

# Rehabilitation-The Problem of Dam Affected Displaced People: A Study of Warna River Basin, Maharashtra

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**Abstract:** *It is true that dams and reservoirs provide economic and social benefits that contributes drastically to the management of water, which is becoming an inadequate resource. Besides this, these dams and reservoirs may have undesirable environmental and social impacts. The most challenging social impact of dams is the displacement of native people. This is one of the worst impacts of the dam construction on communities, people, whole families, that have been forced to leave their homes and relocate somewhere else. Therefore, an increasing demand for detailed and accurate assessments of the socio-economic impacts may be expected.*

**Keywords:** Rehabilitation, Questionnaire Survey, Level of Development, Composite index, Education, Occupation Status

## 1. Introduction

The most challenging social impact of dam is the displacement of native people. After resettlement, the displacement of native people have faced many social problem such as disturbance of family relationship, poor drinking water facilities, lack of infrastructure amenities, scarcity of educational, medical, road and transportation, electrical facilities, absence of public toilet facilities, deficiency of market centre and lack of water for irrigation. The disturbed people are getting the remuneration, but the facilities are not proper. At some places the affected population have provided the unfertile lands, their standard of living is decreased.

Therefore, the detail study of socio-economic development for rehabilitated people and impact of dam have carried out using selected indicators like-educational attainment, occupational structure, family annual income, types of houses, types of farmers, irrigation sources, soil type and cropping pattern. The survey has carried out with the help of questionnaire that has formulated on account of all the relevant aspects mentioned above, 10% sample of household are considered for present research work. Overall 21 villages Tung (Bhomiv), Bagani (Nandoli), Kavatepiran (Shidheshwar), Kini (Karade), Chavare (Karade), Peth Wadgaon (Sonarli), Aashte (Aamboli), Bhadhurwadi (Chandoli Buk.), Latavade (Aamboli), Aarala (Chandoli Budruk), Mangale (Nandoli), New Pargaon (Karade), Kasabe Digrag (Zalambi), Rethare (Aamboli), Chikurde (Khundalapur), Peth Wadgaon (Tambave), Aarle (Karade), Kodoli (Wadi Hudub), Khumbhoj (Dhurgewadi), Satve (Durgewadi), Kakhe (Karade) have considered for detailed study. The study assessed the socio-economic conditions of the affected population and collected the basic information and their problems.

## 2. Research Methodology

Present Study has identified that, whether Irrigation project

scheme has provided the improved living conditions and unbiased distribution of the benefits of the project to the population. There is an urgent requirement for a Social Impact Assessment for Chandoli dam therefore a comprehensive socio-economic study and impact of Dam has been carried out. Indicators for socio economic status of rehabilitated population like - income from agriculture, annual income of household, concrete houses, road facilities, school/education facilities, medical facilities, drinking water facilities etc. have considered. In this connection information on following aspects has been collected.

- 1) Opinion of the dam affected population on the resettlement aspects and its facilities after displacement.
- 2) Compensation package for the affected population
- 3) Migration patterns into and out of the project area.
- 4) Impact on change in occupational pattern.

The collected socio-economic data, was carried out so as to undertake preliminary planning. The data base have been organised in such a way that can be used in GIS Softwares.

Finally in terms of primary data, the information and statistical data was generated from the Warna river basin and from the displaced settlements. Total 21 villages has selected for Socio economic survey of rehabilitation villages The details of the villages are shown in table no. 1. From each village 10 % households/families had been considered for questionnaire survey (Appendix- A). Questionnaire was formulated on account of all the relevant socio-economic aspects. The methodology also includes: individual household case study and institutional analysis. Door to door house hold survey for selected sampled households were carried out.

Research Design and Data Analysis : The generated data has tabulated and systematically processed and interpreted. Most of the analysis have been carried out based on the relevant statistical tools such as Percentage, Averages, quartiles and weightages/scores. The analysed data for various parameters collected from selected villages (i.e. 21 villages) were processes and graphs/maps were prepared. The composite

index for the level of development assessed on the basis of various parameters like Education for 5 to 10<sup>th</sup> standard , 12<sup>th</sup> , Graduate , Post Graduate ; Farmers,Self Employment, Farm Worker, Job, Income categories Rupees : Below 10,000 ; 10,000 to 25,000 ; 25,000 to 50,000 ; 50,000 to 1,00,000 ; Above 1,00,000 ; Pakka RCC / Concret houses; Bagayati land; River ; Well ; Borewell ; Canal ; Project ; Motors ; Borewell; Diesel Pump; Other.

**Table 1:** 21 Rehabilitated villages for socio-economic impact study

Sr. No.	Name of villages	Questionnaires/No. of families surveyed
1	Peth Wadgaon (Sonarli)	45
2	Bahadthurwadi (Chandoli Buk.)	7
3	Peth Wadgaon (Tambave)	7
4	Aarala (Chandoli Budruk)	11
5	Chavare (Karade)	10
6	Rethare (Aamboli)	23
7	Kakhe ( Karade)	39
8	New Pargaon (Karade)	5
9	Mangale ( Nandoli)	5
10	Aarle ( Karade)	4
11	Satve( Durgewadi)	3
12	Kini (Karade)	3
13	Latawade (Aamboli)	8
14	Tung (Bhomiv)	8
15	Kavatepiran ( Shidheshwar)	8
16	Kasabe Digrag ( Zolambi)	8
17	Bagani ( Nandoli)	10
18	Kodoli (Wadi Hudumb)	12
19	Aashte ( Aamboli)	5
20	Chikurde ( Khundalapur )	21
21	Kumbhoj ( Dhurgewadi)	40
	Total	282

### 3. Result and Discussions

According to Webber, McDonald Brooke and mccully (1996) India has a problem regarding the resettlement schemes that occurs due to dam construction. When construction of dam starts, then the process of resettlement also starts. In some area it has documented that the problem of resettlement becomes a critical problem since for 2-3 decades [1].

