

Chapter 12

Socio-Economic Studies and Resettlement and Rehabilitation Plan

12.0 Introduction

Water is a prime natural resource and an essential element in all the development activities of all living kind and for the environment. Therefore, there is an imminent necessity of water to be harnessed and utilised in most scientific manner. The main source of water in India is through precipitation which is unevenly distributed both in space and time. India receives most of its annual rainfall during monsoon months from June to September. Due to uneven occurrence of rainfall some parts of the country are receiving more rainfall leading to flood while during the same period other parts of the country are receiving meagre rainfall leading to serious drought conditions. Many areas are reeling under acute drinking water shortage during summer. In order to ensure the availability of water throughout the year for meeting various requirements, it is essential to create storage reservoirs to facilitate impounding of flood waters during monsoon. As such, construction of dams across various rivers for storage of water during the period of its availability is necessary.

River valley projects are the building blocks for development but at the same time these projects also result in submergence of agriculture and forest land and human habitations leading to involuntarily displacement of the population residing in the area. Such adverse social impacts due to these projects which are generally unavoidable should be fairly acceptable, keeping in view the benefits likely to be accrued from them. However, it is imperative to minimize such adverse effects and provide alternative sites for resettlement through provision of house sites, dwellings, infrastructure related to education, communication, road, drinking water, sanitation, electricity, hospital, community centre etc. and also extending suitable rehabilitation support enabling the project affected people to lead and enjoy a better quality living standards. Therefore, an in-depth study is essential for planning in detail the socio-economic profile of the concerned region for probable solutions either to mitigate or remove the adverse impacts of the

development. Further, the Social Impact Assessment Report depicting the present scenario would be prepared which would also include detailed Rehabilitation and Resettlement Plan in order to ameliorate the ill effects of displacement of people due to creation of these reservoirs. As such, socio economic studies of the proposed Par-Tapi-Narmada link project have been undertaken to fulfil this basic requirement.

Environmental Impact Assessment Studies of Par-Tapi-Narmada link project including Socio-economic surveys and preparation of Rehabilitation and Resettlement Plan has been carried out by Water and Power Consultancy Services India Limited (A Government of India Undertaking), Gandhinagar. Socio-economic status of Pre and Post Project scenarios and Rehabilitation and Resettlement Plan based on the findings of Water and Power Consultancy Services India Limited for the project affected peoples are presented in this Chapter.

12.1 **Socio-Economic Profile and Survey**

Par-Tapi-Narmada Link Project has been planned to transfer surplus waters of West flowing Par, Auranga, Ambica and Purna river basins of South Gujarat and neighbouring Maharashtra to provide irrigation facilities to: the areas on its enroute: tribal areas enroute right side of the link canal; tribal dominant districts of Dang and Valsad of Gujarat and Nasik district of Maharashtra; command area of five projects proposed by Government of Gujarat in its initial reaches to caters the water demands for irrigation and drinking purposes in its enroute; and take over the part command area of existing Miyagam Branch Canal of Narmada Canal System. The Narmada waters so saved in Sardar Sarovar Project would be utilized to provide irrigation facilities: in tribal areas of Naswadi, Kavant, Sankheda, Jetpur Pavi, Chhota Udepur talukas of Chhota Udepur district and Halol, Ghogamba and Kalol talukas of Panchmahal district by lift directly from Narmada Main Canal on substitution basis; and in drought affected Saurashtra region of Gujarat on substitution basis through Narmada Canal System to meet irrigation, domestic and other requirements. In addition to this, all possible Panchayat / village tanks coming in the vicinity of the project will be filled up. The project will also provide drinking water to tribal population in the vicinity.

The construction of Jheri, Paikhed, Chasmandva, Chikkar, Dabdar and Kelwan reservoirs is expected to improve the ground water condition in the vicinity. These reservoirs can also be developed as tourist spots. The reservoirs are bound to enhance the growth of aquatic life like fish which is expected to increase the Fisheries production manifold as reservoir fishery which is considered as productive will replace the existing riverine fisheries. Fresh water prawns and migratory fish may be cultured in the reservoirs. There will be an increase in the number of local and migratory birds because of the waterfronts of the reservoirs. Besides, the project will generate immense employment opportunities to the local people during construction and operation phase.

Creation of 6 reservoirs viz Jheri, Paikhed, Chasmandva, Chikkar, Dabdar and Kelwan would affect 61 villages (one village fully and 60 villages partly). The affected villages are located in Dangs and Valsad districts of Gujarat and Nasik district of Maharashtra.

12.1.1 **Regional Profile from the Available Secondary Data**

The Par-Tapi-Narmada link project is located in Nasik district of Maharashtra and Valsad, Navsari, Surat, Bharuch, Dangs and Vadodara districts of Gujarat.

Jheri reservoir proposed across river Par is located near village Jheri in Peint taluka of Nasik district of Maharashtra. The submergence area of Jheri reservoir lies in Surgana and Peint talukas of Nasik district of Maharashtra. The nearest railway station for Jheri reservoir is Nasik on Central railway. The Jheri dam is approachable from Peint taluka in Nasik district and from Dharampur taluka in Valsad district via Dharampur-Nasik road. The nearest airport to the proposed Jheri dam site is located at Mumbai, which is about 280 km.

Paikhed reservoir is proposed across river Nar the main tributary of river Par near village Paikhed in Dharampur taluka of Valsad district in Gujarat. The submergence area of Paikhed reservoir is in Surgana taluka of Nasik district in Maharashtra and Dharampur taluka of Valsad district in Gujarat. The nearest railway station for Paikhed reservoir is Valsad on

Western railway. The Paikhed reservoir is approachable from Dharampur in Valsad district of Gujarat. The nearest airport from the proposed Paikhed dam site is Surat, which is about 180 km.

Chasmandva reservoir is proposed across river Tan a tributary of river Auranga near village Chasmandva in Dharampur taluka of Valsad district in Gujarat. The submergence area of Chasmandva reservoir is in Surgana taluka of Nasik district in Maharashtra and Dharampur taluka of Valsad district and Vansda taluka of Navsari district in Gujarat. The nearest railway station for Chasmandva reservoir is Valsad on Western railway. The Chasmandva reservoir is approachable from Dharampur in Valsad district of Gujarat. The nearest airport from the proposed Chasmandva dam site is Surat, which is about 160 km.

Chikkar reservoir is proposed across river Ambica near village Chikkar in Ahwa taluka of Dangs district in Gujarat. The entire submergence area of Chikkar reservoir is in Ahwa taluka of Dangs district in Gujarat. The nearest railway station for Chikkar reservoir is Waghai. The Chikkar reservoir is approachable from Waghai in Dangs district of Gujarat. The nearest airport from the proposed Chikkar dam site is Surat, which is about 160 km.

Dabdar reservoir is proposed across river Kapri a tributary of river Ambica near village Dabdar in Ahwa taluka of Dangs district in Gujarat. The entire submergence area of Dabdar reservoir is in Ahwa taluka of Dangs district in Gujarat. The nearest railway station for Dabdar reservoir is Waghai. The Dabdar reservoir is approachable from Waghai in Dangs district of Gujarat. The nearest airport from the proposed Dabdar dam site is Surat, which is about 160 km.

Kelwan reservoir is proposed across river Purna near village Kelwan and Kakarda in Ahwa taluka of Dangs district in Gujarat. The entire submergence area of Kelwan reservoir is in Ahwa taluka of Dangs district in Gujarat. The nearest railway station for Kelwan reservoir is Vyara, a taluka head quarter in Surat district of Gujarat. The Kelwan reservoir is approachable from Vyara in Surat district of Gujarat. The nearest airport from the proposed Kelwan dam site is Surat, which is about 100 km.

12.1.1.1 Demography

The total population (as per census of 2011) of the districts in the catchment area of Par-Tapi-Narmada link project is presented in Table – 12.1.

Table – 12.1
Demographic Details in Catchment Area of Par-Tapi-Narmada Link

State/ District	Total Population		Male Population		Female Population		Sex Ratio / 1000 Males	SC Population		ST Population	
	Number	Number	%	Number	%	Number		%	Number	%	
Maharashtra											
Nasik	6107187	3157186	52	2950001	48	934	554687	9	1564369	26	
Gujarat											
Valsad	1705678	887222	52	818456	48	922	38237	2	902794	53	
Vadodara	4165626	2153736	52	2011890	48	934	221629	5	1149901	28	
Narmada	590297	301086	51	289211	49	960	8733	2	481392	82	
Bharuch	1551019	805707	52	745312	48	925	62235	4	488194	32	
Surat	6081322	3402224	56	2679098	48	787	158115	3	856952	14	
Navsari	1329672	678165	51	651507	49	961	35464	3	639659	48	
Dangs	228291	113821	50	114470	50	1006	992	1	216073	95	

It can be seen from the above table that the male population varies from 50% in Dangs district to 56% in Surat district and female population varies from 48% in Narmada, Valsad, Vadodara, Bharuch and Surat district to 50% in Dangs district. The Scheduled Caste (SC) population varies from 1% in Dangs district to 9% in Nasik district and Scheduled Tribe (ST) population varies from 14% in Surat district to 95% in Dangs district.

12.1.1.2 Agriculture

The population inhabiting in and around the study area of the project is mainly dependent on agriculture and collection of forest produce for their livelihood. Paddy, pulses, fodder, wheat, oilseeds and vegetables are the dominant crops grown in the Par-Tapi-Narmada link project area, mostly under rain fed condition. Jowar, ragi, bajra, maize, linseed, groundnut and onion are also grown in limited area. The agriculture in most of the areas is

under rain fed and the Irrigation facilities are limited from few minor irrigation projects only.

12.1.1.3 Literacy

The district-wise literacy status as per the census 2011 is given in Table–12.2.

Table – 12.2

Literacy Rate in Catchment Area of Par-Tapi-Narmada Link Project

State/ District	Male Literacy		Female Literacy		Total Literacy	
	Number	%	Number	%	Number	%
Nasik	2397538	76	1947828	66	4345366	71
Valsad	655528	74	515129	63	1170657	69
Vadodara	1614087	75	1278993	64	2893080	69
Narmada	211767	70	158569	55	370336	63
Bharuch	623047	77	495229	66	1118276	72
Surat	2687468	79	1883942	70	4571410	75
Navsari	539471	80	462438	71	1001909	75
Dangs	77314	68	63654	56	140968	62

It is clear from the above table that the literacy rate varies from 62% in Dangs district to 75% in Navsari and Surat districts. The male literacy rate varies from 68% in Dangs district to 80% in Navsari district, whereas the female literacy rate varies from 55% in Narmada district to 71% in Navsari district.

12.1.2 Salient Features of the Link

Par-Tapi-Narmada Link Project has been planned to transfer surplus waters of West flowing Par, Auranga, Ambica and Purna river basins of South Gujarat and neighbouring Maharashtra to provide irrigation facilities to: the areas on its enroute: tribal areas enroute right side of the link canal; tribal dominant districts of Dang and Valsad of Gujarat and Nasik district of Maharashtra; command area of five projects proposed by Government of Gujarat in its initial reaches to caters the water demands for irrigation and

drinking purposes in its enroute; and take over the part command area of existing Miyagam Branch Canal of Narmada Canal System. The Narmada waters so saved in Sardar Sarovar Project would be utilized to provide irrigation facilities: in tribal areas of Naswadi, Kavant, Sankheda, Jetpur Pavi, Chhota Udepur talukas of Chhota Udepur district and Halol, Ghogamba and Kalol talukas of Panchmahal district by lift directly from Narmada Main Canal on substitution basis; and in drought affected Saurashtra region of Gujarat on substitution basis through Narmada Canal System to meet irrigation, domestic and other requirements. In addition to this, all possible Panchayat / village tanks coming in the vicinity of the project will be filled up. The project will also provide drinking water to tribal population in the vicinity.

The Par-Tapi-Narmada link project comprises construction of 6 dams viz Jheri across river Par in Peint taluka of Nasik district in Maharashtra; Paikhed across river Nar a tributary of river Par, Chasmandva across river Tan a tributary of river Auranga both in Dharampur taluka of Valsad district; Chikkar across river Ambica, Dabdar across river Khapri a tributary of river Ambica and Kelwan across river Purna all in Ahwa taluka of Dangs district in Gujarat. Also construction of 2 diversion barrages one each in the downstream of Paikhed and Chasmandva dams, 6 power houses, 1 tunnel of length 12.7 km and construction of 406.118 km long link canal (including feeder pipe lines of total length 37.075 km and 5 tunnel along the link canal of total length 1.15 km) passing through Dharampur taluka of Valsad district, Ahwa taluka of Dangs district, Vansda taluka of Navsari district, Vyara and Songadh talukas of Tapi district, Mandvi and Mangrol talukas of Surat district, Valia, Jhagadia and Nandod talukas of Bharuch district, Tailakwada Mahal and Sankheda talukas of Vadodara district of Gujarat connecting all the 6 dams with the existing Miyagam branch canal of Narmada canal system are envisaged.

12.1.3 **Sample Design and Methodology**

Total 61 villages (one fully and 60 partly) are likely to be affected due to creation of proposed Jheri, Paikhed, Chasmandva, Chikkar, Dabdar and Kelwan reservoirs. The Socio-economic survey has been carried out in all the

above affected villages covering 2509 families. For assessment of present Socio-economic status and community profile of the project area the information from both secondary and primary sources has been collected and used. The data from primary sources has been collected through questionnaire. The village wise information has been collected by the investigators from villagers, talati and other sources in each village through a village survey schedule covering different socio-economic parameters including demographic profile, land ownership, operational holdings, cropping pattern, agriculture practices, agriculture input pattern, animal husbandry, poultry etc., employment, income and expenditure, social infrastructure facilities, public health issues, gender, tourism, migration, education etc.

The information at household level was collected through household interview schedule designed with specific questionnaires to facilitate interviewing the villagers in project affected as well project influenced villages, consisting the variables like family composition, education, housing facilities, drinking water, land holding, irrigation facilities, sanitation, employment, income, occupation, migration, rehabilitation and resettlement options, rehabilitation and resettlement package, location preference, compensation, participation of the people in implementation of the project, willingness to pay by the users for assured water supply etc. Head of the family were the respondents. Household level information has been used to know the personal profile of the respondents and problems being faced / to be faced by them.

12.1.3.1 Selection of Villages

Creation of proposed reservoirs at Jheri, Paikhed, Chasmandva, Chikkar, Dabdar and Kelwan will affect 61 villages (villages under reservoirs Jheri – 6, Paikhed - 11, Chasmandva - 7, Chikkar - 9, Dabdar - 11 and Kelwan - 17). Socio-economic survey has been carried out in all these 61 villages.

12.1.3.2 Selection of Households

All the households in all the 61 villages likely to be affected due to projects are covered in socio-economic survey.

12.1.4 Questionnaire

To collect the data on the present socio-economic status of the Project Affected People two type of questionnaire were developed: one for Socio-economic survey of the households and other for village level data and information. The Socioeconomic questionnaires for house hold survey in the field were formulated on the basis of feedback received. The village questionnaire was prepared to collect information on recourse base of the village. The questionnaires for household and village surveys are at Annexure 12.1 and Annexure 12.2 respectively in Volume - II.

12.1.5 Profile of the Study Area

As already discussed in earlier paras, Par-Tapi-Narmada link project envisages construction of 6 dams viz i) Jheri dam across river Par, ii) Paikhed dam across river Nar (a tributary of river Par), iii) Chasmandva dam across river Tan (a tributary of river Auranga), iv) Chikkar dam across river Ambica, v) Dabdar dam across river Kapri (a tributary of river Ambica) and vi) Kelwan dam across river Purna. Due to creation of these 6 reservoirs 61 villages (Jheri – 6 partially, Paikhed –11 partially, Chasmandva – 7 partially, Chikkar –9 partially, Dabdar –11 partially and Kelwan – 1 fully and 16 partially) are likely to be affected. The affected villages are located in Surgana and Peint talukas of Nasik district in Maharashtra and Dharampur taluka of Valsad, Vansda taluka of Navsari and Ahwa taluka of Dangs districts in Gujarat. About 6065 ha area (Jheri – 836 ha, Paikhed – 994 ha, Chasmandva – 615 ha, Chikkar – 742 ha, Dabdar – 1249 ha and Kelwan – 1629 ha) will come under submergence of the above 6 reservoirs. It is estimated that, about 2509 families (Jheri–98, Paikhed–331, Chasmandva–379, Chikkar–345, Dabdar–563 and Kelwan–793) from 61 villages will be affected. Details are given in Table 12.3 to 12.8 respectively.

