tehsil. Bichhua tehsil is very backward in Industrialisation. Even Industries based on Minor Forest Produce not exist in this tehsil.

5. Tehsil Profile: Chorai

Chorai tehsil is situated in the eastern part of Chhindwara district. Seoni tehsil of Seoni district is in the east; Bichhua tehsil is in the south; Chhindwara tehsil is in the west and Amarwada tehsil is in the north side of the Chorai tehsil. The Geographical area of Chorai tehsil is 890.55 Sq. Km. 2 Revenue Inspector Circle, 42 Patwari Circle, 5 Police Station are under the administration of Chorai tehsil. Total of 189 Revenue and 2 Forest villages are under 91 Gram panchayat. According to 1991 census the population of Chorai tehsil is 1,31,671 and out of that Male population is 67,579 and that of female is 64,092.

Like other tehsils Chorai is also having predominately agrarian economy. Dependency on land for livelihood is very high in the tehsil. Main workers in tehsil are 47,695 out of which 19,211 are Cultivators and 18554 are Agriculture labour. It shows the degree of dependency on land. Agriculture land in the tehsil is 677.60 Sq. Km out of which 209.68 Sq. Km land is under double crop, 260.04 Sq. Km area is under irrigation. Dhan, Wheat, Jawar, and Makka in Grains; Chana, Tuer, Masoor and Udad in Cereals, Alsi, Groundnuts, Sarsaon, Soyabean and Til in Oilseeds major crops are cultivated in this tehsil.

Health and Family welfare facility is good in the tehsil 4 Hospitals, 1 Primary Health Centre and 26 Primary Health Centre are in Chorai tehsil. Apart from this 7 dispensaries of India Medical System and Homeopathic Medical System are also available in the tehsil. Quality of education facility is very good in the tehsil with 204 Primary Schools, 57 Middle Schools, 57 High Schools, 27 Higher Secondary Schools and 1 College. Electrification of Villages is going on in the whole tehsil.

At present 179 villages out of 191 are electrified As per MPEB record 20429 registered electric connection are given in Chorai.

Chorai tehsil is well connected through Rail and Road with other areas of the district fend state. Total Length of good condition road is 146 Km and total length of rough road is 90 Km. In the tehsil 29 villages are connected through all weather approach roads. Industrial scenario is very bad with no big or small industry is in the tehsil. Commercial banks are having three branches in the tehsil. Scenario of credit societies is bleak as very only one Primary Agriculture Credit Society is functioning and 4 Non Agriculture Credit Societies are registered but none of them is functioning at present.

6. Tehsil Profile: Kurai

Kurai tehsil of Seoni district is situated on the southern part of the district, adjoining to Maharastra State. Seoni tehsil is in northern part, Bichhau and Chorai of Chhindwara district are in western part of the Kurai tehsil. Balaghat district is in eastern part. Kurai tehsil is having a total area of 2134.7 Sq Km and has 176 revenue and 17 forest villages. Total population of the tehsil is 87,850 out of that Male population is 43,925 and Female population is 43,925. Tehsil is predominately agriculture base economy maximum numbers of worker are cultivators or are working as a labour in agriculture farms. The major crops cultivated in the tehsil are Dhan, Wheat, Jowar and Makka in Grains. In Cereals major crops are Chana, Tuer and Masoor. In Oilseeds major crops are Alsi, Groundnuts, Sarsoan and Soyabeans.

The quality of Social Infrastructure is fair in Kurai tehsil though Health facilities are not available in all villages. There are 5 Primary Health Centres, 1 Community Health Centre, 30 Sub Health Centre and 3 Ayurvedic and Homeopathic Dispensaries available in Kurai tehsil. Education facilities are fair good in this tehsil. There are 156 Primary Schools, 29 Middle Schools, and 6 High Schools, 6 Boarding Schools in the tehsil. Higher education institute is not available in the tehsil but this facility is available only in district head quarter at Seoni.

All revenue villages in tehsil are electrified. As per Madhya Pradesh Electricity Board there are 14726 legal electricity users in the tehsil. The total length of roads in good condition roads is 20.5 KM. and total length of rough road is 132.28 KM. 47 villages are having all weather approach roads.