"When people are forcibly displaced, production systems are dismantled., many jobs, much valuable land and other income generating assets are lost. and not only the affected people are worse off: when displacement is massive, it also weakens the local and regional economy (Cernea, 1996; Webber and McDonald,2010)" [2], [3].

In 21 villages questionnaire survey has conducted for socio-economic status of displaced people. During the survey interviews villages and community leaders were also interviewed. Many of the interviewers were given their responses to the questionnaire survey [4].

### 3.1 Level of development for Rehabilitated Villages

The Table no.2 ( Appendix- B ) demonstrates the composite index for the level of development assessed on the basis of various parameters like Education for 5 to 10<sup>th</sup> standard 2) 12<sup>th</sup> 3) Graduate 4) Post Graduate ; Farmers,Self Employment, Farm Worker, Job, Income categories Rupess : Below 10,000 ; 10,000 to 25,000 ; 25,000 to 50,000 ; 50,000 to 1,00,000 ; Above 1,00,000 ; Pakka RCC / Concret houses; Bagayati land; River ; Well ; Borewell ; Canal ; Project ; Motors ; Borewell; Diesel Pump; Other.

The level of development for the villages are high for the villages-Tung (Bhomiv), Bagani ( Nandoli), Kavatepiran ( Shidheshwar) , Kini (Karade), Chavare (Karade), Peth Wadgaon (Sonarli).

The villages Aashte ( Aamboli), Bhadthurwadi (Chandoli Buk.) Latawade (Aamboli), Aarala (Chandoli Budruk), Mangale ( Nandoli), shows moderate growth .

New Pargaon (Karade), Kasabe Digrag ( Zalambi), Rethare (Aamboli), Chikurde ( Khundalapur ), Peth Wadgaon (Tambave) represents low level of development.

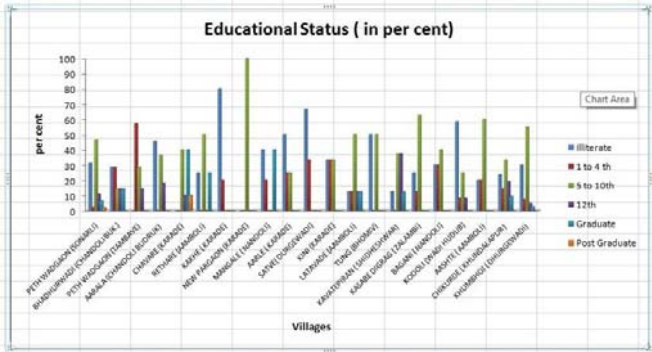
Aarle (Karade), Kodoli (Wadi Hudub), Khumbhoj (Dhurgewadi), Satve( Durgewadi), Kakhe ( Karade) comes in the catetory of very low (fig1-7).

#### Level of Development : High

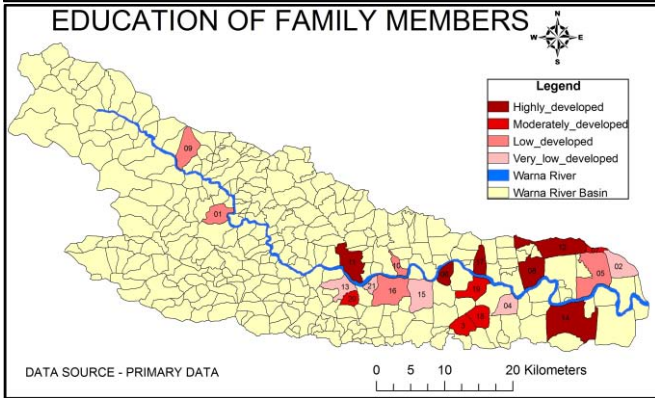
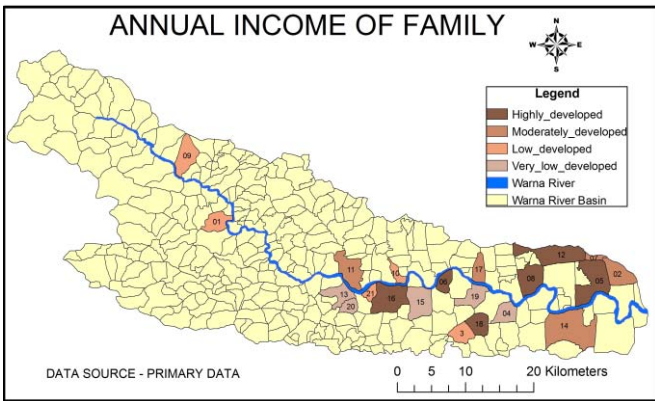
The villages: Tung (Bhomiv), Bagani (Nandoli), Kavatepiran (Shidheshwar) , Kini (Karade), Chavare (Karade) exhibits high values of composite index i.e. 26.56, 24.79, 24.24, 22.85 and 20.90 respectively. These values are the outcome of the values projected by the basic factors, wherein, Tung explicitly shows 44.87% of pupils are getting on with 5th to 10th education, 37.5 depends on farm or agriculture, 37.5% of people have annual family income in the range of 25,000-50,000; 50,000 to one lakh falling under this category. Moreover 87.50% of people have puccha type of house construction. People from this village getting more benefit of irrigation, the people are using motors for irrigation practices. This trend is followed by other four villages with slight variations in the base values.