Table 12.3

Villages Likely to be Affected by Jheri Reservoir

Sl. No.	Village	Taluka	District	State	Fully / Partially
1	Khirdi	Surgana	Nasik	Maharashtra	Partially
2	Khokarvihir	Surgana	Nasik	Maharashtra	Partially
3	Kayare	Peint	Nasik	Maharashtra	Partially
4	Gandole	Peint	Nasik	Maharashtra	Partially
5	Modhal pada	Surgana	Nasik	Maharashtra	Partially
6	Ambe pada	Surgana	Nasik	Maharashtra	Partially

Table 12.4

Villages Likely to be Affected by Paikhed Reservoir

Sl. No.	Village	Taluka	District	State	Fully / Partially
1	Paikhed	Dharampur	Valsad	Gujarat	Partially
2	Gundiya	Dharampur	Valsad	Gujarat	Partially
3	Khadki	Dharampur	Valsad	Gujarat	Partially
4	Madhuri	Dharampur	Valsad	Gujarat	Partially
5	Chavra	Dharampur	Valsad	Gujarat	Partially
6	Khapatiya	Dharampur	Valsad	Gujarat	Partially
7	Santvankal	Dharampur	Valsad	Gujarat	Partially
8	Tutarkhed	Dharampur	Valsad	Gujarat	Partially
9	Karanjul	Surgana	Nasik	Maharashtra	Partially
10	Rakshas bhuvan	Surgana	Nasik	Maharashtra	Partially
11	Bendval	Surgana	Nasik	Maharashtra	Partially

Table 12.5

Villages Likely to be Affected by Chasmandva Reservoir

Sl. No.	Village	Taluka	District	State	Fully / Partially
1	Chasmandva	Dharampur	Valsad	Gujarat	Partially
2	Jugiri	Dharampur	Valsad	Gujarat	Partially
3	Chorvani	Vansda	Navsari	Gujarat	Partially
4	Nirpan	Vansda	Navsari	Gujarat	Partially
5	Nadagheri	Dharampur	Valsad	Gujarat	Partially
6	Mandhu	Surgana	Nasik	Maharashtra	Partially
7	Ragatvihir	Surgana	Nasik	Maharashtra	Partially

Table 12.6

Villages Likely to be Affected by Chikkar Reservoir

Sl. No.	Village	Taluka	District	State	Fully / Partially
1	Khirdi	Ahwa	Dangs	Gujarat	Partially

	(Chikkar)				
2	Barkhadhia	Ahwa	Dangs	Gujarat	Partially
3	Baj	Ahwa	Dangs	Gujarat	Partially
4	Eanbhas (Rambhas)	Ahwa	Dangs	Gujarat	Partially
5	Susarda	Ahwa	Dangs	Gujarat	Partially
6	Kunda	Ahwa	Dangs	Gujarat	Partially
7	Sakarpatal	Ahwa	Dangs	Gujarat	Partially
8	Khirmani	Ahwa	Dangs	Gujarat	Partially
9	Lahan Dabdar	Ahwa	Dangs	Gujarat	Partially

Table 12.7
Villages Likely to be Affected by Dabdar Reservoir

Sl. No.	Village	Taluka	District	State	Fully / Partially
1	Gira	Ahwa	Dangs	Gujarat	Partially
2	Kudkas	Ahwa	Dangs	Gujarat	Partially
3	Kukadnakhi	Ahwa	Dangs	Gujarat	Partially
4	Chichigaontha	Ahwa	Dangs	Gujarat	Partially
5	Dhadhra	Ahwa	Dangs	Gujarat	Partially
6	Bhawadi	Ahwa	Dangs	Gujarat	Partially
7	Pimpri	Ahwa	Dangs	Gujarat	Partially
8	Dabdar	Ahwa	Dangs	Gujarat	Partially
9	Ghodi	Ahwa	Dangs	Gujarat	Partially
10	Ghodhalpada	Ahwa	Dangs	Gujarat	Partially
11	Malin	Ahwa	Dangs	Gujarat	Partially

Table 12.8
Villages Likely to be Affected by Kelwan Reservoir

Sl. No.	Village	Taluka	District	State	Fully / Partially
1	Kakarda	Ahwa	Dangs	Gujarat	Partially
2	Bhongdya	Ahwa	Dangs	Gujarat	Partially
3	Enginepada	Ahwa	Dangs	Gujarat	Partially
4	Tekpada	Ahwa	Dangs	Gujarat	Partially
5	Patli	Ahwa	Dangs	Gujarat	Partially
6	Wankan	Ahwa	Dangs	Gujarat	Fully
7	Khopri Amba	Ahwa	Dangs	Gujarat	Partially
8	Bhujad	Ahwa	Dangs	Gujarat	Partially
9	Kalibel	Ahwa	Dangs	Gujarat	Partially
10	Godadiya	Ahwa	Dangs	Gujarat	Partially
11	Pandharmal	Ahwa	Dangs	Gujarat	Partially
12	Bhalkhet	Ahwa	Dangs	Gujarat	Partially
13	Masli	Ahwa	Dangs	Gujarat	Partially
14	Khatal	Ahwa	Dangs	Gujarat	Partially

15	Divdayawan	Ahwa	Dangs	Gujarat	Partially
16	Chikkar	Ahwa	Dangs	Gujarat	Partially
17	Chikhala	Ahwa	Dangs	Gujarat	Partially

The affected families from 61 affected villages are to be rehabilitated and resettled. A socio-economic survey has been conducted as part of Environmental Impact Assessment studies of the project by the study teams of Water and Power Consultancy Services India Limited in these villages to facilitate in-depth understanding of the present socio-economic status of people, perception of the people regarding implementation of the project and also their attitude towards Rehabilitation and Resettlement of the affected families, so that suitable Rehabilitation and Resettlement measures could be suggested to minimise the adverse impact of the project on the project affected families. The Socio-economic profile of the villages of the project area is described in the following paragraphs:

12.1.5.1 Jheri Reservoir

i) Demography: Total population of all the 6 villages is 5733 spread over 1030 households. Thus, the average number of members per household is about 6. Population of males in Jheri reservoir area is 2865, while that of the females is 2868. The average sex ratio in the project area is 1001. Details are given in Table 12.9.

Table 12.9

Demographic Details in Submergence Area of Jheri Reservoir

Sl. No.	Village	Taluka	District	No. of House Holds	Household Members			Sex Ratio (no. of Females / 1000 Males)
					Male	Female	Total	
1	Khirdi	Surgana	Nasik	199	530	531	1061	1001
2	Khokarvihir	Surgana	Nasik	130	356	363	719	1019
3	Kayare	Peint	Nasik	110	265	274	539	1033
4	Gandole	Peint	Nasik	126	368	366	734	994
5	Modhalpada	Surgana	Nasik	101	285	295	580	1035
6	Ambe	Surgana	Nasik	364	1061	1039	2100	979
Total				1030	2865	2868	5733	1001

(Source: enumerated by the investigators themselves)

ii) Caste: The number of Schedule Caste (SC) and Scheduled Tribe (ST) households in the project affected villages are 9 and 747 respectively. Number of families belonging to Other Backward Class (OBC) is 274. Maximum ST

families 274 are found in village Ambe followed by Khirdi 144, Kayare 108, Khokarvahir 99, Gandole 67 and Modhalpada 55. Details are given in Table 12.10.

Table 12.10

SC, ST and OBC Households in Submergence Area of Jheri Reservoir

Sl. No.	Village	Taluka	District	Number of Families			
				SC	ST	OBC	Total
1	Khirdi	Surgana	Nasik	5	144	50	199
2	Khokarvahir	Surgana	Nasik	0	99	31	130
3	Kayare	Peint	Nasik	1	108	1	110
4	Gandole	Peint	Nasik	1	67	58	126
5	Modhalpada	Surgana	Nasik	2	55	44	101
6	Ambe	Surgana	Nasik	0	274	90	364
Total				9	747	274	1030

(Source: enumerated by the investigators themselves)

iii) Educational Facilities: All the 6 affected villages are having at least one primary school. In village Ambe, there are 2 primary schools. In only one village Ambe, there is one middle school and this facility for Khokarvahir and Kayare village is available within 5 km distance, and for other villages available at a distance of about more than 5 to 10 km. There are no other schools in the said villages. The average distance of college from respective village is reported to be more than 10 km. Details are given in Table 12.11.

Table 12.11

Details of Schools available in Submergence Area of Jheri reservoir

Sl. No.	Village	Taluka	District	Number of Schools			Distance of College (km)
				Primary	Middle	Others	
1	Khirdi	Surgana	Nasik	1	>10	0	>10
2	Khokarvahir	Surgana	Nasik	1	< 5	0	>10
3	Kayare	Peint	Nasik	1	<5	0	>10
4	Gandole	Peint	Nasik	1	>10	0	>10
5	Modhalpada	Surgana	Nasik	1	5 to 10	0	>10
6	Ambe	Surgana	Nasik	2	1	0	>10
Total				7	-	0	>10

(Source: enumerated by the investigators themselves)

iv) **Land Use Pattern:** Total geographical area of all 6 villages affected due to Jheri Reservoir is about 7443 ha, out of which 81% area forest land is followed by agriculture land of 16% and remaining 3% land belongs to other categories like homestead land and etc. Details are given in Table- 12.12.

Table- 12.12

Land Use Pattern in Submergence Area of Jheri Reservoir

Sl. No.	Village	Land Use (ha)			
		Agriculture	Forest	Others	Total
1	Khirdi	89	1104	44	1237
2	Khokarvihir	187	1052	48	1287
3	Kayare	322	1472	66	1860
4	Gandole	114	1027	12	1153
5	Modhalpada	123	347	14	484
6	Ambe	320	1035	67	1422
Total		1155	6037	251	7443
Percentage		16	81	3	100

(Source: enumerated by the investigators themselves)

v) **Sources of Water:** The villagers in the project area fetch water from different sources including hand pumps, wells, ponds and others. These sources of water are being used for other purpose also like sanitation, washing utensils, bathing of cattle etc. Hand pumps and others are available in all the villages whereas wells, ponds are not available only in villages Kayare, Modhalpada. Details are given in Table-12.13.

Table- 12.13

Sources of Water in Submergence Area of Jheri Reservoir

Sl. No.	Village	Source of Water for Drinking and Other Purposes			
		Hand pump	Wells	Ponds	Others
1	Khirdi (Chikkar)	✓	✓	✓	✓
2	Khokarvihir	✓	✓	✓	✓
3	Kayare	✓			✓
4	Gandole	✓	✓	✓	✓
5	Modhalpada	✓			✓
6	Ambe	✓	✓	✓	✓

(Source: enumerated by the investigators themselves)

vi) Power Supply: Power supply in the village except Gandole is available for domestic, agricultural and all other purpose. Details are given in Table 12.14.

Table 12.14

Power Supply in Submergence Area of Jheri Reservoir

Sl. No.	Village	Taluka	District	Power Supply for			
				Domestic	Agricultural	Other Purpose	All Purpose
1	Khirdi	Surgana	Nasik	✓	✓	✓	✓
2	Khokarvihir	Surgana	Nasik	✓	✓	✓	✓
3	Kayare	Peint	Nasik	✓	✓	✓	✓
4	Gandole	Peint	Nasik	X	X	X	X
5	Modhalpada	Surgana	Nasik	✓	✓	✓	✓
6	Ambe	Surgana	Nasik	✓	✓	✓	✓

(Source: enumerated by the investigators themselves)

vii) Health Facilities: Hospital facilities and Maternity and child welfare centres are available for all villages in project area at a distance of less than 10 km. Primary health centres are available for all villages at a distance of less than 10 km except for the village Modhalpada, where PHC is available within 5 to 10 km and in village Ambe PHC is not available. Details are given in Table- 12.15.

Table- 12.15

Details of Hospitals in Submergence Area of Jheri Reservoir

Sl. No.	Village	Taluka	District	Medical Facilities Available (Within Range in km)		
				Allopathic Hospital	Maternity and Child Welfare Centre	Primary Health Centre
1	Khirdi	Surgana	Nasik	<10	<10	<10
2	Khokarvihir	Surgana	Nasik	<10	<10	<10
3	Kayare	Peint	Nasik	<10	<10	<10
4	Gandole	Peint	Nasik	<10	<10	<10
5	Modhalpada	Surgana	Nasik	<10	<10	5 to 10
6	Ambe	Surgana	Nasik	<10	<10	x

(Source: enumerated by the investigators themselves)

viii) Post and Telephones: The Post offices are available within range of 5 to 10 km. The facility of telephone connection is also available in all the villages of more than 10 km distance. Details are given in Table 12.16.

Table 12.16

Post Office and Telephone Facilities in Submergence Area of Jheri Reservoir

Sl. No.	Village	Taluka	District	Facilities Available (Within Range in km)	
				Post Office	Telephone
1	Khirdi	Surgana	Nasik	>10	>10
2	Khokarvahir	Surgana	Nasik	>5	>10
3	Kayare	Peint	Nasik	>5	>10
4	Gandole	Peint	Nasik	>10	>10
5	Modhalpada	Surgana	Nasik	5 to 10	>10
6	Ambe	Surgana	Nasik	>10	>10

(Source: enumerated by the investigators themselves)

ix) Transport Facility: Transport facility including plying of private/government vehicles was available in all the villages. The approach paved road available for all villages. Details are given in Table 12.17.

Table 12.17

Details of Transport Facilities in Submergence Area of Jheri Reservoir

Sl. No	Village	Taluka	District	State	Approach to Village		
					Approach Paved Road	Nearest Town	Distance from Nearest Town (km)
1	Khirdi	Surgana	Nasik	Maharashtra	✓	Nasik	100
2	Khokarvahir	Surgana	Nasik	Maharashtra	✓	Nasik	82
3	Kayare	Peint	Nasik	Maharashtra	✓	Nasik	65
4	Gandole	Peint	Nasik	Maharashtra	✓	Nasik	95
5	Modhal pada	Surgana	Nasik	Maharashtra	✓	Nasik	91
6	Ambe pada	Surgana	Nasik	Maharashtra	✓	Nasik	85

(Source: enumerated by the investigators themselves)

x) Banking and Credit Societies Facilities: Banks are not available in all the villages of the study area. For banking purpose, people go to different banks which are situated at an average distance of more than 10 km. Agriculture credit societies available in Ambe village, for 3 villages located at an average distance of more than 5 to 10 km, for 2 villages located at an average distance of more than 10 km and Non-Agriculture Credit Societies are also located at an average distance of more than 10 km. People are getting help from these societies, similarly, Other credit societies are also available at an average distance of more than 10 km. Details are given in Table 12.18.

Table 12.18
Banking and Credit Society Facilities in Submergence Area of Jheri Reservoir

Sl. No.	Village	Taluka	District	Banking / Credit Society Facilities Available (Within Range in km)			
				Banking	Agri. Credit Society	Non-Agri. Credit Society	Other Credit Society
1	Khirdi	Surgana	Nasik	x	>10	>10	>10
2	Khokarvihir	Surgana	Nasik	x	>10	>10	>10
3	Kayare	Peint	Nasik	x	5 to 10	>10	>10
4	Gandole	Peint	Nasik	x	5 to 10	>10	>10
5	Modhalpada	Surgana	Nasik	x	5 to 10	>10	>10
6	Ambe	Surgana	Nasik	x	✓	>10	>10

(Source: enumerated by the investigators themselves)

12.1.5.2 Paikhed Reservoir

- i) **Demography:** The total population of all the 11 villages is 7360 spread over 1475 households. Thus, the average number of members per household is 5. Population of males in Paikhed reservoir area is 3826, while that of the females is 3534. The average sex ratio in the project area is 924. Details are given in Table 12.19.