There are three branches of commercial banks are in Kurai tehsil. There are 5 Primary Agriculture Credit Societies and 26 Non Agriculture Credit Societies functioning in the tehsil. Industrial scenario of tehsil is very bad as no big industry exists in Kurai tehsil. There are 42 Agriculture Based Industries, 196 Animal Husbandry Based Industries and 124 Minor Forest Produce Based Industries in Kurai tehsil. Communication facilities are in adequate. Post offices are only in 11 villages, telegraph offices are only in 4 villages and there are 305 individual telephone connections in Kurai tehsil.

5.8 INFRASTRUCTURE IN ECO-DEVELOPMENT VILLAGE INVENTORISATION AND ANALYSIS

5.8.1 Medical Facilities

Madhya Pradesh is backward in Health care delivery system. Same in the case Seoni and Chhindwara Districts. Out 99 Eco-development villages' Medical facilities are available in only 11 villages.' i.e. almost 11% of total villages. For 44 villages Medical facilities are available with in 5 Kms distance and for 31 villages facilities are available between 5 to 10 Kms of distance from the village. For 13 Eco-development villages Medical facilities are available at a distance of above 10 Kms.

Status of Medical Facilities in Eco-development villages

Table No. – 80
Medical Facilities in Buffer zone

Sr. No	Medical Facilities	Villages
1	In Village	11
2	<5Kms	44
3	Between 5 to 10 Kms	31
4	> 10 Kms	13

Medical facilities in 51 villages of Kurai Tehsil are comparatively poor than those in the other two Tehsils. In Kurai Tehsil 2 villages are having Primary Health Centres, for 18 villages Medical facility is available within 5 Kms, as 20 villages Medical facility is available between 5 to 10 Kms and from 11 villages Medical facility is available beyond 10 kms distance from the village. In Chorai and Bichhua Tehsils Medical facilities are comparatively good. Out of total 48 villages Primary Health Centre are available in 9 villages. For 26 villages they are available within 5 Kms, for 11 villages it between 5 to 10 Kms and for 4 villages they available beyond 10 Kms.

5.8.2 Post & Telegraph

Post and telephone facilities are important in day to day life. In modern era it become a basic requirement of peoples. This facility is not so fair in Eco-development villages. Out of 99 villages this facility is available in 9 villages. Peoples from 58 villages have to travel less than 5 Kms to avail of these facilities. For 25 villages this facility is available between 5 to 10 Kms and for 7 villages this facility is available beyond 10 Kms.

Table No. – 81
Post & Telegraph Facilities in Buffer zone

Sr. No	Post & Telegraph	Villages
1	In Village	9
2	<5Kms	58
3	Between 5 to 10 Kms	25
4	> 10 Kms	7

In Kurai Tehsil of Seoni district out of 51 villages post office is in 4 villages. Comparison of these facilities in the three Tehsils reveals that these facilities are good in Kurai Tehsil. Out of 99 villages 32 are having these facilities within distance of 5 Kms, 14 villages are having these facilities between 5 to 10 Kms distance Karmajhiri is only village for which these facilities are available beyond 10 Kms.

In Bichhua and Chorai Tehsils, out of 48 villages, these facilities are available in 5 villages. 26 villages are having these facilities within 5 Kms of distance. 11 villages are having these facilities between 5 to 10 Kms of distance and for 6 villages these facilities are available beyond 10 Kms. Out of 6 villages, 4 are forest villages, which have these facilities available beyond 10 Kms.

5.8.3 Public Distribution Shops (FDS)

Public Distribution Shops are basically fair price shops, providing food grains and grocery items in rural and urban areas on government subsidised rates. It also provides food grains and other grocery items at special subsidised rate to peoples living below poverty line (BPL).

Eco-development villages are having a fair network of PDS. Out of 99 villages, 26 are having PDS, 68 villages are having this shop within 5 Kms of distance and for 5 villages these shops are located between 5 to 10 Kms distance.