#### Level of Development : Moderate

The rehabilitated villages comes under this category is known to be moderately developed villages because their composite index fall in the range of 18.2 to 15.5. These villages are Aashte ( Aamboli), Bhadthurwadi (Chandoli Buk.) Latawade (Aamboli), Aarala (Chandoli Budruk), Mangale ( Nandoli). For instance, village Aarala reveals that 46.97 % pupil are going to take the education in between 5th to 10th standard; 15.15% students are in the 12th standard and 3% are graduates. Whereas, 27.27%of people have agricultural lands, hence are farmers. In context with the annual income of family, near about 45.4% population fall under the category of 50,000 to one lakh and above. Here in,



**Figure 1: Educational status of Rehabilitated villages**

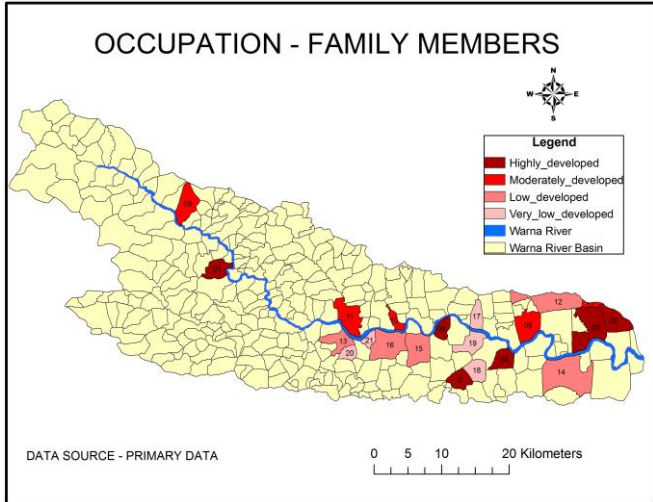


**Figure 2:** Annual income and Education of Rehabilitated villages

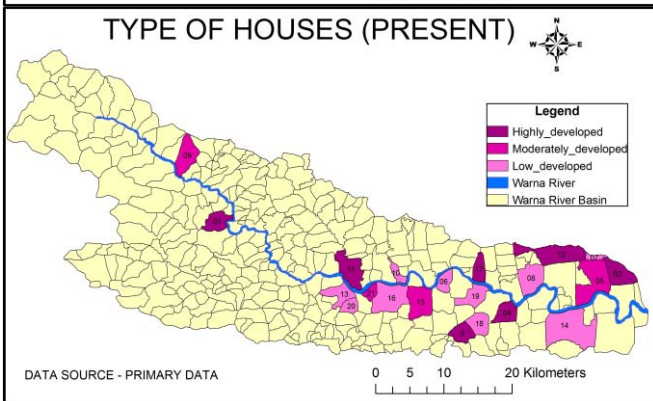
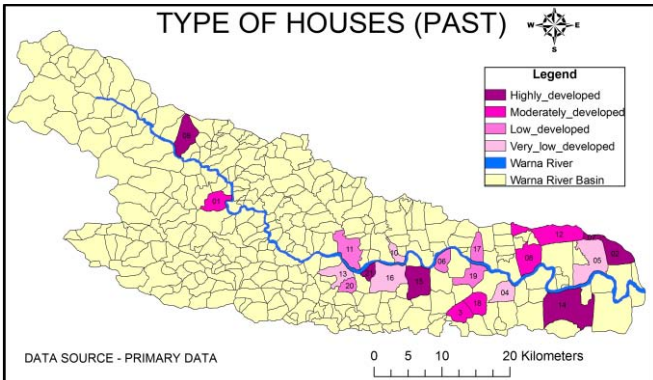
81 % population lives in puccha house whereas, 87 % are having bagayati land. more than 87% uses diesel pumps for irrigation. Therefore, the computed value of composite index 17.36, hence, falling under the category of moderate development.

**Level of Development : Low**

The villages following under this category are getting less facilities, for instance Peth wadgaon, shows 71.43 % of agricultural field and 9.52 % population only having



**Figure 3: Occupation of Rehabilitated villages**



### Figure 4: Type of Houses

government or private jobs. Near about 43 % of population fall under the annual income category of rupees 25,000 to 50,000. On the other hand , 47.62% of people have annual income in the range of 50,000 to one lakh. All the people from these villages lives in Pakka-type of housing contributing 100%. They are also using diesel pumps for irrigation.

**Level of Development : Very Low**

Rest of the villages i.e. Aarle ( Karade), Kodoli (Wadi



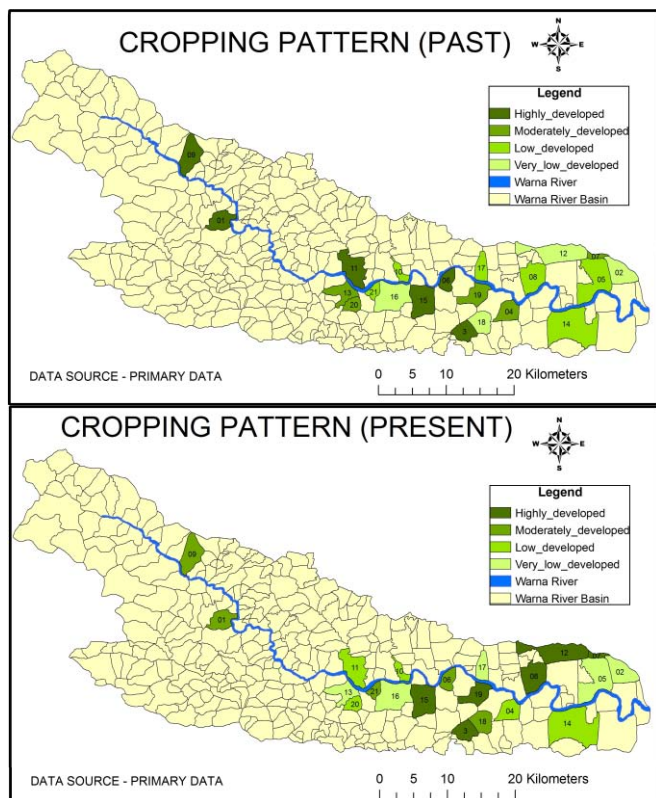


Figure 5: Cropping Pattern

Hudub), Khumbhoj (Dhurgewadi), Satve (Durgewadi), Kakhe (Karade) are getting very few facilities and comes in the category of very low- Development. Most of the population depends on the agricultural facilities. More than 75% population depends upon other source of irrigation, particularly in Satve village the index represents 11.60-6.20. The villages falling in the same category shows same scenario with very minute differences in the composite index.