Table 12.19
Demographic Details in Submergence Area of Paikhed Reservoir

Sl. No.	Village	Taluka	District	No. of	Household Members	Sex Ratio (no. of
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				House holds	Male	Female	Total	Females/ 1000 Males)
1	Paikhed	Dharampur	Valsad	156	351	332	683	946
2	Gundiya	Dharampur	Valsad	334	995	914	1909	919
3	Khadki	Dharampur	Valsad	123	344	317	661	922
4	Madhuri	Dharampur	Valsad	68	199	183	382	920
5	Chavra	Dharampur	Valsad	117	298	274	572	919
6	Khapatiya	Dharampur	Valsad	70	168	156	324	929
7	Santvankal	Dharampur	Valsad	62	160	148	308	925
8	Tutarkhed	Dharampur	Valsad	176	521	480	1001	921
9	Karanjul	Surgana	Nasik	150	291	269	560	924
10	R.Bhuwan	Surgana	Nasik	147	340	315	655	926
11	Bendval	Surgana	Nasik	72	159	146	305	918
Total				1475	3826	3534	7360	924

(Source: enumerated by the investigators themselves)

- ii) **Caste:** The number of Schedule Caste (SC) and Scheduled Tribe (ST) households in the project affected villages was 14 and 1434 respectively. Number of families belonging to Other Backward Class (OBC) category is 27. Maximum ST families 325 are found in village Gundiya. Details are given in Table 12.20.

Table 12.20

SC, ST and OBC Households in Submergence Area of Paikhed Reservoir

Sl. No.	Village	Taluka	District	Number of families			
				SC	ST	OBC	Total
1	Paikhed	Dharampur	Valsad	2	154	0	156
2	Gundiya	Dharampur	Valsad	3	325	6	334
3	Khadki	Dharampur	Valsad	1	118	4	123
4	Madhuri	Dharampur	Valsad	0	68	0	68
5	Chavra	Dharampur	Valsad	2	113	2	117
6	Khapatiya	Dharampur	Valsad	0	70	0	70
7	Santvankal	Dharampur	Valsad	0	62	0	62
8	Tutarkhed	Dharampur	Valsad	4	166	6	176
9	Karanjul	Surgana	Nasik	1	143	6	150
10	Rakshashbuvan	Surgana	Nasik	1	143	3	147
11	Bendval	Surgana	Nasik	0	72	0	72
Total				14	1434	27	1475

(Source: enumerated by the investigators themselves)

iii) Educational Facilities: All the 11 affected villages are having at least one primary school, except in village Gundiya there are 2 primary schools. In villages Bhendval, the middle schools are at a distance more than about 5 to 10 km and where as for viilages Karanjul and Rakshasbhuwan the middle schools are available at a distance more than about 10 km. There are no other schools in the said villages. The average distance of college from respective village is reported to be more than 10 km. Details are given in Table 12.21.

Table 12.21

Details of School Available in Submergence Area of Paikhed Reservoir

Sl. No.	Village	Taluka	District	Number of Schools			Distance of College (km)
				Primary	Middle	Others	
1	Paikhed	Dharampur	Valsad	1	0	0	>10
2	Gundiya	Dharampur	Valsad	2	0	0	>10
3	Khadki	Dharampur	Valsad	1	0	0	>10
4	Madhuri	Dharampur	Valsad	1	0	0	>10
5	Chavra	Dharampur	Valsad	1	0	0	>10
6	Khapatiya	Dharampur	Valsad	1	0	0	>10
7	Santvankal	Dharampur	Valsad	1	0	0	>10
8	Tutarkhed	Dharampur	Valsad	1	0	0	>10
9	Karanjul	Surgana	Nasik	1	>10	0	>10
10	Rakshas bhuvan	Surgana	Nasik	1	>10	0	>10
11	Bendval	Surgana	Nasik	1	5 to 10	0	>10
Total				12	-	0	>10

(Source: enumerated by the investigators themselves)

iv) Land Use Pattern: Total geographical area of all 11 villages affected due to Paikhed Reservoir is about 5652 ha, out of which 56% area forest land is followed by agriculture land of 41% and remaining 3% land belongs to other categories like homestead land and etc. Village wise land use pattern under Paikhed reservoir is given in Table- 12.22.

Table- 12.22

Land Use Pattern in Submergence Area of Paikhed Reservoir

Sl. No.	Village	Land Use (ha)			
		Agriculture	Forest	Others	Total
1	Paikhed	141	589	5	735
2	Gundiya	938	176	38	1152
3	Khadki	476	0	48	524
4	Madhuri	99	281	10	390
5	Chavra	129	194	0	323
6	Khapatiya	71	111	0	183
7	Santvankal	68	217	0	286
8	Tutarkhed	115	486	0	601
9	Karanjul	117	483	20	620
10	Rakshasbhuvan	112	411	27	550
11	Bendwal	60	217	11	288
Total		2326	3166	159	5652
Percentage		41	56	3	100

(Source: enumerated by the investigators themselves)

v) **Sources of Water:** The villagers in the project area fetch water from different sources including hand pumps, wells, river and other sources. These sources of water are being used for other purpose also like sanitation, washing utensils, bathing of cattle etc. Details are given in Table-12.23.

Table 12.23

Details of Sources of Water in Submergence Area of Paikhed Reservoir

Sl. No.	Village	Source of Water for Drinking and Other Purposes			
		Hand pump	Well	River	Others
1	Paikhed	✓	✓	✓	✓
2	Gundiya	✓	✓	✓	✓
3	Khudki	✓	✓	✓	✓
4	Madhuri	✓	✓	✓	✓
5	Chavra	✓	✓	✓	✓
6	Khapatiya	✓	✓	✓	✓
7	Satvankal	✓	✓	✓	✓
8	Tutrkhed	✓	✓	✓	✓
9	Karanjul	✓	✓	✓	✓
10	Rakshas Bhuwan	✓	✓	✓	✓
11	Bhendval	✓	✓	✓	✓

(Source: enumerated by the investigators themselves)

vi) Power Supply: Power supply for domestic use is available in all project affected villages, except village Khadki. In 5 villages power supply for agriculture purpose is available and in 4 villages power supply for other and all purposes is available. Details are given in Table 12.24.

Table 12.24

Details of Power Supply in Submergence Area of Paikhed Reservoir

Sl. No	Village	Taluka	District	Power supply for			
				Domestic	Agricultural	Other Purpose	All Purpose
1	Paikhed	Dharampur	Valsad	✓	X	X	X
2	Gundiya	Dharampur	Valsad	✓	✓	X	X
3	Khadki	Dharampur	Valsad	X	X	X	X
4	Madhuri	Dharampur	Valsad	✓	✓	✓	✓
5	Chavra	Dharampur	Valsad	✓	X	X	X
6	Khapatiya	Dharampur	Valsad	✓	X	X	X
7	Santvankal	Dharampur	Valsad	✓	X	X	X
8	Tutarkhed	Dharampur	Valsad	✓	X	X	X
9	Karanjul	Surgana	Nasik	✓	✓	✓	✓
10	Rakshas bhuvan	Surgana	Nasik	✓	✓	✓	✓
11	Bendval	Surgana	Nasik	✓	✓	✓	✓

(Source: enumerated by the investigators themselves)

vii) Health Facilities: Hospital facilities, Maternity and child welfare and Primary health centres are available for all the villages in the project area at an average distance of more than 10 km. Details are given in Table- 12.25.

Table 12.25

Village-wise Hospitals in Submergence Area of Paikhed Reservoir

Sl. No	Village	Taluka	District	Medical Facilities (Within Range in km)		
				Allopathic Hospital	Maternity and Child Welfare Centre	Primary Health Centre
1	Paikhed	Dharampur	Valsad	>10	>10	>10
2	Gundiya	Dharampur	Valsad	>10	>10	>10
3	Khadki	Dharampur	Valsad	>10	>10	>10
4	Madhuri	Dharampur	Valsad	>10	>10	>10
5	Chavra	Dharampur	Valsad	>10	>10	>10

6	Khapatiya	Dharampur	Valsad	>10	>10	>10
7	Santvankal	Dharampur	Valsad	>10	>10	>10
8	Tutarkhed	Dharampur	Valsad	>10	>10	>10
9	Karanjul	Surgana	Nasik	>10	>10	>10
10	Rakshasbhuvan	Surgana	Nasik	>10	>10	>10
11	Bendval	Surgana	Nasik	>10	>10	>10

(Source: enumerated by the investigators themselves)

Viii) Post and Telephones: Post offices not available in most of the project affected villages and available in only one village ie Gundiya, where as in Paikhed and Bendval villages post office facility available at a distance of more than 5 to 10 km and at village Karanjul available within 5 km distance. The facility of telephone connections is available in all villages at a distance of about more than 10 km. Details are given in Table 12.26.

Table 12.26

Post and Telephones in Submergence Area of Paikhed Reservoir

Sl. No.	Village	Taluka	District	Facilities Available (within Range in km)	
				Post Office	Telephone connection
1	Paikhed	Dharampur	Valsad	5 to 10	>10
2	Gundiya	Dharampur	Valsad	✓	>10
3	Khadki	Dharampur	Valsad	x	>10
4	Madhuri	Dharampur	Valsad	x	>10
5	Chavra	Dharampur	Valsad	x	>10
6	Khapatiya	Dharampur	Valsad	x	>10
7	Santvankal	Dharampur	Valsad	x	>10
8	Tutarkhed	Dharampur	Valsad	x	>10
9	Karanjul	Surgana	Nasik	< 5	>10
10	Rakshasbhuvan	Surgana	Nasik	x	>10
11	Bendval	Surgana	Nasik	5 to 10	>10

(Source: enumerated by the investigators themselves)

ix) Transport Facility: Transport facility including plying of private / government vehicles was available in all the villages. The approach paved road available for all villages. The details regarding approach to village from nearest town and distances are given in Table 12.27.

Table 12.27

Details of Transport Facilities in Submergence Area of Paikhed Reservoir

Sl.	Village	Taluka	District	State	Approach to Village
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No					Approach Paved Road	Nearest Town	Distance from Nearest Town (km)
1	Paikhed	Dharampur	Valsad	Gujarat	✓	Dharampur	40
2	Gundiya	Dharampur	Valsad	Gujarat	✓	Dharampur	40
3	Khadki	Dharampur	Valsad	Gujarat	✓	Dharampur	44
4	Madhuri	Dharampur	Valsad	Gujarat	✓	Dharampur	44
5	Chavra	Dharampur	Valsad	Gujarat	✓	Dharampur	48
6	Khapatiya	Dharampur	Valsad	Gujarat	✓	Dharampur	50
7	Santvankal	Dharampur	Valsad	Gujarat	✓	Dharampur	45
8	Tutarkhed	Dharampur	Valsad	Gujarat	✓	Dharampur	45
9	Karanjul	Surgana	Nasik	Maharashtra	✓	Nasik	111
10	Rakshas bhuvan	Surgana	Nasik	Maharashtra	✓	Nasik	107
11	Bendval	Surgana	Nasik	Maharashtra	✓	Nasik	119

(Source: enumerated by the investigators themselves)

x) Banking and Credit Society Facilities: Banks are not available in all the villages of the study area. For banking purpose, people go to different banks which are situated at an average distance of more than 10 km. Agriculture credit societies available in Gundiya village, for 1 village located at an average distance of more than 5 to 10 km, for 6 villages located at an average distance of more than 10 km and Non-Agriculture Credit Societies are also located at an average distance of more than 10 km, except village Bendval where the facility is available within 5 km. People are getting help from these societies. Similarly, other credit societies are also available at an average distance of more than 10 km. Details are given in Table 12.28.

Table 12.28

Banking and Credit Society Facilities in Submergence Area of Paikhed Reservoir

Sl. No	Village	Taluka	District	Banking / Credit Society Facilities Available (Within Range in km)			
				Banking	Agri Credit Society	Non-Agri. Credit Society	Other Credit Society
1	Paikhed	Dharampur	Valsad	>10	>10	>10	>10
2	Gundiya	Dharampur	Valsad	>10	✓	>10	>10
3	Khadki	Dharampur	Valsad	>10	>10	>10	>10
4	Madhuri	Dharampur	Valsad	>10	x	>10	>10

5	Chavra	Dharampur	Valsad	>10	>10	>10	>10
6	Khapatiya	Dharampur	Valsad	>10	x	>10	>10
7	Santvankal	Dharampur	Valsad	>10	x	>10	>10
8	Tutarkhed	Dharampur	Valsad	x	>10	>10	>10
9	Karanjul	Surgana	Nasik	>10	>10	>10	>10
10	Rakshas bhuvan	Surgana	Nasik	>10	>10	>10	>10
11	Bendval	Surgana	Nasik	5 to 10	5 to 10	< 5	>10

(Source: enumerated by the investigators themselves)

12.1.5.3 Chasmandva Reservoir

i) Demography: The total population of all the 7 villages as per the Census 2011 is 9702 spread over 2122 households. Thus, the average number of members per household is 5. Population of males in Chasmandva reservoir area is 4884, while that of the females is 4818. The average sex ratio in the project area is 986. Details are given in Table 12.29.

Table 12.29
Demographic Details in Submergence Area of Chasmandva Reservoir

Sl. No.	Village	Taluka	District	No. of House holds	Household Members			Sex Ratio (no. of Females / 1000 Males)
					Male	Female	Total	
1	Chasmandva	Dharampur	Valsad	131	293	292	585	997
2	Jugiri	Dharampur	Valsad	324	859	845	1704	984
3	Chorvani	Vansda	Navsari	429	968	958	1926	990
4	Nirpan	Dharampur	Valsad	246	554	535	1089	966
5	Nadagheri	Dharampur	Valsad	394	961	951	1912	990
6	Mandhu	Surgana	Nasik	295	622	619	1241	995
7	Ragatvihir	Surgana	Nasik	303	627	618	1245	986
Total				2122	4884	4818	9702	986

(Source: enumerated by the investigators themselves)

ii) Caste: The number of Schedule Caste (SC) and Scheduled Tribe (ST) households in the project affected villages is 14 and 2092 respectively. Number of families belonging to Other Backward Class (OBC) category is 16. Maximum ST Families 419 are found in village Chorvani. Details are given in Table 12.30.

Table 12.30
SC, ST and OBC Households in Submergence Area of Chasmandva Reservoir

Sl. No.	Village	Taluka	District	Number of Families			
				SC	ST	OBC	Total
1	Chasmandva	Dharampur	Valsad	1	130	0	131
2	Jugiri	Dharampur	Valsad	2	322	0	324
3	Chorvani	Vansda	Navsari	3	419	7	429
4	Nirpan	Dharampur	Valsad	2	244	0	246
5	Nadagdhari	Dharampur	Valsad	3	387	4	394
6	Mandhu	Surgana	Nasik	1	291	3	295
7	Ragatvahir	Surgana	Nasik	2	299	2	303
Total				14	2092	16	2122

(Source: enumerated by the investigators themselves)

iii) Educational Facilities: All the 7 affected villages are having at least one primary school, except in villages Nadagdhari, Mandhu and Ragatvahir which have 2 primary schools in each village. No village is having middle and other schools. The average distance of college from respective village is reported to be more than 10 km. Details are given in Table 12.31.

Table 12.31
Village-wise Schools in Submergence Area of Chasmandva Reservoir

Sl. No.	Village	Taluka	District	Number of Schools			Distance of College (km)
				Primary	Middle	Others	
1	Chasmandva	Dharampur	Valsad	1	0	0	>10
2	Jugiri	Dharampur	Valsad	1	0	0	>10
3	Chorvani	Vansda	Navsari	1	0	0	>10
4	Nirpan	Dharampur	Valsad	1	0	0	>10
5	Nadagdhari	Dharampur	Valsad	2	0	0	>10
6	Mandhu	Surgana	Nasik	2	0	0	>10
7	Ragatvahir	Surgana	Nasik	2	0	0	>10
Total				10	0	0	>10

(Source: enumerated by the investigators themselves)

iv) Land Use Pattern: Total geographical area of all 7 villages affected due to Chasmandva Reservoir is about 4650 ha, out of which 61% area forest land

is followed by agriculture land of 37% and remaining 2% land belongs to other categories like homestead land and etc. Details are given in Table-12.32.