Table No. – 82
Public Distribution Shops

Sr. No	Villages	PDS
1	In village	26
2	<5 Kms	68
3	5-10 Kms	5

Eco-development villages in Kurai Tehsil are having comparatively good network of Public Distribution Shops than that in Chorai and Bichhua Tehsils. In Kurai tehsil out of 51 villages, 11 are having Public Distribution Shops, 40 villages are having this shops with in 5 Kms of distance. In Chorai and Bichhua tehsil out of 48 villages, 15 villages are having these shops in the village it self, 28 villages are having this shops within 5 Kms of distance and for 5 villages the shops are located between 5 to 10 Kms of distance. For forest villages these shops are mostly between 5 to 10 Kms of distance from the villages.

5.8.4 Road Network

Two major roads through the 99 Eco-development villages. 5 Eco-development villages of Kurai Tehsil are situated on National Highway No 7 from Kanya Kumari to Varanasj. These villages are Mohgaon Sadak, Pi'ndkapar, Setewani, NayegaonBanjar and Pachdhar. The State Highway, the other major road passes through Bichhua Tehsil on that only 4 Eco-development villages are situated. These villages are Bisanpur, Khamarpani, Deni and Devari.

The overall condition of approach roads in Eco-development villages is not good. Out of 99 Villages only 5 villages are having pucca approach roads. In rainy season Tikari Mai, Tikari Ryt, Karmajhiri, Barelipar Ryt are almost cut off from rest of the villages. In Bichhua and Chorai Tehsils Kumpani, Jamtra, Dholpur, Tekapar, Boriya, Khursipar and Kumpani are cut off from rest villages in rainy season due to bad condition of roads.

5.8.5 Education Facilities

Literacy rate in a particular area is related to the availability of Educational Infrastructure in that area. Due to illiteracy many Social evils and superstitions exist in tribal areas. In the present era Education has become a basic need after Food,

Clothing and shelter. Literacy rate in the Eco-development villages is very low. 34.04% of the population is literate, in which 42.27% are males and 24.66% are females.

Literacy Rate in Project area

Table No. – 83
Literacy Rate in Buffer zone

Sr. No.	Tehsil	Male	Female	Person
1	Kurai	63.76%	43.93%	53.82%
2	Bichhua	29.04%	15.05%	22.11%
3	Chourai	35.53%	15.01%	26.20%
4	Project area	42.27%	24.66%	34.04%

Madhya Pradesh government has implemented many programmes to promote primary education through Rajiv Gandhi Shiksha Mission. Status of primary schools is very good in Eco-development villages. Out of 99 villages, 77 have primary schools. For 22 villages students have to travel less than 5 Kms to nearby villages to avail of the facility.

Table No. – 84
Status of Primary Schools in Eco-development villages

Sr. No	Primary School	Villages
1	In Village	77
2	<5 Kms	22
3	Between 5 to 10 Kms	0
4	> 10 Kms	0

Status of education facility after primary level is very bad in Eco-development villages. Out of 99 villages, only 11 villages have middle schools. For 47 villages middle schools are situated within 5 Kms of distance and for 34 villages this facility is available between 5 to 10 Kms of distance. For most of the forest villages Middle schools are situated beyond 10 Kms. Middle schools are very less due to high drop out rate after primary education.

Table No. – 85
Status of Middle Schools in Eco-development villages

Sr. No	Middle School	Villages
1	In Village	11
2	< 5 Kms	47
3	Between 5 to 10 Kms	34
4	> 10 Kms	7

District wise analysis of Schools shows that in Kutai Tehsil of Sepni district Out of 51 villages, 42 have primary schools and 6 have middle schools and in Bichhua and Chorai Tehsils of Chhindwara district out 48 villages 35 have primary schools and 5 have middle schools.

Government of Madhya Pradesh has tried to universalise primary education through implementation of District Primary Education Programme- District Primary Education Programmes has been operational in Seoni and Chhindwara districts. This is a mission to universalise primary education and promote literacy. Rajiv Gandhi Shiksha Mission is conceived of as convergence modality that brings together the two programmes of universalising primary education through externally aided District Primary Education Programme (DPEP) and Total Literacy Campaigns of the National Literacy Mission. The DPEP claimed to be unlike previous centrally sponsored initiatives, has evolved an integrated approach to primary education with programme assistance being channelled through state projects office to district level implementing agencies. Special attempt has been made to target educationally backward districts (defined specially by low female literacy) with strategies to ensure educational needs of women, SCs and STs and other weaker sections of the population.