### Overview

The villages falling under high to moderate level of development have composite index in the range of 15.5 to 26.56. The highest rate of development is contributed by the village Tung, where lowest is Mangle contributed to 15.5. Most of these villages don't rely on river for the direct source as a mode of irrigation, also not having the canal facilities for irrigation. Rather these villages are depends on projects and borewell as a mode of irrigation. The villages that ranges between low to very low level of development lies between 6.20 to 13.2. These villages typically do not have river, borewell and canal facilities. Moreover they do not use motors and borewell for irrigation. There is water scarcity problems in these villages. Most of the village people do not prefer working in farm land as a labourer, rather they are self employed or have jobs in government or private sectors. on an average people prefer living in pucca type house. Overall, except two villages i.e. Peth-Wadgaon and Kumbhoj, there is

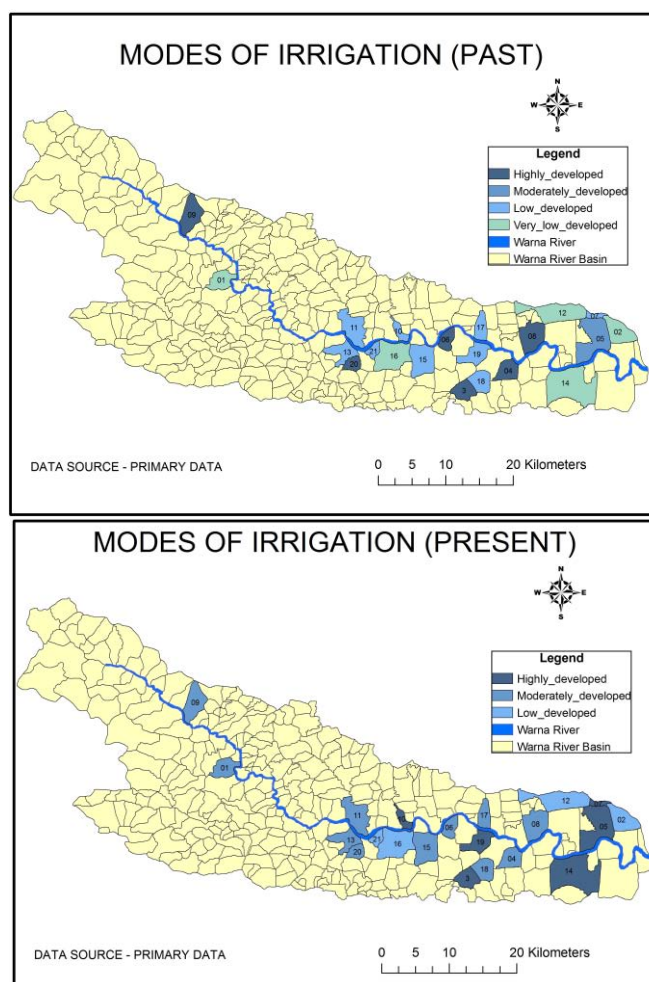


Figure 6: Mode of Irrigation

nil utilization of other modes for irrigation, Very few villages have students of post graduation and graduation. Most of the parents tend to send their child to agricultural land for working rather than sending them to school for education.

### 3.2 Observations

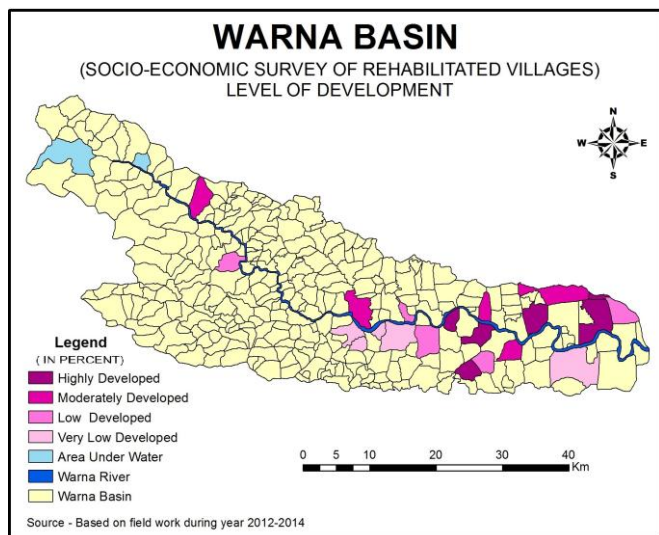
During field work and study some villages are found to be in good conditions, but at some villages the rehabilitated settlement is very poor. Some observations are discussed below:

#### Lack Of Educational Facilities

After resettlement, the school and educational facilities are declining in some villages. The less number of educational amenities have been faced by children in the resettled settlements.

#### Infrastructure

Before dam construction, rehabilitated population were satisfied about infrastructure amenities. Thereafter, shifting the villages to the new location, they have suffered lack of poor infrastructure amenities, some displaced people got good facilities (fig 9-10). In some villages, people have faced poor sanitation facilities. The constructed sewage are opened in form. As a result, they are blocked due to garbage



**Figure 7:** Level of development: Rehabilitated villages



**Figure 8:** Rehabilitation-Questionnaire survey



**Figure 9:** Good metalled road in re-settlement in Chikurde village

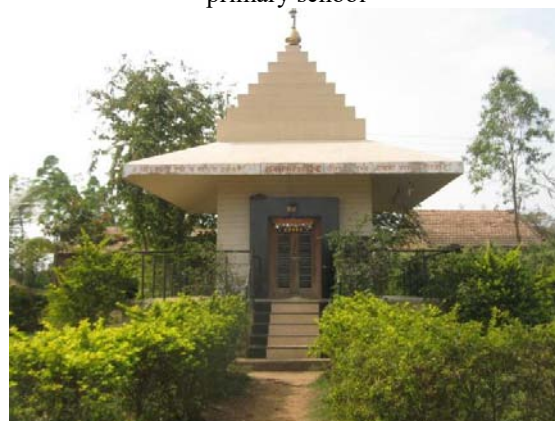
like leaves of plant, plastic bags and domestic wastage (fig. 12). The good conditions of houses in pethwadgan (sonarli) have observed. The displaced population protested against government for demanding their pending demands. At Khundlapur (original village at dam site) the population have not shifted, therefore houses and roads are in poor conditions, that needs repairing of infrastructure.