Table- 12.32

Land Use Pattern in Submergence Area of Chasmandva Reservoir

Sl. No.	Village	Land Use (ha)			
		Agriculture	Forest	Others	Total
1	Chasmandva	92	221	3	316
2	Jugiri	456	543	1	1000
3	Chorvani	366	677	56	1099
4	Nirpan	46	168	6	220
5	Nadagdhari	402	412	13	827
6	Mandhu	204	228	20	452
7	Ragatvahir	154	571	11	736
Total		1720	2820	110	4650
Percentage		37	61	2	100

(Source: enumerated by the investigators themselves)

v) Sources of Water: The villagers in the project area fetch water from different sources including hand pumps, wells, ponds, river and others. These sources of water are being utilised for other purpose also like sanitation, washing utensils, bathing of cattle etc. Details are given in Table-12.33.

Table 12.33

Sources of Water in Submergence Area of Chasmandva Reservoir

Sl. No.	Village	Source of Water for Drinking and Other Purposes				
		Hand pumps	Wells	Pond	River	Others
1	Chasmandva	✓	✓	✓	✓	✓
2	Jugiri	✓	✓	✓	✓	✓
3	Chorvani	✓	✓	✓	✓	✓
4	Nirpan	✓	✓	✓	✓	✓
5	Nadagdhari	✓	✓	✓	✓	✓
6	Mandhu	✓	✓	✓	✓	✓
7	Ragatvahir	✓	✓	✓	✓	✓

(Source: enumerated by the investigators themselves)

vi) Power Supply: Power supply for domestic use is available in all the project affected villages except village Nirpan. In 3 villages namely Chorvani, Mandhu and Ragatvahir Power Supply is available for agriculture, other purposes and all purpose. Details are given in Table 12.34.

Table 12.34

Sources of Energy in Submergence Area of Chasmandva Reservoir

Sl. No	Village	Taluka	District	Power Supply Facilities for			
				Domestic	Agriculture	Other Purpose	All Purpose
1	Chasmandva	Dharampur	Valsad	✓	X	X	X
2	Jugiri	Dharampur	Valsad	✓	X	X	X
3	Chorvani	Vansda	Navsari	✓	✓	✓	✓
4	Nirpan	Dharampur	Valsad	X	X	X	X
5	Nadagdhari	Dharampur	Valsad	✓	X	X	X
6	Mandhu	Surgana	Nasik	✓	✓	✓	✓
7	Ragatvahir	Surgana	Nasik	✓	✓	✓	✓

(Source: enumerated by the investigators themselves)

vii) Health Facilities: Hospital facilities are available for all the villages in the project area but its average distance is more than 10 km. Similarly Maternity and Child Welfare is available at average distance is more than 10 km, where in village Mandhu facility available at average distance of more than 5 to 10 km. Primary health centre are also available at a distance of more than 10 km, except in village Ragatvahir the PHC available at distance more than 5 to 10 km. Details are given in Table- 12.35.

Table 12.35

Village-wise Hospitals in Submergence Area of Chasmandva Reservoir

Sl. No	Village	Taluka	District	Medical Facilities (within range in km)		
				Allopathic Hospital	Maternity and Child Welfare Centre	Primary Health Centre
1	Chasmandva	Dharampur	Valsad	>10	>10	>10
2	Jugiri	Dharampur	Valsad	>10	>10	>10
3	Chorvani	Vansda	Navsari	>10	>10	>10
4	Nirpan	Dharampur	Valsad	>10	>10	>10

5	Nadagdhari	Dharampur	Valsad	>10	>10	>10
6	Mandhu	Surgana	Nasik	>10	5 to 10	>10
7	Ragatvihir	Surgana	Nasik	>10	>10	5 to 10

(Source: enumerated by the investigators themselves)

viii) Post and Telephone: Post office is available in only one village ie Chorvani and in 2 villages, these facilities are available in between 5 to 10 km. Telephone connections are available for Chorvani in between 5 to 10 km and other villages the facilities are available at a distance more than 10 km. Details are given in Table 12.36.

Table 12.36
Post and Telephone Facilities in Submergence Area of Chasmandva Reservoir

Sl. No.	Village	Taluka	District	Facility Available (within range in km)	
				Post Office	Telephone Connection
1	Chasmandva	Dharampur	Valsad	< 5	>10
2	Jugiri	Dharampur	Valsad	5 to 10	>10
3	Chorvani	Vansda	Navsari	✓	5 to 10
4	Nirpan	Dharampur	Valsad	>10	>10
5	Nadagdhari	Dharampur	Valsad	x	>10
6	Mandhu	Surgana	Nasik	x	>10
7	Ragatvihir	Surgana	Nasik	x	>10

(Source: enumerated by the investigators themselves)

ix) Transport Facility: Transport facility including plying of private / government vehicles is available in all the villages. The approach paved road available for all villages. Details are given in Table 12.37.

Table 12.37
Details of Transport Facilities in Submergence Area of Chasmandva Reservoir

Sl. No.	Village	Taluka	District	State	Approach to Village		
					Approach Paved Road	Nearest Town	Distance from Nearest Town (km)
1	Chasmandva	Dharampur	Valsad	Gujarat	✓	Dharampur	27

2	Jugiri	Dharampur	Valsad	Gujarat	✓	Dharampur	32
3	Chorvani	Vansda	Navsari	Gujarat	✓	Dharampur	48
4	Nirpan	Vansda	Valsad	Gujarat	✓	Selvas	29
5	Nandagdhari	Dharampur	Valsad	Gujarat	✓	Dharampur	31
6	Mandhu	Surgana	Nasik	Maharashtra	✓	Wazda	26
7	Ragatvhir	Surgana	Nasik	Maharashtra	✓	Wazda	28

(Source: enumerated by the investigators themselves)

x) Banking and Credit Society Facilities: Banks are not available in all the villages of the study area. For banking purpose, people go to different banks which are situated at the average distance of about more than 10 km. Agriculture and Non-Agriculture Credit Societies are also available at a distance of more than 10 km except villages Mandhu, Ragtvihir and Chasmandva which are available within 5 km. People are getting help from these societies. Similarly, other credit societies are also available at an average distance of more than 10 km. Details are given in Table 12.38.

Table 12.38

Banking/Credit Society Facilities in Submergence Area of Chasmandva Reservoir

Sl. No.	Village	Taluka	District	Banking / Credit Society Facilities Available (Within Range in km)			
				Banking	Agri. Credit Society	Non-Agri. Credit Society	Other Credit Society
1	Chasmandva	Dharampur	Valsad	>10	>10	< 5	>10
2	Jugiri	Dharampur	Valsad	>10	>10	5 to 10	>10
3	Chorvani	Vansda	Navsari	>10	>10	>10	>10
4	Nirpan	Dharampur	Valsad	>10	>10	>10	>10
5	Nadagdhari	Dharampur	Valsad	>10	>10	>10	>10
6	Mandhu	Surgana	Nasik	>10	< 5	>10	>10
7	Ragatvhir	Surgana	Nasik	>10	< 5	>10	>10

(Source: enumerated by the investigators themselves)

12.1.5.4 Chikkar Reservoir

i) Demography: The total population of all the 9 villages as per the Census 2011 is 7799 spread over 1299 households. Thus, the average number of members per household is 6. Population of males in Chikkar reservoir area is

4135, while that of the females is 3664. The average sex ratio in the project area is 886. Details are given in Table 12.39.

Table 12.39
Demographical Details in Submergence Area of Chikkar Reservoir

Sl. No.	Village	Taluka	District	No. of House holds	Household Members			Sex Ratio (no. of Females/ 1000 Males)
					Male	Female	Total	
1	Baj	Ahwa	Dangs	172	402	362	764	900
2	Barkhandhia	Ahwa	Dangs	175	678	605	1283	892
3	Eanbhas	Ahwa	Dangs	187	869	652	1521	750
4	Khirnani	Ahwa	Dangs	85	266	261	527	981
5	Khird	Ahwa	Dangs	157	376	398	774	1059
6	Kunda	Ahwa	Dangs	53	156	114	270	731
7	Lahan Dabdar	Ahwa	Dangs	111	313	289	602	823
8	Sakarpatal	Ahwa	Dangs	220	694	528	1222	761
9	Susarda	Ahwa	Dangs	139	381	455	836	1194
Total				1299	4135	3664	7799	886

(Source: enumerated by the investigators themselves)

ii) Caste: The number of Schedule Caste (SC) and Scheduled Tribe (ST) households in the project affected villages is 3 and 1296 respectively. Number of Other Backward Class (OBC) is Nil. Maximum ST families 220 are found in village Sakarpatal. Details are given in Table 12.40.

Table 12.40
SC, ST and OBC Households in Submergence Area of Chikkar Reservoir

Sl. No.	Village	Taluka	District	Number of Families			
				SC	ST	OBC	Total
1	Baj	Ahwa	Dangs	0	172	0	172
2	Barkhandhia	Ahwa	Dangs	0	175	0	175
3	Eanbhas	Ahwa	Dangs	1	186	0	187
4	Khirnani	Ahwa	Dangs	0	85	0	85
5	Khird	Ahwa	Dangs	2	155	0	157
6	Kunda	Ahwa	Dangs	0	53	0	53
7	Lahan Dabdar	Ahwa	Dangs	0	111	0	111
8	Sakarpatal	Ahwa	Dangs	0	220	0	220
9	Susarda	Ahwa	Dangs	0	139	0	139
Total				3	1296	0	1299

(Source: enumerated by the investigators themselves)

iii) Educational Facilities: All the 9 affected villages are having at least one primary school, except in villages Barkhdhia and Sakarpatal there are 2 and 3 primary schools respectively. No village is having middle and other schools. The average distance of college from respective villages is reported to be more than 10 km. Details are given in Table 12.41.

Table 12.41
Village-wise Schools in Submergence Area of Chikkar Reservoir

Sl. No	Village	Taluka	District	Number of Schools			Distance of Collage (km)
				Primary	Middle	Others	
1	Baj	Ahwa	Dangs	1	0	0	>10
2	Barkhandhia	Ahwa	Dangs	2	0	0	>10
3	Eanbhas	Ahwa	Dangs	1	0	0	>10
4	Khirnani	Ahwa	Dangs	1	0	0	>10
5	Khird	Ahwa	Dangs	1	0	0	>10
6	Kunda	Ahwa	Dangs	1	0	0	>10
7	Lahan Dabdar	Ahwa	Dangs	1	0	0	>10
8	Sakarpatal	Ahwa	Dangs	3	0	0	>10
9	Susarda	Ahwa	Dangs	1	0	0	>10
Total				12	0	0	>10

(Source: enumerated by the investigators themselves)

iv) Land Use Pattern: Total geographical area of all 9 villages affected due to Chikkar Reservoir is about 10640 ha, out of which 53% Agriculture area, followed by forest land is 42% and remaining 5% land belongs to other categories like homestead land and etc. Details are given in Table- 12.42.

Table 12.42
Village-wise Land Use Pattern in Chikkar Reservoir Area

Sl. No.	Village	Land Use (ha)			
		Agriculture	Forest	Others	Total
1	Baj	323	173	109	605
2	Barkhandhia	603	801	133	1537
3	Eanbhas	532	34	39	605
4	Khirnani	572	819	54	1445
5	Khirdi	1423	664	98	2185
6	Kunda	273	575	20	868
7	Lahan Dabdar	512	82	5	599
8	Sakarpatal	733	169	77	979
9	Susarda	667	1116	34	1817
Total		5638	4433	569	10640
Percentage		53	42	5	100

(Source: enumerated by the investigators themselves)

v) Source of Water: The villagers in the project area fetch water from different sources including hand pumps, wells, river and tube wells. These sources of water are being utilised for other purpose also like sanitation, washing utensils, bathing of cattle etc. Details are given in Table-12.43.

Table 12.43
Village-wise Sources of Water in Submergence Area of Chikkar Reservoir

Sl. No.	Village	Source of Water for Drinking and Other Purposes			
		Hand pumps	Wells	River	Tube wells
1	Baj	✓			
2	Barkhandhia	✓	✓		
3	Eanbhas	✓	✓	✓	
4	Khirnani	✓	✓		
5	Khirdi	✓			
6	Kunda	✓	✓		
7	Lahan Dabdar	✓	✓	✓	
8	Sakarpatal	✓	✓	✓	✓
9	Susarda	✓		✓	

(Source: enumerated by the investigators themselves)

vi) Power Supply: Power supply for domestic use is available in all the project affected villages. In 4 villages viz Barkhandhia, Eanbhas, Lahan

Dabdar and Sakarptala are having Power Supply for agriculture. In 2 villages viz Eanbhas and Sakarptala are having Power Supply for other and all purpose. Details are given in Table 12.44.

Table 12.44
Village-wise Sources of Energy in Submergence Area of Chikkar Reservoir

Sl. No.	Village	Taluka	District	Power Supply Facilities for			
				Domestic	Agriculture	Other Purpose	All Purpose
1	Baj	Ahwa	Dangs	Available		X	X
2	Barkhandhia	Ahwa	Dangs	Available	✓	X	X
3	Eanbhas	Ahwa	Dangs	Available	✓	✓	✓
4	Khirnani	Ahwa	Dangs	Available	X	X	X
5	Khird	Ahwa	Dangs	Available	X	X	X
6	Kunda	Ahwa	Dangs	Available	X	X	X
7	Lahan Dabdar	Ahwa	Dangs	Available	✓	X	X
8	Sakarptal	Ahwa	Dangs	Available	✓	✓	✓
9	Susarda	Ahwa	Dangs	Available	X	X	X

(Source: enumerated by the investigators themselves)

vii) Health Facilities: Hospital facilities are available for all the villages in the project area but its average distance of more than 10 km. The Maternity and Child Welfare and Primary Health Centres are available in only one village ie Susarda and also available within 5 km in villages Lahan Dabdar and Sakarptal. Remaining villages these facilities are available at about its average distance of more than 10 km. Details are given in Table- 12.45.

Table- 12.45
Village-wise Hospitals in Submergence Area of Chikkar Reservoir

Sl. No.	Village	Taluka	District	Medical Facilities (within range in km)		
				Allopathic Hospital	Maternity and Child Welfare Centre	Primary Health Centre

1	Baj	Ahwa	Dangs	>10	>10	>10
2	Barkhandhia	Ahwa	Dangs	>10	>10	>10
3	Eanbhas	Ahwa	Dangs	>10	>10	>10
4	Khirnani	Ahwa	Dangs	>10	>10	>10
5	Khird	Ahwa	Dangs	>10	>10	>10
6	Kunda	Ahwa	Dangs	>10	>10	>10
7	Lahan Dabdar	Ahwa	Dangs	>10	< 5	< 5
8	Sakarpatal	Ahwa	Dangs	>10	< 5	< 5
9	Susarda	Ahwa	Dangs	>10	✓	✓

(Source: enumerated by the investigators themselves)

viii) Post and Telephone: Post office available in only 3 villages viz Barkhandhia, Eanbhas and Sakarpatal and other villages are not having this facility. Telephone connection is available in village of Sakarpatal only and other villages are having of about 5 to 10 km and more. Details are given in Table- 12.46.

Table- 12.46

Post and Telephone Facilities in Submergence Area of Chikkar Reservoir

Sl. No.	Village	Taluka	District	Facility Available (Within Range in km)	
				Post Office	Telephone Connection
1	Baj	Ahwa	Dangs	x	< 5
2	Barkhandhia	Ahwa	Dangs	✓	5 to 10
3	Eanbhas	Ahwa	Dangs	✓	5 to 10
4	Khirnani	Ahwa	Dangs	x	5 to 10
5	Khird	Ahwa	Dangs	x	>10
6	Kunda	Ahwa	Dangs	x	>10
7	Lahan Dabdar	Ahwa	Dangs	x	>10
8	Sakarpatal	Ahwa	Dangs	✓	✓
9	Susarda	Ahwa	Dangs	x	x

(Source: enumerated by the investigators themselves)

ix) Transport Facility: Transport facility including plying of private / government vehicles is available in all the villages. The approach paved road available for all villages. Details are given in Table- 12.47.