5.8.6 Infrastructure Development Index

Infrastructure Development Index represents status and level of Infrastructure in region. Through Infrastructure Development Index it becomes easy to know available and require Infrastructure & services in region. To know status of Infrastructure & services in Eco-development villages, it is first necessary to know status of these in regional setting.

5.8.6.1 Infrastructure Development Index of Eco-development Villages

Calculation of Infrastructure Development Index

An attempt had been made to calculate Infrastructure Development Index of Eco-development villages. Index calculated is based on eight most important Infrastructures & Services require in rural areas. It is responsibility of State Government to provide these basic Infrastructure & services in villages. The Infrastructure & Services used in calculation of Infrastructure Development Index are listed below.

- Anganwadi
- Public Distribution Shop
- Drinking Water
- Medical facilities
- Market Place
- Education Institute
- Road
- Post & Telegraph

These Infrastructure and Services are decided on the basis of primary survey and discussion with the people in Eco-development villages. In Focus Group Discussions peoples were asked to rank most important Infrastructure & Services require in villages. On the basis of discussion with people's weightage were assigned to these eight basic Infrastructure & Services.

Table No. – 86
Infrastructure and Services and there Wcightagc

Sr. No.	Indicators	Weightage
1	Anganwadi	8
2	Public Distribution Shop	7
3	Drinking Water	6
4	Medical facilities	5
5	Market Place	4
6	Education Institute	3
7	Road	2
8	Post & Telegraph	1
	Total	36

After assignment of Weights each indicator was placed in 1 to 4 scale. Anganwadi, Education Institute, Medical facilities, Market Place, Post & Telegraph and PDS are six indicators are marked through following criteria:-

Table No. – 87
Criteria for given marks to Infrastructure and Services

Sr. No.	Indicator	In Villages	>5Km.	5-10 Km.	>10 Km.
1	Anganwadi	4	3	2	1
2	Education Institute	4			1
3	Medical facilities	4	3	2	1
4	Market Place	4	3	2	1
5	Post & Telegraph	4	3	2	1
6	PDS	4	3	2	1

Markings of these indicators were based on distance criteria. If these Infrastructure & Services are available in village than it had been marked as 4. If it is available within 5 Km than it had been marked as 3, if it is available between 5 to 10 Km than it had been marked as 2 and it is above 10 Km than it had been marked as 1. Marks to drinking water were given on the basis of number of Handpump per population. Marks to road were given on the basis of condition of approach road to the village.

Calculation of Infrastructure Development Index

$$IDI_{VI} = \frac{A_{xi} + E_{xi} + W_{xi} + H_{xi} + R_{xi} + M_{xi} + P_{xi} + PDS_{xi}}{CWS} \times 100$$

IDI_{VI}= Infrastructure Development Index of Village 1

CWS = Cumulative Weightage Score

X = Weightage of Infrastructure and Service on 1 to 8 Scale

I = Score of Infrastructure and Service in village on 1 to 4 Scale

5.8.6.2 Index of Eco-development Villages

Ranking of Eco-development villages was done after calculation Infrastructure Development Index. Village received highest marked was ranked first number and village "received lowest marked was ranked last. Infrastructure Development Index of Khamarpani village is 95.83 percent it was ranked 1st. Index of Salhe village in Kurai is lowest 45.83 percent it was ranked 99th. Eco-development villages were grouped on the basis of IDI.

Table No. – 88
Infrastructure Development Index of Eco-development villages

S. No.	Infrastructure Development Index	Villages
1	Below 50%	3
2	Between 50 to 60%	14
3	Between 60 to 70%	18
4	Between 70 to 80%	32
5	Above 80%	32

Villages were grouped as per Infrastructure Development Index. 3 villages have IDI below 50 percent, 14 villages have IDI between 50 to 60 percent, 18 villages have IDI between 60 to 70 percent, villages having IDI between 70 to 80 percent are 32 and villages having IDI above 80 percent are 32.

Murer and Salhe villages in Kurai tehsil and Bandha Ryt in Bicchua tehsil require immediate attention regarding development of infrastructure & services these villages are suffering from severe drinking water problems.