### Occupation

After displacement, the people have suffered changing occupational structure as well as increased unemployment due to loss of agricultural source of subsistence. The affected



**Figure 10:** Rehabilitation of chandoli at Kini village - primary school



**Figure 11:** Rehabilitation at Latavade village - Temple



**Figure 12:** Rehabilitation at Latavade village –sewage

people have engaged in agricultural and other economic activities, males are migrated to other place for searching new job. As a result, more family member becomes unemployed due to changing occupational structure.



It has been observed that many, young generation at an average age of 25-30 years are jobless, there should be some arrangement of employment clubbing with some other problems of rehabilitation, severity of insecurity feeling is increased day by day. It has seen that, many villages are facing problem due to lack of food crops, and lower incomes from all sources .

#### 4. Conclusion

Dams provide more and sufficient benefits to the people, also impact on their economic and social well-being. Various experiences reflect that there are positive and negative impact of dam. Dams, by providing water for irrigation purposes reduces the flood problems, huge impounded water also used for power generation. These are the major positive effects of dam but dams are also responsible for social and cultural deterioration. The serious problem occurs due to dam is resettlement of the displaced people, who have lost their ancestral property. The most challenging social impact of dam is the displacement of native people. After resettlement, the displacement of native people have faced many social problem such as disturbance of family relationship, poor drinking water facilities, lack of infrastructure amenities, lack of education, medical, road and transportation, electrical facilities, absence of public toilet facilities, deficiency of market center and lack of water for irrigation. During the field work it has noted that some villagers are not ready to vacate their ancestral land and houses. They are still leaving in the same area, although they have given the new places for re-settlement. Government forcefully tried to shift them in newly rehabilitated villages, but some complaints have been arises by the displaced people regarding new rehabilitated villages. Some villagers, particularly the old people they are very unhappy due to Warna dam irrigation project. Their demands have not been fulfilled so far. During the survey in the rehabilitated areas, the problems are very serious regarding their land acquisition. In some villages the drinking water supply is not provided. Middle and Down stream basin villages are more developed due to irrigation facilities. Occupational opportunities should be increased for the displaced population. The government should provide employment opportunities for rehabilitated people.

#### 5. Acknowledgement

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#### Appendix- A- Questionnaire : Rehabilitation Survey

1

Shivaji University, Kolhapur

Department of Geography

(Dr. Jagdish. B. Sapkale, Project Director ICSSR Major Research Project)

**Rehabilitation Survey**

Name of Surveyor: \_\_\_\_\_ Date: \_\_\_\_\_ Location: \_\_\_\_\_

( Note : This Questionnaire has prepared by myself - Dr Jagdish B Sapkale in Marathi (of 09 pages)during field work and then translated in English)

1. Name of Your Ancestral / Permanent Village :
2. Name of Present Resettled village :
3. Year of Migration ? :
4. Head of the Family :
5. Name of the Interviewee :
6. Age :
7. Sex : Female ☐ Male ☐
8. Education (A) Illiterate ☐ (D) Up to XII<sup>th</sup> ☐
- (B) Standard I to IV<sup>th</sup> ☐ (E) Graduate ☐
- (C) Standard V to X<sup>th</sup> ☐ (F) Post Graduate / Higher Educated ☐
9. Occupation : (A) Farmer ☐ (D) On Daily Wages ☐
- (B)Self Employed/ Business Men ☐ (E) Unemployed ☐
- (C) Pasant ☐ (F) House Wife ☐ (G) Retired ☐
10. Religion: \_\_\_\_\_ 11. Caste : \_\_\_\_\_ (Category ) \_\_\_\_\_ 12. Sub Caste: \_\_\_\_\_
13. Family Type: (A) Joint Family: ☐ (B) Single Family: ☐
14. Total Number of Family Member : \_\_\_\_\_
15. Details of the Family Members :

Sr. No.	Name of Family Members	Age	Education	Relation With Head of the Family	Female	Male	Occupation	Migration	Annual Income

2

16. Annul Income of Family: (A) Less Than 10,000 Rupees ☐ (B) 10,000 to 25,000 ☐

(C) Rs. 25,000 to 50,000 ☐ (D) 50,000 to 1,00,000 ☐

(E) More than 1,00,000 Rupees ☐

**HOUSE**

17. House Number : \_\_\_\_\_ 18.: Gat No of House : \_\_\_\_\_

Before ☐ Now ☐ Before ☐ Now ☐

(here 'Before'/'Previously' means Prior to dam construction and 'Now'/'Presently' means after dam construction)

19. Type of House :

Previously : (A) Hut ☐ (C) Pucca House (Stone Wall) ☐

(B) Kachcha House ☐ (D) R.C.C./Concrete House ☐

Presently : (A) Hut ☐ (C) Pucca House (Stone Wall) ☐

(B) Kachcha House ☐ (D) R.C.C./Concrete House ☐

20. Area of House :

Previously : Square Feet: \_\_\_\_\_ Square Metre : \_\_\_\_\_

Presently : Square Feet: \_\_\_\_\_ Square Metre : \_\_\_\_\_

21. Material Used for the Construction of House :

Previously	Wood	Bricks	Stones	Cement	Tin Shed	Soil	Iron	Any Other
Presently	Wood	Bricks	Stones	Cement	Tin Shed	Soil	Iron	Any Other

22. Total Number of Rooms in your house : Previously :  Presently

23. Transportation Facility/vehicle available with you.

Previously :

Bi-cycle	Bullock Cart	Motorcycle	Scooter	Tractor	Truck	Rickshaw	Tempo	Car	Jeep	Any other	
Presently:	Bi-cycle	Bullock Cart	Motorcycle	Scooter	Tractor	Truck	Rickshaw	Tempo	Car	Jeep	Any other

