



A Socio Economic study of Rehabilitation Temghar Irrigation Project

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Abstract:

Agriculture is the primary occupation of nearly two thirds of the working population in the state. As a land resource management, various planning's and policies are applied to improve the agriculture and supplementary agro-Based occupations such as, dairy farming, poultry and fisheries. In such type of planning's, improvement and sustainable planning's of irrigation has playing important role. Hence the necessity of irrigation project is the basic need of the agriculture. On this background, there is great need to construct the major and minor irrigation project but on the other hand various critical problems are arises regarding the rehabilitation of the project affected families, so that the need of project is essential but with the help of land resource management the human resource should be properly developed.

Introduction:

The relationship between natural resources and development has always been recognized as an important element in all attempts for modernization and economic growth. Together with human resources, they comprise the important ingredients for concerted efforts of planned change. In many respects, the economic life of a nation revolves around the availability, use, and exploitation of natural resources, especially as expressed in the pursuit of concerted natural resources' policies. It has been widely accepted that natural resources include essentially all the elements of the natural environment needed for the production of certain basic commodities. What is important to notice is that the resource has real value only if the effort invested in its use is more than compensated for by returns to people. Thus, an important task in many developing nations is the determination of the availability of natural resources, the inventorying of potential uses, and the establishment of integrated long-range planning. Rational utilization of natural resources and proper management become key elements for utilizing science and technology in such a way as to accrue long-range benefits. Despite the large strides in increasing agricultural production in the last two decades, there is a continuous challenge for more food production. This

challenge is also recently accentuated by the apparent concern with the depletion and/or despoliation of natural resources. Such problems can be particularly acute in developing nations where both economic and manpower constraints compound difficulties in the process of development. in many developing countries where capital is scarce,

Study Area:

The area selected for the present study is a catchments area of the Temghar Lake Catchments from western Maharashtra. The main purpose of the Temghar irrigation project is to supply water for Pune city as well as for irrigation in Haveli, Daund, Indapur and Baramati tahsils in Pune district. The dam is located near village Temghar across river Mutha, which located between at 18° 38' 00"N to 18° 47' 00" N. latitude and 73° 27'00" to 73° 32' 00" E longitude, and is about 50 Km. to the west of Pune city. The project was undertaken in May 1989 and completed in February 1993. The full reservoir levels have been fixed at 706.5m and an area of 499 ha. is thus under submergence. Temghar, Lavarde, Vegre and Vede are the affected villages due to this irrigation project. The geology of the entire study area is covered by basaltic lava flow known as "Deccan Trap". The climate is tropical monsoon type; the annual average temperature is 24.6 C and annual average rainfall is 1395.14 mm. physiographical the area exhibits extremely rough terrain and high variation in slopes. The area is well drained with perennial streams. There is a considerable variation in soil properties. The Temghar lake catchments have mixed deciduous type of vegetation.

Objectives:

1. To review the socio economic factors in the project affected area
2. To find out the prospects for the development in affected villages

Socio-Economic status of the affected villages:

The socio-economic aspects of the Mulshi taluka in general and the project affected people in particular are studied in detail. These villages are namely: Temghar, Vegre, and Lawarde & Vede. (Table no. 1.1) Of these villages, Temghar and Vegre are fully affected and villages Lawarde and vede are partially affected. To understand the socio-economic profile of the affected villages, Under Temghar project; to infer the opinions of the villagers, their expectations, a socio- economic survey was carried out. As per official, this is the only project where almost 100% rehabilitation programmed has been completed.

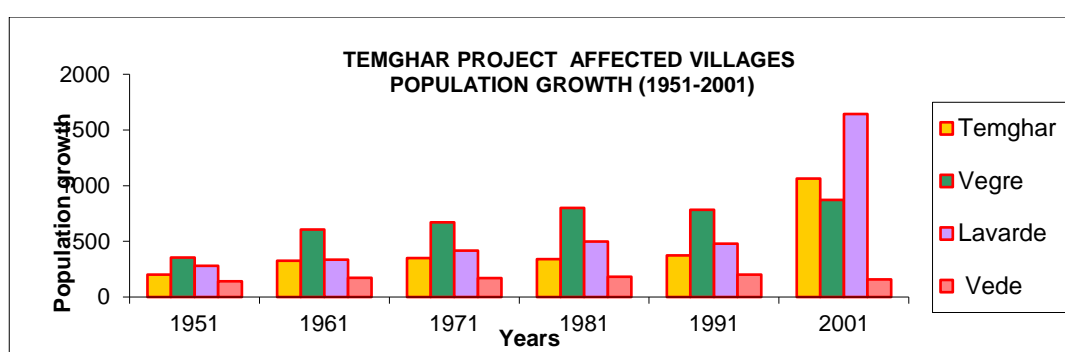
Table No. 1.1 Population Growth

Sr. No	Name of the Village	Population in the year					
		1951	1961	1971	1981	1991	2001-09
1	Temghar	201	325	349	339	373	407-434
2	Vegre	354	605	670	799	783	767-754