5.8.6.3 Infrastructure Development Plan for Eco-development Villages

After identification of gaps in Infrastructure & services in Eco-development villages, detail plan is propose for development of each Infrastructure & service. This plan will helpful for responsible authorities to undertake works in Eco-development villages. It will also helpful for authorities for optimum utilisation of budget.

1. Anganwadi

Anganwadi is important institution in villages. The following Eco-development villages around vicinity of Pench Tiger Reserve need immediate attention regarding Anganwadi.

Table No. – 89
Eco-development villages require Anganwadi

S. No	Villages	S. No	Villages
1	Tikari Ryt	17	Vijaypani
2	Tikari Mal	18	Arjuni
3	Barelipar Ryt	19	Murer
4	Teoni	20	Rukhad
5	Salhe	21	Karmajhiri
6	Bhodki	22	Kothar
7	Katangi Ryt	23	Kanhasagar
8	Panjra	24	Thota Ryt.
9	Niwari	25	Naharjhir
10	Alesur	26	Bandhan Ryt.
11	Durgapur	27	Antara
12	Ambadi	28	Silota Khurd
13	Kamreth Ryt	29	Boradi
14	Awargani Ryt	30	Dongargaon
15	KuppiTola Ryt.	31	Dholpur
16	Khamba		

2. Public Distribution Shop

Public Distribution Shop in every village is prim responsibility of Government. These Shops provide grain and other to peoples in fair price. Especially in villages where intensity of poverty is high, provision of Public Distribution Shops becomes necessary. The following Eco-development villages require immediate attention regarding establishment of PDS: -\

Table No. – 90
PDS requirement of village

Sr. No.	Villages
1	Bandhan Ryt.
2	Tekapar
3	Singardip
4	Marajatpur
5	Pathara Khurd

3. Drinking Water

Peoples in Eco-development villages are depend upon Handpump for drinking water, only 5 villages out of 99 have pipe line water supply system. More then 50 percent villages are suffering from drinking water problems. Villages require immediate attentions regarding drinking water problem is: -

Table No. – 91
Village require drinking water facilities

Sr. No.	Villages	Sr. No.	Villages
1	Bandhan Ryt.	11	Silota raiyat
2	Marajatpur	12	Dunda Seoni
3	Salhe	13	Kohka
4	Murer	14	Pathari
5	Antara	15	Gumatara
6	Dholpur	16	Pulpuldoh
7	Titari Mohgaon	17	Surewani
8	Erma	18	Rampuri
9	Boriya	19	Banskheda
10	Bandhamal		

4. Medical facilities

Peoples in villages are mainly depending upon Government to provide medical facilities. The following villages have lack of medical facility: -

Table No. – 92
Eco-Villages require medical facilities

Sr. No.	Villages	Sr. No.	Villages
1	Titari, Mohgaon	8	Khamba
2	Barelipar Ryt	9	Karmajhiri
3	Tekapar	10	Paraspani
4	Tikari Ryt	11	Satosha
5	Tikari Mal	12	Kharanj
6	Ambadi	13	Vijaypani
7	Khamreeth Ryt.		

5. Market Place

Market place is for economic development of peoples in rural area. Marketplace gives opportunity for peoples to buy and sale vegetables and other items such as household industrial goods. Developments of Market place are requiring in following Eco-development villages.

Table No. – 93
Villages require development of Market place

Sr. No	Villages
1	Ambadi
2	Khamreeth Ryt.
3	Khamba
4	Kumbhpani
5	Dongargaon

6. Education

Rajiv Gandhi Primary Shiksha Mission had opened formal and informal primary schools in nearly all Eco-development villages. Immediate attention is not requiring in development of primary education institution however attention in development of secondary schools should be given in Eco-development villages.

7. Road

Road network is major problem in Eco-development villages very few are having WBM approach road. Especially in forest village's development of approach road to village should be given prime importance. The following Eco-development villages require immediate attention for approach road development.

Table No. – 94
Villages require approach road

Sr. No	Villages
1	Salhe
2	Tikari Ryt.
3	Barelipar Ryt.
4	Tikari Mal
5	Paraspani
6	Sarrahiri

8. Post and Telegraph

Post and Telegraph facilities are not much importance for tribal communities living in Eco-development villages, keeping future point of view these facilities should be develop in villages. From following villages Post and telegraph facilities are available above 10 kms of distance.