3

24. How old is your house?

25. Important items Articles Available in your house

Previously	Landline Phone	T.V	Mobile Phone (Numbers)	Computer /Laptop	Washing machine	Freeze	Other
Presently	Landline Phone	T.V	Mobile Phone (Numbers)	Computer /Laptop	Washing machine	Freeze	Other

#### FARM

26. Had you holding agricultural land Previously: (A) Yes: ☐ (B) No: ☐

26a. Are you having your own Agricultural land Now: (A) Yes: ☐ (B) No: ☐

27. If yes GAT No. of Agricultural Land:

28. Total area of Agricultural Land :

Previously : Hectare: Acre: Guntha(R):

Presently : Hectare: Acre: Guntha(R):

29. Distance of Agri. Land from House:

Previously : Km: Meter:

Presently : Km: Meter:

30. Type of Agri. Land :

Previously (Before Dam Construction )

Arable: Hectare: Acre: Guntha(R):

Horticulture: Hectare: Acre: Guntha(R):

Uncultivated/Barren: Hectare: Acre: Guntha(R):

Presently (After Dam Construction)

Arable: Hectare: Acre: Guntha(R):

Horticulture: Hectare: Acre: Guntha(R):

Uncultivated/Barren: Hectare: Acre: Guntha(R):

30a.Distance of Agricultural Land From \_\_\_\_\_River :

31. Is there any Progress in Agricultural Productivity after Construction of Dam ?

4

32. **Prior to Dam** construction, What type of irrigation facility & equipment were used for Agriculture ?

River	Well	Tube Well	Canal	Reservoir/Dam	Depend on Rainfall
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Electric Pump	Bore-well with electric Connection	Diesel pump	Other
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33. **Now after Dam** Construction, what type of irrigation & equipment in used ?

River	Well	Tube Well	Canal	Reservoir/Dam	Depend on Rainfall
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Electric Pump	Bore-well with electric Connection	Diesel pump	Other
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34. Texture of Agricultural Land:

Previously : (A)Fertile: ☐ (B) Unfertile: ☐

Presently : (A)Fertile: ☐ (B) Unfertile: ☐

35. Is there any change in Agri. land after 20 to 25 years. (A) Yes: ☐ (B) No: ☐

36. Any Other Change ? Soil erosion etc :

37. What type of Fertilizers: Previously (A) Organic: ☐ (B) Chemical Fertilizers: ☐ (C) Both: ☐

Used for Agriculture Presently : (A) Organic: ☐ (B) Chemical Fertilizers: ☐ (C) Both: ☐

38. Agricultural Crops :

Previously	Sugar Cane	Rice	Jawar	Maize	Ground nut	Vegetables	Other
Average Production							
Presently	Sugar Cane	Rice	Jawar	Maize	Ground nut	Vegetables	Other
Average Production							

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39. Soil type in Agricultural land :

Previously	Black	Red	Alluvium	Mud	Conglomerated or Weathered	Other
Presently	Black	Red	Alluvium	Mud	Conglomerated or Weathered	Other

40. Besides Agriculture, any other occupation :

Previously (A) Yes: ☐ (B) No: ☐

Presently (A) Yes: ☐ (B) No: ☐

41. Are you having domestic Animals:

Previously (Before Dam Construction )

Presently (After Dam Construction)

Type of Animals	Numbers	Usefulness

Type of Animals	Numbers	Usefulness

42. From Where you are getting fodder for animals?

Previously	From Agriculture	From Forest Hilly Area	By Purchasing
Presently	From Agriculture	From Forest Hilly Area	By Purchasing

#### EDUCATION/MARKET /MEDICAL

43. Availability of good Educational facilities?

Previously : (A) Yes: ☐ (B) No: ☐

Presently : (A) Yes: ☐ (B) No: ☐

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44. Availability of good Medical facilities ?

Previously : (A) Yes: ☐ (B) No: ☐

Presently : (A) Yes: ☐ (B) No: ☐

45. How many schools are there in your village?

Previously  Presently

46. Up to which standard Schools are there in your village?

Previously : Std 1<sup>st</sup> to 4<sup>th</sup> 5<sup>th</sup> to 10<sup>th</sup> 11<sup>th</sup> to 12<sup>th</sup> Up to Graduation

Presently : Std 1<sup>st</sup> to 4<sup>th</sup> 5<sup>th</sup> to 10<sup>th</sup> 11<sup>th</sup> to 12<sup>th</sup> Up to Graduation

47. Facilities of Market in your village

Previously (A) Yes: ☐ (B) No: ☐

Presently (A) Yes: ☐ (B) No: ☐

48. Location/place of Local Market ?

Previously  Presently

49. Availability of Hospital in your village?

Previously : (A) Yes: ☐ (B) No: ☐

Presently : (A) Yes: ☐ (B) No: ☐

50. Total number of Hospital in your village?

Previously  Presently

51. Total number of doctors in your village?

Previously  Presently

52. Type of Roads in village :

Previously : (A) Unmetalled Road: ☐ (B) Metalled Road: ☐

Presently : (A) Unmetalled Road: ☐ (B) Metalled Road: ☐

53. Availability of Daily Bus services

Previously : (A) Yes: ☐ (B) No: ☐

Presently : (A) Yes: ☐ (B) No: ☐

54. Any Recreation Facility Available :

Previously : (A) Yes: ☐ (B) No: ☐

Presently : (A) Yes: ☐ (B) No: ☐

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55. Sewage Facilities in Village?  
**Previously :** (A) Yes ☐ (B) No ☐  
**Presently :** (A) Yes ☐ (B) No ☐

55 a. Where the dirty / waste water from your house drained? :

56. Name of river near your village?  
**Previously :**  **Presently :**

57. From where drinking water was provided to you, Previously ?

River	Well	Tube Well	Canal	Reservoir / Dam
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57a. From where drinking water is provided to you, Now ?

River	Well	Tube Well	Canal	Reservoir / Dam
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58. For what purpose you were using river's water, Previously?