Table- 12.47
Details are Transport Facilities in Submergence Area of Chikkar Reservoir

Sl. No.	Village	Taluka	District	State	Approach to Village		
					Approach Paved Road	Nearest Town	Distance from Nearest Town (km)
1	Khirdi (Chikkar)	Ahwa	Dangs	Gujarat	✓	Sakri	50
2	Barkhadhia	Ahwa	Dangs	Gujarat	✓	Surgana	29
3	Baj	Ahwa	Dangs	Gujarat	✓	Surgana	35
4	Eanbhas (Rambhas)	Ahwa	Dangs	Gujarat	✓	Surgana	32
5	Susarda	Ahwa	Dangs	Gujarat	✓	Surgana	35
6	Kunda	Ahwa	Dangs	Gujarat	✓	Surgana	40
7	Sakarpatal	Ahwa	Dangs	Gujarat	✓	Surgana	25
8	Khirmani	Ahwa	Dangs	Gujarat	✓	Surgana	28
9	Lahan Dabdar	Ahwa	Dangs	Gujarat	✓	Sakri	40

(Source: enumerated by the investigators themselves)

x) Banking and Credit Society Facilities: Banks are available only in village Sakarpatal. In 2 villages Banks are available within 5 km, in 2 villages available within in 5 to 10 km and in 2 villages more than 10 km are available. Agricultural Credit Society is available in village Eanbhas and non-agricultural and other credit societies are available in villages Eanbhas and Khirmani. In all other villages Agricultural, Non-agricultural and other Credit societies available within 5 and more than 10 km distance. Details are given in Table-12.48.

Table -12.48
Banking/Credit Society Facilities in Submergence Area of Chikkar Reservoir

Sl. No.	Village	Taluka	District	Banking / Credit Society Facilities Available (Within Range in km)			
				Banking	Agri. Credit Society	Non-Agri. Credit Society	Other Credit Society
1	Baj	Ahwa	Dangs	>10	< 5	< 5	< 5
2	Barkhandhia	Ahwa	Dangs	x	5 to 10	✓	✓

3	Eanbhas	Ahwa	Dangs	5 to 10	✓	✓	✓
4	Khirnani	Ahwa	Dangs	5 to 10	x	x	< 5
5	Khird	Ahwa	Dangs	>10	x	5 to 10	5 to 10
6	Kunda	Ahwa	Dangs	< 5	x	< 5	x
7	Lahan Dabdar	Ahwa	Dangs	< 5	< 5	>10	>10
8	Sakarpatal	Ahwa	Dangs	✓	x	>10	>10
9	Susarda	Ahwa	Dangs	x	x	< 5	x

(Source: enumerated by the investigators themselves)

12.1.5.5 Dabdar Reservoir

i) Demography: The total population of all the 11 villages as per the Census 2011 is 10661 spread over 1600 households. Thus, the average number of members per household is 7. Population of males in Dabdar reservoir area is 5835, while that of the females is 4826. The average sex ratio in the project area is 882. Details are given in Table- 12.49.

Table- 12.49

Demographical Details in Submergence Area of Dabdar Reservoir

Sl. No.	Village	Taluka	District	No. of House holds	Household Members			Sex Ratio (no. of Females/ 1000 Males)
					Male	Female	Total	
1	Bhawadi	Ahwa	Dangs	134	410	490	891	1222
2	Chinchingaontha	Ahwa	Dangs	212	651	502	1153	771
3	Dabdar	Ahwa	Dangs	124	396	334	730	843
4	Dhadhra	Ahwa	Dangs	139	368	373	741	1014
5	Ghodi	Ahwa	Dangs	184	531	477	1008	896
6	Ghoghalpada	Ahwa	Dangs	152	574	504	1078	878
7	Gira	Ahwa	Dangs	39	141	117	258	830
8	Malin	Ahwa	Dangs	130	332	299	631	901
9	Kudkas	Ahwa	Dangs	174	501	446	947	890
10	Kukadnakhi	Ahwa	Dangs	79	257	210	467	817
11	Pimpri	Ahwa	Dangs	233	1683	1074	2757	638
Total				1600	5835	4826	10661	882

(Source: enumerated by the investigators themselves)

ii) Caste: The number of Schedule Caste (SC) and Scheduled Tribe (ST) households in the project affected villages is 5 and 1590 respectively. Number of families belonging to Other Backward Class (OBC) category is 5.

Maximum ST families 232 are found in village Pimpri. Details are given in Table- 12.50.

Table-12.50
SC, ST and OBC Households in Submergence Area of Dabdar Reservoir Area

Sl. No.	Village	Taluka	District	Number of Families			
				SC	ST	OBC	Total
1	Bhawadi	Ahwa	Dangs	0	134	0	134
2	Chinchingaontha	Ahwa	Dangs	4	203	5	212
3	Dabdar	Ahwa	Dangs	0	124	0	124
4	Dhadhra	Ahwa	Dangs	0	139	0	139
5	Ghodi	Ahwa	Dangs	0	184	0	184
6	Ghoghalpada	Ahwa	Dangs	0	152	0	152
7	Gira	Ahwa	Dangs	0	39	0	39
8	Malin	Ahwa	Dangs	0	130	0	130
9	Kudkas	Ahwa	Dangs	0	174	0	174
10	Kukadnaksi	Ahwa	Dangs	0	79	0	79
11	Pimpri	Ahwa	Dangs	1	232	0	233
Total				5	1590	5	1600

(Source: enumerated by the investigators themselves)

iii) Educational Facilities: All the 11 affected villages are having at least one primary school, except in village Pimpri, where there are 3 primary schools. No village is having middle and other schools. The average distance of college from respective village is reported to be more than 10 km, except villages Dhadhra, Kudkas and Kukadnaksi, where the colleges are available at about 5 to 10 km. Details are given in Table- 12.51.

Table- 12.51
Village-wise Schools in Submergence Area of Dabdar Reservoir

Sl. No	Village	Taluka	District	Number of Schools			Distance of Collage (km)
				Primary	Middle	Others	
1	Bhawadi	Ahwa	Dangs	1	0	0	>10
2	Chinchingaontha	Ahwa	Dangs	1	0	0	>10
3	Dabdar	Ahwa	Dangs	1	0	0	>10
4	Dhadhra	Ahwa	Dangs	1	0	0	5 to 10

5	Ghodi	Ahwa	Dangs	1	0	0	>10
6	Ghoghalpada	Ahwa	Dangs	1	0	0	>10
7	Gira	Ahwa	Dangs	1	0	0	>10
8	Malin	Ahwa	Dangs	1	0	0	>10
9	Kudkas	Ahwa	Dangs	1	0	0	5 to 10
10	Kukadnakhi	Ahwa	Dangs	1	0	0	5 to 10
11	Pimpri	Ahwa	Dangs	3	0	0	>10
Total				13	0	0	-

(Source: enumerated by the investigators themselves)

iv) Land Use Pattern: Total geographical area of all 11 villages affected due to Dabdar Reservoir is about 6615 ha, out of which 69% area forest land is followed by agriculture land of 25% and remaining 6% land belongs to other categories like homestead land and etc. Details are given in Table- 12.52.

Table 12.52

Village-wise Land Use Pattern in Submergence Area of Dabdar Reservoir

Sl. No.	Village	Land Use (ha)			
		Agriculture	Forest	Others	Total
1	Bhawadi	96	69	44	209
2	Chinchingaonth a	85	418	67	570
3	Dabdar	8	126	68	202
4	Dhadhra	183	10	38	231
5	Ghodi	231	1146	15	1392
6	Ghoghalpada	235	81	59	375
7	Gira	28	405	34	467
8	Malin	312	1301	2	1615
9	Kudkas	200	713	59	972
10	Kukadnakhi	66	153	36	255
11	Pimpri	194	127	6	327
Total		1638	4549	428	6615
Percentage		25	69	6	100

(Source: enumerated by the investigators themselves)

v) Sources of Water: The villagers in the project are fetch water from different sources including hand pumps, wells, rivers and Pipeline/Tube well. These sources of water are being utilised for other purpose also like

sanitation, washing utensils, bathing of cattle etc. Details are given in Table-12.53.

Table 12.53

Village-wise Sources of Water in Submergence Area of Dabdar Reservoir

Sl. No.	Village	Source of Water for Drinking and Other Purposes			
		Hand pumps	Wells	River	Others
1	Bhawadi	✓	✓	✓	✓
2	Chinchingaontha	✓		✓	✓
3	Dabdar	✓	✓	✓	✓
4	Dhadhra	✓	✓	✓	✓
5	Ghodi	✓	✓	✓	✓
6	Ghoghalpada	✓	✓	✓	✓
7	Gira	✓	✓	✓	✓
8	Malin	✓	✓	✓	✓
9	Kudkas	✓	✓	✓	✓
10	Kukadnakhi	✓	✓	✓	✓
11	Pimpri	✓	✓	✓	✓

(Source: enumerated by the investigators themselves)

vi) Power Supply: Power supply for domestic use is available in all the project affected villages. Power supply in 6 villages for agriculture purpose, in 4 villages for other and all purpose are available. Details are given in Table 12.54.

Table 12.54

Village-wise Sources of Energy in Submergence Area of Dabdar Reservoir

Sl. No.	Village	Taluka	District	Power Supply Facilities for			
				Domestic	Agriculture	Other Purpose	All Purpose
1	Bhawadi	Ahwa	Dangs	✓	X	X	X
2	Chinchingaontha	Ahwa	Dangs	✓	✓	✓	✓
3	Dabdar	Ahwa	Dangs	✓	✓	X	X
4	Dhadhra	Ahwa	Dangs	✓	✓	X	X
5	Ghodi	Ahwa	Dangs	✓	X	X	X
6	Ghoghalpada	Ahwa	Dangs	✓	X	X	X
7	Gira	Ahwa	Dangs	✓	X	X	X
8	Malin	Ahwa	Dangs	✓	X	X	X

9	Kudkas	Ahwa	Dangs	✓	✓	✓	✓
10	Kukadnakhi	Ahwa	Dangs	✓	✓	✓	✓
11	Pimpri	Ahwa	Dangs	✓	✓	✓	✓

(Source: enumerated by the investigators themselves)

vii) Health Facilities: Hospital facilities are available for all the villages in the project area but its average distance of more than 10 km. The Maternity and Child Welfare and Primary Health Centres are also available within a distance of 5 to 10 and more. Details are given in Table- 12.55.

Table- 12.55

Village-wise Hospitals in Submergence Area of Dabdar Reservoir

Sl. No.	Village	Taluka	District	Medical Facilities(within range in km)		
				Allopathic Hospital	Maternity and Child Welfare Centre	Primary Health Centre
1	Bhawadi	Ahwa	Dangs	>10	>10	>10
2	Chinchingaontha	Ahwa	Dangs	>10	>10	5 to 10
3	Dabdar	Ahwa	Dangs	>10	>10	5 to 10
4	Dhadhra	Ahwa	Dangs	5 to 10	5 to 10	5 to 10
5	Ghodi	Ahwa	Dangs	>10	>10	5 to 10
6	Ghoghalpada	Ahwa	Dangs	>10	>10	>10
7	Gira	Ahwa	Dangs	>10	>10	< 5
8	Malin	Ahwa	Dangs	>10	>10	>10
9	Kudkas	Ahwa	Dangs	5 to 10	>10	>10
10	Kukadnakhi	Ahwa	Dangs	5 to 10	>10	>10
11	Pimpri	Ahwa	Dangs	>10	>10	>10

(Source: enumerated by the investigators themselves)

viii) Post and Telephone: Post offices are available in 4 villages viz Chinchingarvtha, Ghoghalpada, Gira and Pimpri. Telephone facilities are available in 3 villages viz Chinchingarvtha, Ghoghalpada and Pimpri. Details are given in Table -12.56.

Table- 12.56

Post and Telephone Facilities in Submergence Area of Dabdar Reservoir

Sl. No.	Village	Taluka	District	Facility Available (Within Range in km)	
				Post Office	Telephone connection
1	Bhawadi	Ahwa	Dangs	x	< 5
2	Chinchingaontha	Ahwa	Dangs	✓	✓
3	Dabdar	Ahwa	Dangs	x	x
4	Dhadhra	Ahwa	Dangs	x	x
5	Ghodi	Ahwa	Dangs	x	x
6	Ghoghalspada	Ahwa	Dangs	✓	✓
7	Gira	Ahwa	Dangs	✓	x
8	Malin	Ahwa	Dangs	x	x
9	Kudkas	Ahwa	Dangs	x	x
10	Kukadnakhi	Ahwa	Dangs	x	x
11	Pimpri	Ahwa	Dangs	✓	✓

(Source: enumerated by the investigators themselves)

ix) Transport Facility: Transport facility including plying of private / government vehicles is available in all the villages. The approach paved road available for all villages. Details are given in Table 12.57.

Table 12.57

Details of Transport Facilities in Submergence Area of Dabdar Reservoir

Sl. No.	Village	Taluka	District	State	Approach to Village		
					Approach Paved Road	Nearest Town	Distance from Nearest Town (km)
1	Gira	Ahwa	Dangs	Gujarat	✓	Vyara	28
2	Kudkas	Ahwa	Dangs	Gujarat	✓	Vyara	50
3	Kukadnakhi	Ahwa	Dangs	Gujarat	✓	Vyara	50
4	Chichigaontha	Ahwa	Dangs	Gujarat	✓	Vyara	52
5	Dhadhra	Ahwa	Dangs	Gujarat	✓	Vyara	53
6	Bhawadi	Ahwa	Dangs	Gujarat	✓	Songadh	42
7	Pimpri	Ahwa	Dangs	Gujarat	✓	Songadh	40
8	Dabdar	Ahwa	Dangs	Gujarat	✓	Vyara	30
9	Ghodi	Ahwa	Dangs	Gujarat	✓	Songadh	38
10	Ghodhalpada	Ahwa	Dangs	Gujarat	✓	Songadh	27

11	Malin	Ahwa	Dangs	Gujarat	✓	Songadh	42
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x) **Banking and Credit Society Facilities:** Banks, Agricultural and Non-agricultural credit societies are available in village Pimpri only. Other Banks and Societies are available at a distance of 5 km and more. Details are given in Table- 12.58.

Table- 12.58
Banking/Credit Society Facilities in Submergence Area of Dabdar Reservoir

Sl. No.	Village	Taluka	District	Banking / Credit Society Facilities Available (Within Range in km)			
				Banking	Agri. Credit Society	Non-Agri. Credit Society	Other Credit Society
1	Bhawadi	Ahwa	Dangs	>10	>10	>10	>10
2	Chinchingaontha	Ahwa	Dangs	5 to 10	5 to 10	5 to 10	5 to 10
3	Dabdar	Ahwa	Dangs	<5	<5	<5	<5
4	Dhadhra	Ahwa	Dangs	>10	>10	>10	>10
5	Ghodi	Ahwa	Dangs	5 to 10	>10	5 to 10	5 to 10
6	Ghoghalpada	Ahwa	Dangs	>10	>10	<5	<5
7	Gira	Ahwa	Dangs	x	<5	<5	<5
8	Malin	Ahwa	Dangs	>10	>10	>10	>10
9	Kudkas	Ahwa	Dangs	<5	<5	<5	<5
10	Kukadnakhi	Ahwa	Dangs	<5	<5	<5	<5
11	Pimpri	Ahwa	Dangs	✓	✓	✓	x

(Source: enumerated by the investigators themselves)

12.1.5.6 Kelwan Reservoir

i) **Demography:** The total population of all the 17 villages as per the Census 2011 is 11998 spread over 2220 households. Thus, the average number of members per household is 5. Population of males in Kelwan reservoir area is 6102, while that of the females is 5896. The average sex ratio in the project area is 966. Details are given in Table- 12.59.