Table No. – 95
Villages require Post and Telegraph facilities

Sr. No	Villages
1	Pathra kala
2	Kumbhpani
3	Karmajhiri
4	Thota Mal
5	Kokiwara
6	Tekapar
7	Khursipar

The majority of inhabitants belongs to the tribes - viz. the Gonds. Most of the people are illiterate, and are by and large pastoral, though agriculture, collection of minor forest produce and wages earned through routine park works constitute their principal occupation. Though basically “food gatherers” by nature, the Gonds are gradually adopting agriculture.

5.8.7 Village Economy:

The economy of the villagers is dependent on :-

- (i) Agriculture
- (ii) As Casual labour
- (iii) Collection of NTFP.

(i) Agriculture –

Agriculture is the main source of income for majority of the villages located adjoining the PA boundary despite the heavy incidences of crop raiding by the wild ungulates in most of such villages. It is practised generally in rainy season. However the Rabi crops are also taken where the irrigation facilities are available, mostly in the EDCs of Chhindwara district.

Some of the well to do families near the Gumtara and other adjoining villages in the Chhindwara district also raise cash crops mainly the sugarcane. Large-scale sugarcane production has been reported from Thuyepani, Gumtara, Pulpuldoh and Jamtara.

(ii) As casual labours-

The marginal landowners and landless members of the society depend on wages earned as casual labours in forestry operations and other Govt.- sponsored works. They also get sizeable employment in working in the agriculture field of big landowners in the village. Some of them also migrate to Nagpur to work as casual labour especially during the non- agriculture season.

Another important source of income for such group of marginal farmers include the sale of calves.

(iii) Collection of NTFPs-

Collection of NTFPs, like; the honey, fruit, Tendu leaves and the like are done from the adjoining forest. The Mahua flower and fruits like Achar, Bel, Aonla are also collected from the forest, which are used for food as well as to sale in the local market.

Occupation and per capita income It is found that agriculture and livestock production is the main occupation. Wage labour, NTFP collection and fishing is also important sources of income. Villagers are more dependent on forest mainly for fuel wood and fodder resources for both food and income. It is observed that 80% of families suffer from varying degrees of poverty and that most of these belong to schedule tribes.

(iv) Economy linked relationship with forest-

The EDC members are directly or indirectly linked with the forest and forest produces in the following ways: -

- (i) The villages use the timber poles and other thatching materials for construction of their houses and campus including the cattle shed,
- (ii) The Medicine system adopted by the Gond is entirely based on the plant parts, collected from the forest. The people still have tremendous faith and confidence on their ancestral knowledge and expertise on such medicine system. Some of the older people have unbelievable skill to identify the plants of medicinal values.
- (iii) Collection of usufructs, like; the honey, Fruit, vegetables and the like is, done from the forest. The leaf vegetable, Mahua flower and fruits like, Achar (Buchnanian laciniosa) and the like, the Bel (Aegle marmelos) and Aonla (Embolica officinalis) are collected from the forest, which are used in their routine diet.
- (iv) Rearing of cattle by these villagers are almost dependent on the Forestland.

(v) Customs and traditions-

Cultural activities of tribal population and its impacts- As stated earlier, the predominant human population of these villages consists of tribal class, who are culturally strict and are headstrong in their religious matters. Their life style has been traditionally interwoven with forest on which they are dependent on many different ways apart from requirement based dependency.

Most of their festivals are related to forest folklore. Their Gods reside in the forests in the form of Baghdeo, Kumbhadeo, Ambamai, and Bandevi. Many of their religious ceremonies require specific forest produce on the occasion of any birth or deaths in the family; they take them to their holy river Pench. The villagers from about all the

adjoining villages collect in Kumbhadeo compartment No. 10 on Shardiya Purnima day to pray and celebrate the occasion. Similarly in *Makar Sankranti* day they, gather in Pench near Alikatta and Ambamai Nala. It is apparent therefore, that the tribal way of life and forests are inseparable.

Many old tribals are experts in the identification and use of medicinal plants as well as body part of animals. These individuals can be of great value in any fundamental research concerning medicinal properties of flora and fauna.

(vi) Land holding position –

Majority of villagers own agricultural land, some of them have also encroached up on the land belonging to the revenue and forest departments.