For Drinking	For Agriculture	For other Purpose
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58a. For what purpose you are using river's water, Now?

For Drinking	For Agriculture	For other Purpose
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59. Are you getting chandoli dam's water (Are dam's water reached in your village)?  
 (A) Yes (B) No

60. As per your perception, is there a benefit from this dam or Loss?  
 What type of Benefit :  
 What type of Loss :

61. At the time of migration from your ancestral village, how much remuneration (in terms of Rupees) have received from Government? :

61a. After dam Construction, is there any change in your annual income?  
 (A) Yes ☐ (B) No ☐

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62. As a Rehabilitated person how many persons of your family have given permanent job/govt. service?

63. Any Loss of Agricultural land under dam construction  
 How much area occupied by the project : Hectare: Acre : Guntha(R) :

64. Area of the New Agricultural land given Hectare: Acre : Guntha(R) :

65. Is agricultural Land is totally under cultivation (A) Yes ☐ (B) No ☐

66. At present, (prior to some years) opportunities in employment have increased?  
 (A) Yes ☐ (B) No ☐

If yes then which one :

66 a. Life style of people have improved? (A) Yes ☐ (B) No ☐

67. Are the villagers have facing problem of unemployed? (A) Yes ☐ (B) No ☐

68. After migration have you facing problem :

Socially	Yes <input type="checkbox"/> No <input type="checkbox"/>	Which Problem :
Economically	Yes <input type="checkbox"/> No <input type="checkbox"/>	Which Problem :
Environmental	Yes <input type="checkbox"/> No <input type="checkbox"/>	Which Problem :

69. Have crop productivity has increased in this village? Yes ☐ No ☐

70. Problem of soil erosion in this village? Yes ☐ No ☐

71. Is there any change in ground water level? Yes ☐ No ☐

72. Scarcity of water in this village? Yes ☐ No ☐

73. Lacking of educational facilities in this village? Yes ☐ No ☐

74. Lacking of medical facilities in this village? Yes ☐ No ☐

75. Have you facing problem regarding drought in village? Yes ☐ No ☐

76. Rainfall status in this village? Good ☐ Average ☐ Very less ☐

77. When you have shifted to the resettled village, How was the behavior of New villagers towards you? They helped you or not?

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78. Now, at present local people of this village helps you or not? Yes ☐ No ☐

79. Is the resettled village has established according to govt plan or planning?

80. Villagers of this village, celebrates festival with you all? At which Place?

81. Perception of villagers / people towards Chandoli dam :

Before dam construction :      After dam construction :

Perceptions regarding	Highly Satisfied	Moderately satisfied	Highly Unsatis fied
Economical Benefits			
Cultural Status			
Security services near forest area			
Quality of Agricultural Land			
Educational Facilities			
Health Facilities			
Transportation facilities			
Employment Opportunities			
Drinking Water facility			

Perceptions regarding	Highly Satisfied	Moderately satisfied	Highly Unsatisfied
Economical Benefits			
Cultural Status			
Security services near forest area			
Quality of Agricultural Land			
Educational Facilities			
Health Facilities			
Transportation facilities			
Employment Opportunities			
Drinking Water facility			

82. In this village, are you getting or provided more facilities than the local villagers ?  
 Yes ☐ No ☐

83. What is your opinion regarding this (Question no. 82)?

84. As a displaced person in this village, Who has helped you at the most for your development?  
 (A) Central Govt. ☐ (B) State Govt. ☐ (C) Political Leaders ☐  
 (D) Your Village level/Association Leader ☐ (E) Local people of this village ☐

85. Is there any impact on Environment due to construction of dam?

86. Is there any change /shift in river bed due to construction of dam?  
 (A) Yes ☐ (B) No ☐

If yes then what :

87. Is there any change in river water due to dam construction?  
 (A) Yes ☐ (B) No ☐

If yes, what?

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88. Due to dam construction, is river water poured out from both Banks?  
 (A) Yes ☐ (B) No ☐

89. Due to dam, is there any problem of flood in village?  
 (Flood occurs in your village due to dam.)  
 (A) Yes ☐ (B) No ☐

90. Are the numbers of trees have increased near or around the agriculture lands of villages?  
 (A) Yes ☐ (B) No ☐

91. Is, Common Lavatory is available in your village?  
**Previously:** (A) Yes ☐ (B) No ☐ , **Presently :** (A) Yes ☐ (B) No ☐

92. Availability of Lavatory in your house?  
**Previously:** (A) Yes ☐ (B) No ☐ , **Presently :** (A) Yes ☐ (B) No ☐

93. From where drinking water is supplied in your village? Is impure water processed for its purification?

94. Is there any epidemic disease occurs continuously in your village?  
**Previously:** (A) Yes ☐ (B) No ☐ , **Presently :** (A) Yes ☐ (B) No ☐

Which one :

95. Availability of electricity in village and in your house ?  
**Previously:** (A) Yes ☐ (B) No ☐ , **Presently :** (A) Yes ☐ (B) No ☐

96. Availability of Post Office in your village ?  
**Previously:** (A) Yes ☐ (B) No ☐ , **Presently :** (A) Yes ☐ (B) No ☐

97. By construction of dam, drinking water & water for irrigation have provided to villages that's why it is resulting for the development of villages & changes the life style of Villagers, Is it true? Please give your personal comment.

98. As a Dam affected person, What are your major problems?

99. Your ancestral houses, property had submerged under Warna dam and you had displaced to the new village, what is your opinion regarding this?