Table -12.59**Demographical Details in Submergence Area of Kelwan Reservoir**

Sl. No	Village	Taluka	District	No. of Households	Household Members			Sex Ratio (no. of Females/ 1000 Males)
					Male	Female	Total	
1	Bhalkhet	Ahwa	Dangs	134	488	416	904	852
2	Bhongadiya	Ahwa	Dangs	79	307	242	549	788
3	Bhujad	Ahwa	Dangs	155	339	367	706	1083
4	Chikhala	Ahwa	Dangs	120	361	306	667	848
5	Chikkar	Ahwa	Dangs	297	765	629	1394	822
6	Divdayavan	Ahwa	Dangs	107	294	262	556	891
7	Engin Pada	Ahwa	Dangs	36	94	104	198	1106
8	Godadiya	Ahwa	Dangs	122	420	365	785	869
9	Kakarda	Ahwa	Dangs	138	366	326	692	891
10	Kalibel	Ahwa	Dangs	315	739	932	1671	1071
11	Masli	Ahwa	Dangs	157	411	350	761	852
12	Khatal	Ahwa	Dangs	210	595	631	1226	1061
13	KhopriAmba	Ahwa	Dangs	55	155	164	319	1058
14	Pandharmal	Ahwa	Dangs	76	167	156	323	934
15	Patli	Ahwa	Dangs	44	128	132	260	1031
16	Tekpada	Ahwa	Dangs	112	284	325	609	1144
17	Wankan	Ahwa	Dangs	63	189	189	378	1000
Total				2220	6102	5896	11998	966

(Source: enumerated by the investigators themselves)

ii) Caste: The number of Schedule Caste (SC) and Scheduled Tribe (ST) households in the project affected villages is 9 and 2211 respectively. No family was found belong to Other Backward Class (OBC) category. Maximum ST Families 311 are found in village Kalibel. Details are given in Table -12.60.

Table- 12.60**SC, ST and OBC Households in Submergence Area of Kelwan Reservoir**

Sl. No.	Village	Taluka	District	Number of Families			
				SC	ST	OBC	Total
1	Bhalkhet	Ahwa	Dangs	0	134	0	134
2	Bhongadia	Ahwa	Dangs	0	79	0	79
3	Bhujad	Ahwa	Dangs	0	155	0	155

4	Chikhala	Ahwa	Dangs	0	120	0	120
5	Chikkar	Ahwa	Dangs	0	297	0	297
6	Divdayavan	Ahwa	Dangs	0	107	0	107
7	Engin Pada	Ahwa	Dangs	0	36	0	36
8	Godadiya	Ahwa	Dangs	0	122	0	122
9	Kakarda	Ahwa	Dangs	0	138	0	138
10	Kalibel	Ahwa	Dangs	4	311	0	315
11	Masli	Ahwa	Dangs	0	157	0	157
12	Khatal	Ahwa	Dangs	2	208	0	210
13	KhopriAmba	Ahwa	Dangs	0	55	0	55
14	Pandharmal	Ahwa	Dangs	0	76	0	76
15	Patli	Ahwa	Dangs	0	44	0	44
16	Tekpada	Ahwa	Dangs	3	109	0	112
17	Wankan	Ahwa	Dangs	0	63	0	63
Total				9	2211	0	2220

(Source: enumerated by the investigators themselves)

iii) Educational Facilities: All the 17 affected villages are having at least one primary school, except in Bhongadia, Bhujad, Divdayavan, Kalibel and Khatal villages where there are 2 primary schools are available. No village is having middle and other schools. The average distance of college from respective village is reported to be more than 10 km. Details are given in Table- 12.61.

Table- 12.61
Village-wise Schools in Submergence Area of Kelwan Reservoir

Sl. No.	Village	Taluka	District	Number of Schools			Distance of Collage (km)
				Primary	Middle	Others	
1	Bhalkhet	Ahwa	Dangs	1	0	0	>10
2	Bhongadia	Ahwa	Dangs	2	0	0	>10
3	Bhujad	Ahwa	Dangs	2	0	0	>10
4	Chikhala	Ahwa	Dangs	1	0	0	>10
5	Chikkar	Ahwa	Dangs	1	0	0	>10
6	Divdayavan	Ahwa	Dangs	2	0	0	>10
7	Engin Pada	Ahwa	Dangs	1	0	0	>10
8	Godadiya	Ahwa	Dangs	1	0	0	>10
9	Kakarda	Ahwa	Dangs	1	0	0	>10

10	Kalibel	Ahwa	Dangs	2	0	0	>10
11	Masli	Ahwa	Dangs	1	0	0	>10
12	Khatal	Ahwa	Dangs	2	0	0	>10
13	KhopriAmba	Ahwa	Dangs	1	0	0	>10
14	Pandharmal	Ahwa	Dangs	1	0	0	>10
15	Patli	Ahwa	Dangs	1	0	0	>10
16	Tekpada	Ahwa	Dangs	1	0	0	>10
17	Wankan	Ahwa	Dangs	1	0	0	>10

(Source: enumerated by the investigators themselves)

iv) Land Use Pattern: Total geographical area of all 17 villages affected due to Kelwan Reservoir is about 9832 ha, out of which 65% area forest land is followed by agriculture land of 25% and remaining 10% land belongs to other categories like homestead land and etc. Details are given in Table- 12.62.

Table 12.62

Village-wise Land Use Pattern in Submergence Area of Kelwan Reservoir

Sl. No.	Village	Land Use (ha)			
		Agriculture	Forest	Others	Total
1	Bhalkhet	124	0	57	181
2	Bhongadia	85	189	50	324
3	Bhujad	208	1379	16	1603
4	Chikhala	36	46	24	106
5	Chikkar	262	351	19	632
6	Divdayavan	149	48	51	247
7	Engin Pada	50	45	33	128
8	Godadiya	179	2301	51	2531
9	Kakarda	145	776	42	963
10	Kalibel	369	923	26	1318
11	Masli	159	0	137	297
12	Khatal	242	0	166	407
13	Khopri Amba	50	0	88	138
14	Pandharmal	108	264	63	434
15	Patli	52	0	64	116
16	Tekpada	239	12	61	312
17	Wankan	29	32	35	96
Total		2485	6365	982	9832
Percentage		25	65	10	100

(Source: enumerated by the investigators themselves)

v) Sources of Water: The villagers in the project area fetch water from different sources including hand pump, wells, river and tube wells. These sources of water are being utilised for other purpose also like sanitation, washing utensils, bathing of cattle etc. Details are given in Table-12.63.

Table -12.63

Village-wise Sources of Water in Submergence Area of Kelwan Reservoir

Sl. No.	Village	Source of Water for Drinking and Other Purposes			
		Hand pump	Well	River	Tube well
1	Bhalkhet	✓	✓		✓
2	Bhongadia	✓	✓	✓	✓
3	Bhujad	✓	✓	✓	✓
4	Chikhala	✓	✓	✓	✓
5	Chikkar	✓	✓	✓	✓
6	Divdayavan	✓	✓	✓	✓
7	Engin Pada	✓	✓	✓	✓
8	Godadiya	✓	✓	✓	✓
9	Kakarda	✓	✓	✓	✓
10	Kalibel	✓	✓	✓	✓
11	Masli	✓	✓	✓	✓
12	Khatal	✓	✓	✓	✓
13	Khopri Amba	✓	✓	✓	✓
14	Pandharmal	✓	✓	✓	✓
15	Patli	✓	✓	✓	✓
16	Tekpada	✓	✓	✓	✓
17	Wankan	✓	✓	✓	✓

(Source: enumerated by the investigators themselves)

vi) Power Supply: Power supply for domestic use is available in all the 17 project affected villages. Power supply for other purpose is available in village Bhongadia. Power supply for all purpose is available in village Chikhala. Details are given in Table -12.64.

Table- 12.64

Village-wise Power Supply in Submergence Area of Kelwan Reservoir

Sl. No	Village	Taluka	District	Power Supply Facilities for			
				Domestic	Agriculture	Other Purpose	All Purpose
1	Bhalkhet	Ahwa	Dangs	✓	X	X	X
2	Bhongadia	Ahwa	Dangs	✓	X	✓	X
3	Bhujad	Ahwa	Dangs	✓	X	X	X
4	Chikhala	Ahwa	Dangs	✓	✓	X	✓
5	Chikkar	Ahwa	Dangs	✓	X	X	X
6	Divdayavan	Ahwa	Dangs	✓	X	X	X
7	Engin Pada	Ahwa	Dangs	✓	X	X	X
8	Godadiya	Ahwa	Dangs	✓	X	X	X
9	Kakarda	Ahwa	Dangs	✓	X	X	X
10	Kalibel	Ahwa	Dangs	✓	X	X	X
11	Masli	Ahwa	Dangs	✓	X	X	X
12	Khatal	Ahwa	Dangs	✓	X	X	X
13	KhopriAmba	Ahwa	Dangs	✓	X	X	X
14	Pandharmal	Ahwa	Dangs	✓	X	X	X
15	Patli	Ahwa	Dangs	✓	X	X	X
16	Tekpada	Ahwa	Dangs	✓	X	X	X
17	Wankan	Ahwa	Dangs	✓	X	X	X

(Source: enumerated by the investigators themselves)

vii) Health Facilities: Hospital facilities are available for all the villages in the project area with its average distance of more than 10 km. The Primary Health Centres are available in 4 villages viz Kalibel, Khatal, Khopriamba and Tekpada at a distance of more than 10 km and for other villages, the PHCs are available at a distance of 5 to 10 km. Details are given in Table-12.65.

Table 12.65
Village-wise Hospitals in Submergence Area of Kelwan Reservoir

Village	Taluka	District	Medical Facilities (within range in km)
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Sl. No.				Allopathic Hospital	Maternity and Child Welfare Centre	Primary Health Centre
1	Bhalkhet	Ahwa	Dangs	>10	>10	<5
2	Bhongadia	Ahwa	Dangs	>10	>10	5 to 10
3	Bhujad	Ahwa	Dangs	>10	>10	<5
4	Chikhala	Ahwa	Dangs	>10	>10	>10
5	Chikkar	Ahwa	Dangs	>10	>10	>10
6	Divdayavan	Ahwa	Dangs	>10	>10	5 to 10
7	Engin Pada	Ahwa	Dangs	>10	>10	>10
8	Godadiya	Ahwa	Dangs	>10	>10	>10
9	Kakarda	Ahwa	Dangs	>10	>10	<5
10	Kalibel	Ahwa	Dangs	>10	>10	✓
11	Masli	Ahwa	Dangs	>10	>10	x
12	Khatal	Ahwa	Dangs	>10	>10	✓
13	KhopriAmba	Ahwa	Dangs	>10	>10	✓
14	Pandharmal	Ahwa	Dangs	>10	>10	x
15	Patli	Ahwa	Dangs	>10	>10	x
16	Tekpada	Ahwa	Dangs	>10	>10	✓
17	Wankan	Ahwa	Dangs	>10	>10	x

(Source: enumerated by the investigators themselves)

viii) Post and Telephone: Post offices are available in 3 villages, while in 14 villages this facility is not available. The facility of telephone connection is not available in all the villages, however in 5 villages the facility is available at a distance of more than 10 km. Details are given in Table -12.66.

Table- 12.66

Post and Telephone Facilities in Submergence Area of Kelwan Reservoir

Sl. No.	Village	Taluka	District	Facility Available (Within Range in km)	
				Post Office	Telephone Connection
1	Bhalkhet	Ahwa	Dangs	x	x
2	Bhongadia	Ahwa	Dangs	x	x
3	Bhujad	Ahwa	Dangs	x	x
4	Chikhala	Ahwa	Dangs	x	>10

5	Chikkar	Ahwa	Dangs	✓	x
6	Divdayavan	Ahwa	Dangs	x	>10
7	Engin Pada	Ahwa	Dangs	x	x
8	Godadiya	Ahwa	Dangs	x	x
9	Kakarda	Ahwa	Dangs	x	x
10	Kalibel	Ahwa	Dangs	✓	x
11	Masli	Ahwa	Dangs	x	x
12	Khatal	Ahwa	Dangs	✓	>10
13	KhopriAmba	Ahwa	Dangs	x	>10
14	Pandharmal	Ahwa	Dangs	x	x
15	Patli	Ahwa	Dangs	x	x
16	Tekpada	Ahwa	Dangs	x	x
17	Wankan	Ahwa	Dangs	x	>10

(Source: enumerated by the investigators themselves)

ix) Transport Facility: Transport facility including plying of private / government vehicles is available in all the villages. The approach paved road available for all villages except villages Wankan and Khopri Amba. Details are given in Table- 12.67.

Table- 12.67

Details of Transport Facilities in Submergence Area of Kelwan Reservoir

Sl. No.	Village	Taluka	District	State	Approach to Village		
					Approach Paved Road	Nearest Town	Distance from Nearest Town (km)
1	Kakarda	Ahwa	Dangs	Gujarat	✓	Vyara	27
2	Bhongdya	Ahwa	Dangs	Gujarat	✓	Vyara	27
3	Enginepada	Ahwa	Dangs	Gujarat	✓	Vyara	28
4	Tekpada	Ahwa	Dangs	Gujarat	✓	Songadh	28
5	Patli	Ahwa	Dangs	Gujarat	✓	Songadh	32
6	Wankan	Ahwa	Dangs	Gujarat	x	Vyara	29
7	Khopri Amba	Ahwa	Dangs	Gujarat	x	Songadh	25
8	Bhujad	Ahwa	Dangs	Gujarat	✓	Songadh	30
9	Kalibel	Ahwa	Dangs	Gujarat	✓	Songadh	25
10	Godadiya	Ahwa	Dangs	Gujarat	✓	Vyara	43
11	Pandharmal	Ahwa	Dangs	Gujarat	✓	Vyara	20

12	Bhalkhet	Ahwa	Dangs	Gujarat	✓	Songadh	26
13	Masli	Ahwa	Dangs	Gujarat	✓	Songadh	45
14	Khatal	Ahwa	Dangs	Gujarat	✓	Songadh	45
15	Divdayawan	Ahwa	Dangs	Gujarat	✓	Songadh	35
16	Chikkar	Ahwa	Dangs	Gujarat	✓	Vyara	25
17	Chikhala	Ahwa	Dangs	Gujarat	✓	Surgana	30

(Source: enumerated by the investigators themselves)

x) Banking and Credit Society Facilities: The Banking is available in Balkhet village of the study area. For banking purpose people go to different banks which are located at the average distance of more than 5 to 10 km. Agricultural and Non-agricultural Credit Societies are available in villages Balkhet, Bhujad, Masli and Khopriamba and for other villages this facility available at the average distance of more than 5 to 10 km and farmers are getting help from these societies. Other credit society is available in village Khopriamba only. Details are given in Table- 12.68.

Table- 12.68
Banking/Credit Society Facilities in Submergence Area of Kelwan Reservoir

Sl. No.	Village	Taluka	District	Banking / Credit Society Facilities Available (Within Range in km)			
				Banking	Agri. Credit Society	Non-Agri. Credit Society	Other Credit Society
1	Bhalkhet	Ahwa	Dangs	✓	✓	✓	x
2	Bhongadia	Ahwa	Dangs	>10	x	5 to 10	x
3	Bhujad	Ahwa	Dangs	>10	✓	✓	x
4	Chikhala	Ahwa	Dangs	5 to 10	x	< 5	x
5	Chikkar	Ahwa	Dangs	>10	x	>10	x
6	Divdayavan	Ahwa	Dangs	>10	x	< 5	x
7	Engin Pada	Ahwa	Dangs	>10	x	< 5	x
8	Godadiya	Ahwa	Dangs	>10	x	>10	x
9	Kakarda	Ahwa	Dangs	x	>10	< 5	x
10	Kalibel	Ahwa	Dangs	x	>10	✓	x
11	Masli	Ahwa	Dangs	>10	✓	✓	x
12	Khatal	Ahwa	Dangs	>10	x	< 5	x
13	KhopriAmba	Ahwa	Dangs	>10	✓	✓	✓

14	Pandharmal	Ahwa	Dangs	>10	x	< 5	x
15	Patli	Ahwa	Dangs	>10	x	< 5	x
16	Tekpada	Ahwa	Dangs	>10	x	< 5	x
17	Wankan	Ahwa	Dangs	>10	x	< 5	x

(Source: enumerated by the investigators themselves)

12.1.6 Perception About the Project

During survey it was found that all the households are well aware about Par-Tapi-Narmada link project. They are apprehensive about the project because of resettlement due to the proposed reservoirs, emotional attachment with the area as they are residing in the area since the time of their forefathers and prevailing social system.