Type of agricultural crops raised

Farmers belonging to most of the villages, raise traditional crops for their self-use. Few varieties of cash crops are raised to sale in the markets.

A. Cash crops: -

It is a point of satisfaction that most of the farmers both of the groups of villages (Seoni area and Chhindwara area) raise one or other varieties of cash crops. The most common of such crops is the Sugarcane in Chhindwara area. Some of the more-aware farmers raise Soyabean (*Glycine max*) which fetches a handsome price. Vegetables also constitute an important cash crop in most of EDCs of Chhindwara area.

B. Traditional crops

The Bajara (*Pennisetum typhoideum*) is the most common Kharif crop, grown in almost every village in both of the groups. It does not require any type of irrigation. In some of the villages, Maize (*Zea mays*) and Jawar (*Sorghum vulgare*) are also grown for self-use. Paddy cultivation is also done in these villages. Gram and Wheat are the principal Rabi crops raised in both sides of the group of villages.

Different varieties of cash crop raised in various villages are being depicted in the following table:

Table No. – 96
Cash crop grown in various villages

Cash crops	Villages in Seoni area	Villages in Chhindwara district
Soyabean (Glycine <u>max</u>)	Turia, Awarghani, Kohka, Telia, Arjuni, Pipariya, Setewani, Mohgaon (Y), Ghatkohka, Panjara, Sindaria, Dhutera, Karhaiya, Mohgaon (Sadak) Aalesur, Patarai, Airma, Potia, Nayegaon, Pachdhar, Salhe, Sarrahiri	Gumtara, Jamtara, Davajhir, Kumbhpani, Pathrakhurd, Bordi, Pathari, Thota, Kanhasagar, Silotakala, Banskheda, Rampuri, Naharjhir, Bandhanmal, Deori, Sawari, Kundai, Bishanpur, Surewani, Pathrakala, Thuepani, Chirewani, Mohgaonkhurd, Doodhgaon, Pulpuldoh, Kadhैया, Khamarpani, Kanhargaon
Sugar cane	Turia, Piparia, Setewani, Ghatkohka, Arjuni, Kohka, Telia, Mohgaon (Y), Vijaipani (ii)	Gumtara, Jamtara, Pathri, Banskheda, Silotakala, Silotakhurd, Thuepani, Chirewani, Deori, Sawari, Kadhैया, Dongargaon, Salhiwada, Antara, Khamarpani, Kundai, Bishanpur, Ghatkamtha, Dainy
Pulses	Turia, Awarghani, Piparia, Setewani, Mohgaon (Y), Mohgaon (T), Karhaiya, Airma, Ghatkohka, Dhutera, Panjara	Gumtara, Jamtara, Thuepani, Chirrewani, Kadhैया, Ghatkamtha, Pathri, Thotamal, Silotakala
Groundnut (Arachis hypogaea)	Pipariya, Setewani, Mohgaon (Y), Mohgaon (T), Turia, Arjuni, Telia, Ghatkohka, Vijaipani (ii), Karhaiya, Airma	Banskheda, Bandhanmal, Rampuri, Chargaon, Pathri, Kadhैया, Dongargaon, Thotamal, Kanhasagar,
Vegetables	Turia, Aawarghani, Pipariya, Setewani, Karhaiya, Airma	Thuepani, Jamtara, Gumtara, Chhirewani, Pathri, Banskheda, Rampuri, Thotamal, Kanhasagar, Ghatkamtha