**Note : To avoid plagiarism, Please give the complete References/Citations in proper citation formats for the above published work/material, Questionnaire, sources.**

## Appendix - " B "

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**Table 2.1 : Socio-Economic Indicators of 21 Rehabilitated Villages (Warna Basin)**

VILLAGE NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	CD INDEX	REMARK
PETH WADGAON (SONARLI)	44.87	7.98	6.46	1.52	35.56	4.44	4.44	11.11	0.00	28.89	44.44	22.22	4.44	75.56	11.11	18.75	14.29	0.00	2.86	0.00	14.29	28.57	2.86	0.00	68.57	18.76	HIGH
TUNG (BHOMAVI)	42.59	9.26	3.70	1.85	37.50	0.00	12.50	0.00	0.00	0.00	37.50	50.00	12.50	87.50	0.00	37.50	0.00	20.00	0.00	0.00	80.00	100.00	0.00	0.00	0.00	26.56	HIGH
BAGANI (NANDOLI)	31.25	20.83	4.17	2.08	40.00	10.00	0.00	0.00	0.00	40.00	40.00	0.00	20.00	50.00	50.00	77.78	0.00	0.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	24.79	HIGH
KAVATIPUR (SHIHESHVAR)	38.18	10.91	7.27	0.00	50.00	0.00	12.50	12.50	0.00	37.50	25.00	12.50	25.00	75.00	0.00	16.67	0.00	37.50	0.00	0.00	62.50	75.00	0.00	25.00	0.00	24.24	HIGH
KINI (KARDE)	42.42	3.03	18.18	0.00	66.67	0.00	0.00	0.00	0.00	0.00	66.67	33.33	0.00	100.00	0.00	33.33	0.00	100.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	22.85	HIGH
CHIVASE (KARADE)	18.42	13.56	11.84	2.63	30.00	20.00	0.00	0.00	0.00	30.00	30.00	33.33	30.00	100.00	0.00	0.00	0.00	30.00	0.00	0.00	70.00	0.00	30.00	70.00	0.00	20.90	HIGH
ASHTI (JAMBOLI)	44.74	30.53	5.26	2.63	80.00	0.00	0.00	0.00	0.00	60.00	0.00	20.00	20.00	0.00	50.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.30	MODERATE
BHAGHURWADI (CHANDOLI BUK.)	25.93	22.22	14.81	3.70	85.71	0.00	0.00	0.00	0.00	14.29	28.57	42.86	14.29	85.71	0.00	85.71	0.00	14.29	0.00	0.00	85.71	0.00	0.00	100.00	0.00	18.06	MODERATE
LATRAYADE (AMBIOLI)	34.21	5.26	2.63	0.00	62.50	25.00	0.00	0.00	0.00	25.00	50.00	25.00	0.00	12.50	0.00	87.50	0.00	25.00	0.00	0.00	75.00	0.00	12.50	87.50	0.00	17.36	MODERATE
AMRALI (CHANDOLI BUDRUK)	46.97	15.15	3.03	0.00	27.27	9.09	0.00	18.18	0.00	45.45	45.45	9.09	0.00	81.82	0.00	66.67	0.00	33.33	0.00	0.00	66.67	0.00	0.00	100.00	0.00	15.73	MODERATE
MANGALE (NANDOLI)	30.23	6.98	4.65	2.33	60.00	0.00	0.00	20.00	0.00	0.00	40.00	40.00	20.00	60.00	0.00	50.00	0.00	50.00	0.00	0.00	50.00	0.00	0.00	100.00	0.00	15.51	MODERATE
NEW PARGAON (KARADE)	40.54	2.70	0.00	0.00	60.00	0.00	0.00	20.00	0.00	0.00	80.00	20.00	0.00	80.00	0.00	0.00	0.00	25.00	0.00	0.00	25.00	0.00	25.00	75.00	0.00	13.85	LOW
KASABE DINGRAG (ZALAMBI)	37.21	4.65	0.00	0.00	50.00	0.00	12.50	12.50	0.00	50.00	0.00	37.50	12.50	60.00	0.00	40.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.12	LOW
BETHARE (JAMBOLI)	52.17	17.39	4.35	0.00	25.00	0.00	0.00	25.00	0.00	50.00	50.00	0.00	0.00	25.00	0.00	25.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	100.00	0.00	13.04	LOW
CHIKURDE (KHUNDALAPUR)	40.00	13.00	8.00	0.00	71.43	9.52	0.00	0.00	0.00	9.52	42.86	47.62	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	11.01	LOW
PETH WADGAON (TAMBAVE)	32.26	16.13	9.68	0.00	71.43	0.00	0.00	0.00	0.00	28.57	0.00	47.62	28.57	8.57	1.43	100.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	12.06	LOW
AMRLE (KARADE)	28.57	14.29	14.29	0.00	100.00	0.00	0.00	0.00	0.00	25.00	50.00	25.00	0.00	100.00	0.00	0.00	33.33	0.00	0.00	0.00	66.67	0.00	0.00	100.00	0.00	11.60	VERY LOW
KODOLI (NAGH HADUB)	44.64	8.93	0.00	1.79	91.67	0.00	0.00	0.00	0.00	8.33	25.00	41.67	25.00	100.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.50	VERY LOW
KHUMBHOJI (DHURGAWADI)	37.66	11.72	4.18	1.67	50.00	0.00	0.00	5.00	0.00	15.00	40.00	37.50	7.50	100.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00	10.25	VERY LOW
SATVEI (DURGAWADI)	50.00	7.14	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	66.67	33.33	0.00	100.00	0.00	0.00	75.00	0.00	0.00	0.00	75.00	0.00	0.00	100.00	0.00	9.41	VERY LOW
KAKHE (KARADE)	28.21	12.82	0.00	0.00	100.00	0.00	0.00	0.00	0.00	60.00	20.00	20.00	0.00	80.00	0.00	40.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.20	VERY LOW

Note: 1) 5 to 10<sup>th</sup> 2) 12<sup>th</sup> 3) Graduate 4) Post Graduate 5) Farmer 6) Self Employment 7) Farm Worker 8) Job 9) Below 10,000 (10) 10,000 to 25,000 11) 25,000 to 50,000 (12) 50,000 to 1,00,000 (13) Above 1,00,000 (14) Pakka 15) RCC / Concrete 16) Bagayati 17) River 18) Well 19) Borewell 20) Canal 21) Project 22) Motors 23) Borewell 24) Diesel Pump 25) Other

## Author Profile



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