12.2 Impact of Par-Tapi-Narmada Link

The Par-Tapi-Narmada link project will provide water for irrigation and domestic purpose in its en-route and take over the part command area of existing Miyagam branch canal of Narmada canal system, resulting into saving of water in Sardar Sarovar Project which is proposed to be used for the benefit of Saurashtra and Kutch regions. The link project will also provide waters for irrigation purposes in its en-route tribal areas on the right side of the link canal through lift, water for the command area of five projects proposed by Government of Gujarat, command in the vicinity of six reservoirs through lift in the tribal areas and also command area in the Chhota Udepur and Panchmahal district through lift from Narmada main canal on substitution basis. In addition to this the link canal will also provide water en-route of link canal to meet the drinking water requirements of the areas and peoples in the vicinity of the canal including filling of village and Panchayat tanks.

In addition, the project will also generate hydro power. Besides, the project will improve the ground water condition and will provide opportunities for tourism development, fisheries development apart from providing employment to people during its construction and maintenance phase. Some aquatic life and vegetation may grow along the periphery of

the reservoir.

12.2.1 Short Term Impact of the Link Project

Construction of the proposed project would invariably create a number of direct employment opportunities. However, indirect employment opportunities would also be generated which would provide great impetus to the economy of the local area. Various types of businesses, such as shops, food-stalls, tea stalls, restaurants, workshops, etc. would invariably come-up, which would be run by the more entrepreneurial local residents. Besides, a variety of suppliers, traders, transporters, service providers, etc., are also likely to concentrate in the project area and likely to benefit immensely, as demand for almost all types of goods and services will increase significantly. The business community as a whole would be benefited. The locals would also avail these opportunities arising from the project and increase their income levels. Job opportunities will drastically improve in this area. At present most of the population sustains on agriculture and allied activities. There are no major industries or other avenues of occupation in the area. The project will open a large number of jobs to the local population during project construction phase.

12.2.2 Long Term Impact of Link Project

The setting up of the project will lead to development of additional infrastructure in the area including roads, electrifications, water supply, tourism, fisheries etc which will contribute significantly to the development of the area. The labour force involved during construction phases will be replaced by skilled manpower during operation phase. Creation of reservoir will make the environment more pleasant which will help to develop tourism and water sports facilities such as boating, fishing etc. This will generate additional employment opportunities and trading opportunities for people.

12.2.3 Social Impact Assessment

Based on the project details and the baseline environmental status, potential impacts as a result of the construction and operation of the proposed Par-Tapi-Narmada Link Project on Social Aspects have been listed as under.

12.2.3.1 Impacts Due to Land Acquisition

Forced resettlement carries severe risks of impoverishing the uprooted people, many of who are poor even before displacement. Thus, the main socio-economic concerns in resettlement operations revolve around reducing the impoverishment risks and restoring resettlers' livelihoods. A project of this magnitude is likely to entail both positive as well as negative impacts on the socio-cultural and socio-economic fabric of the area. During construction and operation phases, a lot of allied activities will mushroom in the project area. The construction phase would require a large labour force. It is felt that most of the labour force may come from other parts of the country. Economic opportunities would increase both directly as well as indirectly. Similarly infrastructure facilities also are likely to increase. One of the most important and negative impact, due to commissioning of the project, would be that a number of families could be displaced from their lands, and economic activities. A total number of 2398 PAFs will be losing land in varying proportions in all the six reservoirs proposed under Par- Tapi- Narmada link project. Similarly, about 111 Project affected Families (PAFs) will be losing homesteads also. Total number of PAFs are 2509. The reservoir wise details in this regard are given in the Tables 12.69.

Table - 12.69

Project Affected Families Loosing Land and Homestead in all the Six Reservoirs Proposed Under Par- Tapi- Narmada Link Project

S. No.	Reservoir	PAFs Losing only Land	PAFs Losing Land and Homestead	Total No. of PAFs
1	Jheri	91	7	98
2	Paikhed	328	3	331
3	Chasmandva	378	1	379
4	Chikkar	326	19	345
5	Dabdar	557	6	563
6	Kelwan	718	75	793
	Total	2398	111	2509

Impoverishment Risk Assessment (IRA) framework has been synthesized from the knowledge of past experiences. The matrix of eight

basic risks in light of historical experience predictable in most resettlement situations are landlessness, joblessness, homelessness, marginalization, increased morbidity and mortality, food insecurity, loss of access to common property, and social (community) disarticulation. Risks involved are studied and suitable Resettlement and Rehabilitation plans have been formulated to minimise the adverse impacts on socio-economic environments.

12.3 Rehabilitation and Resettlement

As already discussed in earlier paras, due to creation of Jheri, Paikhed, Chasmandva, Chikkar, Dabdar and Kelwan reservoirs about 6065 ha land will come under submergence. Total 61 villages (Jheri reservoir – 6 villages, Paikhed reservoir – 11 villages, Chasmandva reservoir – 7 villages, Chikkar reservoir – 9 villages, Dabdar reservoir – 11 villages and Kelwan reservoir – 17 villages) in Surgana and Peint talukas of Nasik district in Maharashtra and Dharampur taluka of Valsad district, Ahwa taluka of Dangs district in Gujarat are likely to be partly come under submergence leading to displacement of the population residing in these villages. To minimise such adverse effects it is imperative to provide a suitable Rehabilitation and Resettlement package to the Project Affected People (PAP) enabling them to gain at least their levels of living standards.

The Ministry of Rural Development (Department of Land Resources), Government of India, formulated “National Rehabilitation and Resettlement Policy – 2007” (NRRP- 2007). Further, the States of Gujarat, Madhya Pradesh and Maharashtra have formulated the Rehabilitation and Resettlement policies for the Project Affected People of Sardar Sarovar dam (across Narmada). The provisions of Land Acquisition, Rehabilitation and Resettlement Bill - 2013 have also been considered. The provisions in all these documents have been compared. The Rehabilitation and Resettlement package has been developed where the provisions of NRRP - 2007 have been provided as minimum and best of all the above acts and policies have been provided.

12.3.1 Assessment of Economic Loss Due to Displacement

12.3.1.1 Land under Submergence

a) **Acquisition of Land:** The proposed project envisages construction of 6 reservoirs, 2 barrages, link channels and canal network. About 6065 ha of land will be acquired for proposed Jheri, Paikhed, Chasmandva, Chikkar, Dabdar and Kelwan reservoirs. Details are given at Table- 12.70.

Table- 12.70

Land to be Acquired under Reservoir Submergence of Various Dams

Dam Site	Submergence Area (ha)			
	Forest Land	Culturable and Other Land	River Portion	Total
Jheri	408	256	172	836
Paikhed	317	589	88	994
Chasmandva	300	255	60	615
Chikkar	300	332	110	742
Dabdar	614	482	153	1249
Kelwan	890	450	289	1629
Total	2829	2364	872	6065

About 2509 families will be affected due to the submergence of these reservoirs, of which 98, 331, 379, 345, 563 and 793 families will be affected due to Jheri, Paikhed, Chasmandva, Chikkar, Dabdar and Kelwan reservoirs respectively.

The land to be acquired for link canal including feeder pipe line for Par-Tapi-Narmada link canal is 4494.70 ha. Details are given in Table-12.71.

Table-12.71

Details of Land to be Acquired for Link Canal and Feeder Pipelines

Link	Details of Land (ha)				
	Forest Land	Culturable Land	Un Culturable Land	River Portion	Total
Par- Tapi	964.30	855.00	133.80	26.60	1979.70
Tapi-Narmada	402.00	1457.70	188.50	60.10	2108.30
Feeder Pipe lines	244.10	152.60	0.90	9.10	406.70

Total	1610.40	2465.30	323.20	95.80	4494.70
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12.3.1.2 Project Affected Community

Total number of affected families would be 2509 of which 98 families would be affected due to creation of Jheri reservoir spread over 6 villages, 331 families would be affected due to creation of Paikhed reservoir spread over 11 villages, 379 families would be affected due to creation of Chasmandva reservoir spread over 7 villages, 345 families would be affected due to creation of Chikkar reservoir spread over 9 villages, 563 families would be affected due to creation of Dabdar reservoir spread over 11 villages and 793 families would be affected due to creation of Kelwan reservoir spread over 17 villages. The affected families may lose their lands or houses or both in the submergence when the reservoirs are created. All the affected families would be compensated for the loss of their lands and houses. The families whose houses are coming under submergence would be resettled in the new habitations and would be assisted to take up some alternative occupation in the new surroundings.

12.3.2 People's Perception towards Rehabilitation Package

The Rehabilitation and Resettlement indeed a crucial component of Par-Tapi-Narmada link project due to persisting opposition of the project affected peoples due to their reservation against the project. The villages coming under submergence due to the projects are located in the States of Gujarat and Maharashtra spread over 3 districts viz Valsad and Dangs in Gujarat and Nasik in Maharashtra. A liberal and attractive Rehabilitation and Resettlement package which could set-a-side all grievance of Project Affected People has been prepared for improvement of their economic conditions significantly after resettlement. However, due to resistance from local public at project sites these facts could not be discussed with them in detail.

12.3.3 Rehabilitation and Resettlement Package

As far as acquisition of government land including forest land, compensation would be paid to the concerned government department/agency. The compensation for acquisition of private land would

be paid to the respective land owners/ land titleholders within the provisions of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013.

12.3.3.1 Measures for Resettlement

As mentioned earlier, 111 families are likely to be evicted from their homesteads as a result of the process of land acquisition due to construction of dams and subsequent submergence area. These families would be eligible to receive resettlement benefits, in addition to compensation of homestead plot and structures. The provisions of “Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013” have been taken into consideration. Further, it is suggested that these families be resettled/ relocated at one place as a group, in one or more of the existing nearby villages. The provisions for Resettlement that would be provided to the families losing homesteads are given in Table- 12.72.

Table 12.72
Provisions for Resettlement Plan for Families Losing Homesteads

Sl. No.	Description	Adopted Norms
1	Housing Benefits and compensation	<ul style="list-style-type: none"> • If a house is lost in rural areas, a constructed house shall be provided as per Indira Awas Yojana Specifications. • If a house is lost in urban areas, a constructed house shall be provided, which will be not less than 50 m² in plinth area.
2	House Building Assistance	One-time financial assistance of not less than Rs. 1,50,000/- for house construction.
3	Construction of Cattle Shed	One-time financial assistance of Rs. 25,000/PAF shall be given for construction of cattle shed.
4	Transportation aid	One time financial assistance of Rs. 50,000/PAF for each displaced family for shifting of family, building material, belongings and cattle.
5	Subsistence Allowance	Each affected family, losing land, will be given a monthly subsistence allowance equivalent to Rs. 3,000 / month for a period of one year.
6	One time Resettlement Allowance	Each affected family shall be given a one-time “Resettlement Allowance” of Rs. 50,000/-

According to the above provisions, resettlement benefits shall be extended to 111 PAFs including adult sons who are likely to be evicted from their homesteads as detailed

Thus, a provision of 2.80 ha (111 PAFs x 250 m² x 10⁻⁴) is required for providing housing plots to the displaced families.

In addition, about 25% of plot size would be required for providing civic amenities and about 25% of plot size for providing Infrastructure

facilities (amounting to 1.4 ha) are also required to be provided in resettlement site.

An amount of Rs. 366.21 lakh has been kept for providing Resettlement Plan for Families Losing Homesteads. Summary of resettlement provisions are summarized in table given below.

SI No.	Description	Amount (Rs. in lakh)
1	Land required for the resettlement site: (2.80 + 1.40)= 4.20 ha. Cost of land=4.2x5.00 lakh/ha	21.00
2	House Building Assistance: 111 PAFs x Rs. 1,50,000 / PAF	166.50
3	Construction of Cattle Shed: 111 PAFs x Rs. 25,000 / PAF	27.75
4	Transportation Grant: 111 PAFs x Rs. 50,000 / PAF	55.50
5	Subsistence Allowance: 111 PAFs x Rs. 3000 per month x 12 months for each PAF	39.96
6	One time Resettlement Allowance: 111 PAFs x Rs. 50,000 / PAF	55.50
Total		366.21

Amenities and Infrastructural Facilities to be provided at Resettlement Areas: In addition to the resettlement benefits that would be extended to the PAFs, the following Amenities and Infrastructural Facilities are proposed to be provided at Resettlement sites.

- **Internal Village Road Network:** For easy movement of people and vehicular traffic within the proposed resettlement sites, it is suggested to construct wide internal village roads within each of the resettlement sites. These internal village roads would be connected to an access road which connects villages. It is proposed to construct about 18 km of internal road. An amount of Rs. 360 lakh is being earmarked for construction of 18 km

metalled internal village roads, which includes all costs, such as cutting, levelling, aggregates, black top, labour etc.

- **Drainage Network within the Resettlement Site:** It is proposed to construct Drainage network in each of the Resettlement colonies. The main purpose of this drainage network is to clear storm water and domestic waste water from kitchens and bathrooms. It is also proposed that the drainage networks will consist of a lined drain and covered with RCC slabs. These drains will traverse parallel along internal village roads and finally culminate into a collection tank, before it is screened and filtered and thereafter either stored in an underground storage tank to be utilised for irrigation purposes in the Green Belt areas or discharged for the purpose of ground water recharge.

An amount of Rs. 52 lakh is being earmarked for providing drainage network in the resettlement sites, which will include costs towards excavation, brick work, cementing RCC cover, labour etc.

- **Sanitation Network within the Resettlement Site:** Sanitation network is proposed to be laid within each resettlement site. The main purpose of this network will be to transport domestic waste (night soil waste from lavatories). In addition, the sanitation network will also carry waste from schools, health care facility and other complexes within the resettlement sites. An amount of Rs. 343 lakh is earmarked to create a network of sewer pipeline emanating from each source, running parallel along the internal village road. The cost for establishment of sewer network, including all expenses (Excavation, length of pipe, man holes, labour, cover-up, etc. With specification (diameter 150 mm, RCC NP2 Pipe, 1.5 m depth). It is proposed to treat the sewage through septic tanks. The treated sewage will be disposed in absorption trenches. An amount of Rs. 86 lakh is earmarked for this purpose. Thus, a total provision of Rs. 429 lakh needs to be earmarked for creation of sanitation network within the resettlement site.

- **Safe Drinking Water:** Safe drinking water @ 135 lpcd is proposed to be provided to the PAFs by constructing an overhead storage tank and distributed through a network of pipelines. It is suggested to lay underground drinking water pipeline along the internal village road, on the

opposite side of the corridor for drainage and sanitation network. The network should involve 100 mm dia DI pipeline along the internal village roads at various resettlement sites. The cost for laying this network including digging, pipes, jointing, labour, etc is about Rs. 343 lakh.

Further, cost towards extending house connections (15 mm dia GI pipe) from the above mentioned network would be about Rs.26 lakh. Thus, total cost for laying drinking water network is Rs.369 lakh. It is suggested that the Project Development Authority makes arrangement for making water potable before it is supplied into the resettlement colonies. In this regard, cost for construction of Conventional Water Treatment Plant has been earmarked. A total provision of Rs. 18 lakh may be earmarked for this purpose. Thus, a total amount of Rs. 387 lakh has been earmarked for providing water supply in the resettlement sites.