Table No. – 97
Traditional crops grown in various villages

Traditional Crop	Villages Seoni Area	Villages Chhindwara
Jawar (Sorghum vulgare)	Panjara, Bhodki, Katangi, Aalesur, Patarai, Salhe, Sarrahi, Dhutera, Sindariya, Niwari, Tewani, Vijaipani, Kuppitola, Mudiarith, Satosha, Pindkpar, Paraspani, Khamba, Tikadi, Khamaba, Ambadi, Piparia, Setewani, Mohgaon(Y), Mohgaon(T), Potia Karhaiya, Airma	Deori, Sawari, Bisanpur, Kokiwada, Pathrakala, Surrewani, Chhirewani, Dhodhgaon, Pulpuldoh, Rampuri, Banskhedha, Silota, Thota, Jamtara, Naharjhir, Gumtara, Davajhir, Kanhasagar, Salhewada, Antara, Marjatpur, Bordi, Pathri
Bajara (Pennisetum typhoideum)	Vijaipani (ii), Kuppitola, Mudiarith, Harduli, Piparia, Panjara, Bhodaki, katangi, Ghatkohka, Arjuni, Telia, Kohka, Awarghani, Satosha, Rukhad, Gandatola, Barelipar, Paraspani, Karhaiya, Airma	Kundai, Bishanpur, Dhoulpur, Ghatkamtha, Saliwada, Antra, Naharjhir, Bordi, Thotaraiyat, Kanhasagar, Silotakala, Khairanj, Pathrakala, Kokiwada, Surrewani
Paddy (Zehneria umbellata)	Ghatkohka, Mohgaon sadak, Katani, Panjara, Bhodki, Alesur, Patari. Aagri, Karhaiya, Airma, Niwari, Tewani, Mohgaon (Y), Mohgaon(T), Sindria, Dhutra, Potia, Piparia, Setewani, Tura, Awardhani, Khamaba, Ambadi, Vijaipani, Paraspani, Vijaipani (ii), Amajhiri, Nayegaon, Pachdhar, Barelipar, Tikadi, Karmajhiri	Gumtara, Jamtara, Pathri, Naharjhir, Khumbhpani, Rampuri, Banskhedha, Davajhir, Thota, Silota, Kanhasagar, Chargaon, Boardi, Pathrakala, Thuepani, Chhirewani, Sawari, Kundai, Bisanpur, Ghatkamtha, Dhodhgaon, Pulpuldoh, Marjatpur, Surrewani, Dongargaon, Kokiwada, Kadhaiya
Wheat (Triticum vulgare)	Turaia, Awardhani, Satosha, Piparia, Setewani, Potia, Mohgaon (Y), Mohgaon Sadak, Karhaiya, Airma, Arjuni, Telia, Kothar, nayegaon, Pachdhar, Ghatkohka	Gumtara, Jamtara, Thyepani, Chirrewani, Pathri, Dhodhgaon, Pulpuldoh, Mohgaonkhurd, Surrewani, Pathrakala, Kadhaiya, Deori, Sawari, Ghatkamtha, Rampuri, Banskhedha, Silotakala, Bandhamal, Thotamal, Kanhasagar

(vii) Reasons for Backwardness:

In general, there are following reasons for the socio-economic backwardness of the indigenous people:

- Lack of any alternate or additional source of income-other than the wages earned through forestry works
- Extremely low production from the single rain-fed crop
- Inaccessibility and remoteness
- Lack of basic amenities like drinking water, health care, schooling, education, irrigational facilities etc
- Frequent crop damage by wild ungulates

(viii) Problems Faced by the People:

The following problems are generally faced by the people of the Impact Zone:

- Lack of grazing ground for the cattle, owing to the depleted state of ground cover outside the protected area
- Loss of usual rights and concessions like fuel head-load collection, small timber, fishing, etc.
- Loss of income due to the stoppage of forestry, MFP collection, viz. tendu leaves, mahul leaves, sal seeds
- Crop raiding by wild ungulates
- Loss of livestock by wild carnivores
- Human injury and loss of life due to lethal encounters with carnivores

Problems Faced by the Park:

Some of the common problems faced by the Park Management are:

- Illicit grazing
- Petty theft of fallen fuel wood
- Petty theft of poles for house construction by the locals
- Fishing
- Honey collection
- Manmade fires to promote new flush of tendu leaves
- Animal poaching (hunting with bow and arrow, poisoning)
- Contamination of peripheral waterholes by village cattle
- Spreading of weeds due to seed dispersal from the coat of wild ungulates frequenting the nearby village grazing ground

These sensitive interface conflicts once again emphasize the importance of enforcing the protection measures after providing reasonable alternatives.

The local inhabitants have remained isolated from the mainstream of development, and owing to their traditional dependence on the wilderness, continue to remain so socially and economically. Population pressures of both human as well as cattle have dislocated the linkage between the local people and the wilderness. Consequently, this culminates in the overuse and abuse of the ecosystem.