- **Footpath:** In order to ensure safe movement of residents within the resettlement sites, it is proposed to construct 1 m corridor on either sides of the internal village road for footpath. A lump-sum amount of about Rs.34 lakh has been earmarked for laying footpath (including levelling, tiling, labour etc).
- **Public Transport:** For public transportation it is suggested to construct a Bus Stop in each of the resettlement colonies. This bus stop would occupy an area of about 10 m² (2 m x 5 m) and would be covered by a 1.5 m high enclosure wall from 3 sides made of brick and cement with corrugated roofing material spread over 4 steel poles. An amount of Rs.14 lakh is being earmarked for construction of bus stops at various resettlement sites.
- **Drinking Water Trough for Cattle:** For families that wish to rear livestock, it is proposed to construct about 8 drinking water troughs for cattle in each resettlement site. A lump-sum amount of Rs.21 lakh is being earmarked for construction of drinking water troughs for cattle in various resettlement sites.
- **Place of Worship:** A plot size measuring 0.5 ha is suggested to be earmarked for construction of place of worship in resettlement sites. A

lump-sum amount of Rs. 18 lakh has been earmarked for providing places of worship.

- **Cremation Grounds:** It is proposed to earmark an area of 1 ha of plot for establishment of cremation ground and / or burial ground. A total lump-sum amount of Rs.52 lakh has been earmarked for construction of cremation ground in various resettlement sites.
- **Fair Price Shops and other Shops:** It is suggested to provide a constructed space for 1 Fair Price shop and 4 other shops in each of the Resettlement colonies. An area of 0.005 ha [(4 m x 2.5 m) x 5 shops] may be earmarked in each resettlement site. A lump-sum amount of Rs. 18 lakh may be earmarked for providing fair price shop in various resettlement colonies.
- **Post Office:** A plot size measuring 10 m long x 5 m wide is suggested to be earmarked for the construction of post office, in various resettlement sites. It is suggested to provide one drinking water post and one WC in a building. A lump-sum amount of Rs. 18 lakh has been earmarked for providing post office in various resettlement colonies.
- **Panchayat Ghar:** A plot size measuring 0.25 ha is suggested to be earmarked for the construction of Panchayat Ghar. It is suggested to construct the building over an area of 20 m x 15 m with one drinking water post and one WC facility. A lump-sum amount of Rs. 69 lakh may be earmarked for providing Panchayat Ghar in various resettlement colonies.
- **Community Hall:** A plot size measuring 0.25 ha is suggested to be earmarked for the construction of community hall in various resettlement site. Further, it is suggested to construct a two store building over an area of 20 m x 15 m. It is also suggested to provide a drinking water post and two WC on the ground floor. A lump-sum amount of Rs. 69 lakh may be earmarked for providing community hall in various resettlement colonies.
- **Health Care Facility:** It is suggested to construct 1 PHC in the resettlement site to be shared by all the PAFs and other residents in the

vicinity it is suggested to have 2 ambulances that will be well equipped with medical aid and paramedical staff.

A plot size measuring 0.25 ha is suggested to be earmarked for the construction of a Primary Health Centre in the resettlement site. In this plot, it is suggested to construct building with covered area of 1250 m² (50 m x 25 m). Further, it is also suggested to provide a drinking water post and two WC within the PHC. A lump sum amount of Rs. 43 lakh may be earmarked for providing the PHC building and Rs. 343 lakh earmarked for purchase of various furniture and equipment including well equipped ambulances. Thus, a total amount of Rs. 386 lakh is being earmarked for creation of PHC in resettlement site.

Deputing the required man-power and payment of salaries of staff, purchase of medicines and other recurring expenses are to be undertaken by the State Government. It is suggested to engage man-power, as depicted in Table- 12.73, to operate the PHC.

Table- 12.73
Manpower Required in Proposed Primary Health Centre

Staff Required	Number
Medical Officer (1 may be from AYUSH or Lady Medical Officer)	2
Pharmacist	1
Female Health Worker commonly known as Auxiliary Nurse Midwife (ANM)	2
Male Health worker commonly known as Multi Purpose Worker (Male)	1
Health Assistant (Female) commonly known as Lady Health Visitor (LHV)	5
Clerk	2
Laboratory Technician	1
Driver with ambulance	3
Class IV	4
Total	21

Garden and Children's Playground: About 1 ha of land could be devoted for this purpose. In addition, it is also suggested that this playground is

located in the vicinity of the school. This would enable school children could also make use of this playground during recess.

It is suggested to install swings, park benches and other items in the garden and install goal posts and make provision for racing track in the play ground. A lump-sum cost of Rs. 21 lakh is being kept for creation and beautification of garden and playground.

Two gardeners per resettlement site could be engaged for taking care and maintenance of these facilities. The recurring expenses towards salaries, plants and trees, manures, benches and other equipment is suggested to be borne by the Project Development Authority or by the State Government.

- **Educational Institutions (schools) in Resettlement Sites:** It is suggested to construct a primary school, along with Anganwadi in the resettlement site. For this purpose, a plot of about 250 m² with a build-up area of 200 m² could be allocated for the school building in each site. An amount of Rs. 86 lakh is being earmarked for construction of primary school along with anganwadi building in the resettlement site.
- **Space for Weekly Market:** It is also proposed to allocate 0.15 ha of land in each of the resettlement colonies for weekly market. This area will remain un-developed, where vender could come in on a weekly basis, set up their temporary shops to sell local produce. An amount of Rs. 18 lakh can be earmarked for this purpose.

An amount of Rs. 2052 lakh has been kept for providing civic amenities and infrastructure facilities in the resettlement sites. Summary of amenities and facilities to be provided in resettlement sites are summarized in Table- 12.74.

Table- 12.74

Summary of Amenities and Facilities to be Provided in Resettlement Sites

Sl. No.	Amenities and Infrastructure Facilities to be Provided in Resettlement Sites	Cost (Rupees in lakh)
1	Internal village roads	360
2	Drainage network	52

3	Sanitation network	343
4	Sewage treatment	86
5	Drinking water supply	387
6	Footpath	34
7	Public transportation-Construction of bus stop	14
8	Drinking water trough for cattle	21
9	Place of worship	18
10	Cremation ground	52
11	Fair price shop and 4 other shops	18
12	Construction of Post office	18
13	Construction of Panchayat Ghar	69
14	Construction of Community Hall	69
15	Primary Health Centre	386
16	Garden and Children's playground	21
17	Primary school along with anganwadi building	86
18	Space or weekly market	18
	Total	2052

12.3.3.2 Measures for Rehabilitation

In the proposed project, majority of the population depends on land for their livelihood. Privately owned land is also expected to be acquired. 2398 families are likely to lose their land. Rehabilitation measures suggested to the Project Affected Families (PAFs) losing land are given in Table- 12.75 and 12.76 respectively due to dams and canal.

Table 12.75
Provisions for Rehabilitation Plan for Families Losing Land Due To
Submergence of Reservoirs

Sl. No.	Description	Amount (Rupees in lakh)
1	Rural artisans / Self employed: One time financial assistance of a minimum of Rs. 25,000 to each affected family of an artisan, small trader or self employed person or an affected family which owned non-agricultural land or commercial, industrial or institutional	2398 PAFs x Rs. 25000 / PAF =599.50

Sl. No.	Description	Amount (Rupees in lakh)
	structure in affected area and which has been involuntarily displaced from affected area due to land acquisition.	
2	Land acquisition earmarked for PAF as compensation for losing land	2364 ha x Rs.15 lakh per hectare =35460.00
3	Choice of Annuity or Employment: a) At least one member per affected family will be provided job (either in project or arrange for a job in such other project) after providing suitable training and skill development in required field Or b) One-time payment of Rs. 5,00,000 per affected family Or c) Annuity policies that shall pay not less than Rs. 2000 per month per family for 20 years with appropriate indexation to Consumer Price Index for Agricultural Labourers.	2398 PAFs x Rs. 2000 per month x 12 months for 20 years =11510.40
4	Training of affected persons so as to enable such persons to take on suitable jobs	2398 PAFs x Rs. 5000/month x 6 months for each PAF =719.40
5	Scholarships and other skill development opportunities to eligible persons from affected families as per criteria as may be fixed by appropriate government.	2398 PAFs x Rs. 500/month x 12 months for each PAF =143.88
6	Skill development opportunities to eligible persons from affected families as per criteria as may be fixed by appropriate government	2398 PAFs x Rs. 500/month x 6 months for each PAF =71.94
7	Trasining to RandR staff	LS 35.00
8	Land for colonies, quarries, approach	LS 1121.00

Sl. No.	Description	Amount (Rupees in lakh)
	roads including solatium, Establishment and unforeseen charges	
Total		49661.12

Table 12.76
Provisions for Rehabilitation Plan for Families Losing Land Due to Link Canal

Sl. No.	Description	Assumed Provision	Cost (Rupees in lakh)
1	Land acquisition earmarked for PAF as compensation for losing land along link canal		
A	i Culturable land-2465.30 ha	2465.30 ha x Rs.10 lakh per hectare	24653.00
	ii Unculturable land-323.20 ha	323.20 ha x Rs.5 lakh per hectare	1616.00
	iii Land for approach roads	50 ha x Rs.5 lakh per hectare	250.00
	iv Land for colonies	100 ha x Rs.5 lakh per hectare	500.00
B	Land required for canal structures (10% of the above)	440 ha x Rs.10 lakh per hectare	4400.00
2	Standing crop loss	@ 25% of Item No.1(A)(i)	6163.25
3	Acquisition of other properties	LS	30.00
4	Rent for use of land prior to acquisition	LS	8.00
5	Compensation for temporary acquisition of borrow areas	15% of Item 1(A)(ii)	3697.95
6	Solatium charges	@ 30% of cost of land acquisition on item No.1 on	9425.70

Sl. No.	Description	Assumed Provision	Cost (Rupees in lakh)
		account of compulsory acquisition of land	
7	Staff for Demarcation/ measurement of land and properties	@1 % of cost of land acquisition on item no.1and6	408.45
8	Establishment charges for land acquisition	@ 6.25% of cost of compensation i.e on Items 1 and 6.	2552.79
9	Rehabilitation measures	LS	15.00
10	Interest charges for time lag in taking possession of land for 2 years	@ 9% per annum for 25% on Items 1 and 6.	1838.01
11	Legal Charges	@ 1% of Item No.1and6	408.45
12	Unforeseen and miscellaneous charges	@ 5% of item 1and6	2042.24
Total			58008.83

12.3.4 Local Area Development Plan

The objective of the plan is to empower families of the study area villages and partially affected villages. Villages which need to be relocated shall be provided Rehabilitation and Resettlement benefits as per the Policy and also other resettlement benefits. Contrarily, it is the project affected families residing in partially affected who are not likely to benefit from the proposed project except for compensation of their acquired properties, which would be mostly part of their lands. Thus, Local Area Development Plan has been framed to extend benefits to not only the residents of the partially affected villages, but also to residents of the villages adjoining to project area which are also within the study area villages. The following aspects have been covered under the Local Area Development Plan.

- Educational Facilities

- Health Care and Medical Facilities
- Infrastructure Development
- Economic Development
- Social and Cultural Development

The estimated cost for Local Area Development Plan has been worked out as 2284 lakh. The details are given in Table-12.77.

Table- 12.77
Cost for Implementation of Local Area Development Plan

Sl. No.	Items	Cost (Rupees in lakh)
1	Construction/Up gradation schools in Study Area	1220
2	Scholarships to students in the Study Area	744
3	Improvement of Public Health Facility	320
	Total	2284

12.3.5 Monitoring and Evaluation

The successful implementation of Rehabilitation and Resettlement Plan of Project Affected People requires continuous monitoring of the programme at different levels. NRRP - 2007 lays provision for appointment for commissioner Rehabilitation and Resettlement and Administrator Rehabilitation and Resettlement to ensure smooth and effective land acquisition, implementation of Rehabilitation and Resettlement measures, monitoring of Rehabilitation and Resettlement operations etc. The State Government shall appoint an officer of the rank of Commissioner / Secretary of that government for Rehabilitation and Resettlement in respect of such projects to which this policy (NRRP - 2007) applies. The State Government shall, by notification, appoint an officer not below the rank of District Collector of the State Government to be Administrator for Rehabilitation and Resettlement in respect of that project. Subject to the superintendence, directions and control of the appropriate Government and Commissioner for Rehabilitation and Resettlement, the Administrator for Rehabilitation and Resettlement shall take all measures for the rehabilitation and resettlement of all Project Affected Families in respect of that project. The overall control and superintendence of the formulation of Rehabilitation and Resettlement

Plan and execution of the same shall rest in the Administration for Rehabilitation and Resettlement. Following institutional arrangement is suggested for effective implementation and monitoring of Rehabilitation and Resettlement activities.

(i) Supervisory Body

- Commissioner for Rehabilitation and Resettlement
- Concerned Chief Engineer of National Water Development Agency/ Project Authority.

(ii) Implementation Body

- Administrator for Rehabilitation and Resettlement
- Head of Project from National Water Development Agency
- Representatives of village level Committees
- Representatives of women of the affected villages.
- Representatives of Nationalized Bank
- Representatives of Forest Department
- Representatives of Local Non-Governmental Organizations
- Member of Legislative Assembly/Member of Parliament of Area

Besides the foregoing organizational arrangement, liaison should be established by the Administrator for Rehabilitation and Resettlement with the other government departments, which will extend support in the implementation of land acquisition and rehabilitation programmes. Specifically, government organizations like Department of Revenue, Rural Development, Agriculture, Forest, Horticulture, Rural Industries etc, can be contacted for dovetailing their programmes for the economic rehabilitation of Project Affected Families. These organizations / departments shall not only extend their various development schemes for the economic welfare of the Project Affected Families but would also provide technical guidance and training to Project Affected Families in carrying out economic activities.

The monitoring and evaluation can continue for several years after actual relocation. The frequency of monitoring can be reduced after the completion of Rehabilitation and Resettlement work. The monitoring reports need to be submitted periodically to assess progress of resettlement and its

effects compared with established policy and specific timetables and benchmarks at each phase. Provision of Rs. 210 lakh kept for Monitoring and Evaluation Aspects.

12.3.6 Cost of Rehabilitation and Resettlement Plan

Total 2509 families would be affected due to this project. All these Project Affected Families will be provided Rehabilitation and Resettlement assistance. The rehabilitation assistance would include sanction of productive asset grant to each head of project affected households and also to each of the major son of such households, besides provision of subsistence allowance, annuity, mandatory employment for one member from each family or compensation, Rehabilitation and Resettlement relief aid, vocational training grant, etc. The costs for resettlement of displaced persons includes free residential plot, house building assistance, grant for construction of cattle shed, and civic amenities like domestic water, electricity, school, play ground and children park, health centre, resettlement centre, place of worship, community hall, sanitation, drainage, approach roads, public transport, place of funeral etc. This excludes the cost of compensation for families losing land, which shall be decided based on market rates finalised by the district administration. The total cost for implementation of Rehabilitation and Resettlement Plan is Rs. 1126 crore as detailed in Table- 12.78.

Table- 12.78

Cost for Implementation of Resettlement and Rehabilitation Plan

Sl. No.	Components of Rehabilitation and Resettlement	Cost (Rs. in Crore)
A	Resettlement Plan	
1	Land required for providing Housing plots @ 250 m ² to 111 house losers = 4.2 ha (including land for civic [amenities and infrastructure facilities) @ Rs.5 lakh / ha	0.21
2	House building assistance	1.67
3	Financial assistance for construction of cattle-shed	0.28
4	Financial assistance for shifting of the family, building material, belongings and cattle	0.56
5	Subsistence allowance	0.40
6	One time Resettlement allowance	0.56
7	Civic amenities and Infrastructure facilities at Resettlement colony	20.52
	Sub-total (A)	24.20

B	Rehabilitation Plan	
1	Compensation for loosing land for dams (2364 ha)@15 lakhs/ha	354.60
2	Annuity to PAFs	115.10
3	Grant to Rural Artisans	6.00
4	Training to take on suitable jobs	7.19
5	Training to RandR Staff	0.35
6	Scholarships	1.44
7	Other Skill Development	0.72
8	Land for colonies, quarries, approach roads including solatium, Establishment and unforeseen charges	11.21
9	Compensation for loosing land for link canal as detailed in Table-12.76	580.09
	Sub-total (B)	1076.70
C	Local Area Development Plan	22.84
D	Monitoring and Evaluation Aspects	1.80
	Total (A+B+C+D)	1125.54
	Say	1126.00