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3	Lavarde	280	335	416	498	478	458-442
4	Vede	140	171	169	181	200	219-234
Sr. No	Name of the Village	Decennial Growth					
		1951-61	1961-71	1971-81	1981-91	1991-2001	2001-
1	Temghar	61.69	7.5	-2.9	10	185.25	4.28
2	Vegre	70.9	10.7	19.3	-2.1	11.23	13.02
3	Lavarde	19.6	24.2	19.7	-4	243	13.07
4	Vede	22.1	-1.2	7.1	10.5	-21	5.27

(Source: Pune District census handbook: 1951-2001)



Population and its growth: -

Population in the study area (project affected villages) has been reviewed from 1951 to 2001 and dynamics of population has been tabulated in table 1.1. The Temghar irrigation project commenced in the year 2000. Since then the implementation of rehabilitation started in the year 2001. An attempt has been made here to outline the actual situation of the families, whose rehabilitation has been done. It is observed that, most of the families still retained in their own villages even after the implementation of the rehabilitation programme. Some of the families partially shifted and some of them have been completely shifted. This part of the chapter mainly focuses on socio-economic status of these populations who has still retained. This chapter mainly summaries the situation of these families as well as families which have been shifted. Review of population since 1951 has been done to highlight the changes in population over a period of 50 years. Families which has been still retained, these major characteristics in terms of the growth, population density, average size of the households, sex ratio, dependent population, religion, caste, literacy, shelter and cultural needs have been enumerated below;

Population composition and characteristics:- It is observed that, from the table 6.1; that, the villages under the study considerably show the changes in population dynamics. Village Temghar almost show around 185% growth in their population.

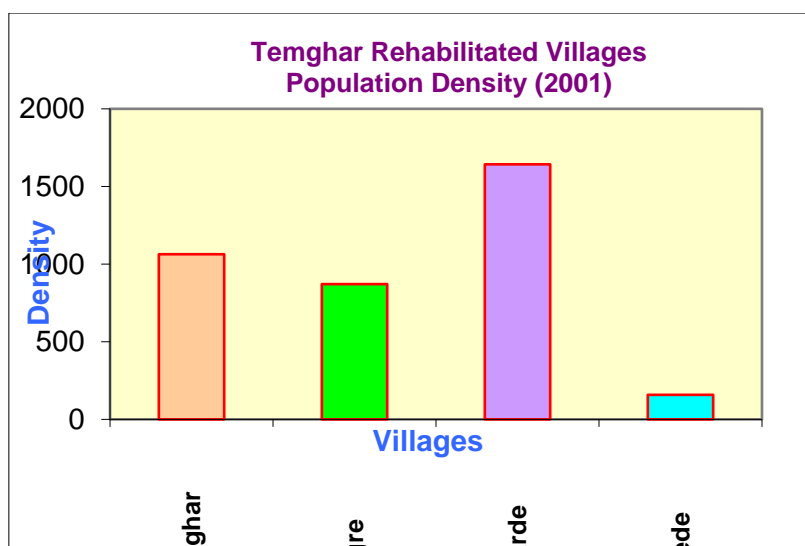
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Very prominent fiction in population has been notice since 1959 to 2009 large number of all the villages and dramatic decreased in the same observed since 1961 up to 1991. After 1991 sudden change in the population increased observed to be continuously increasing where village Lawarde show around 243% growth in 1991 – 2001 and after 2001 it is noticed to be 13.17% On the other hand village Vedhe shows dropped in population around -21% in the decade 1991 to 2001 and it is noticed for the coming decade to be 5.21% The possible reasons for this growth seems to linked with good transport network with Pune city and availability of irrigation facilities in these villages, which have (Data not partially it should be full) brought significant affects on population growth and dev of infrastructural facilities. Which does not directly comes in Lake Catchments where as on the other hand location of Vegre village being so interior and partially affected in the Said project show remarkable decrease in the population in case of village Vedhe which is being small village since 1951 does not show remarkable growth in the population up to 2001 and 2009 respectively. The past trends in the population of villages under study and the decennial growth observed is presented below; (Ref table 1.1)

Population density: -The average density of population in the village under study is much lower as compared to tahsil and apparently shows that adequate land is available per person for survival. Further only Temghar and Lavarde have forest land. Thus availability of agricultural land also appears to be adequate. However, the village Temghar and Vegre are located on the steep slopes of the valley and good quality agricultural land is available only close to river. Agriculture on the slopes is of poor grade where only millets can be grown. (Table no. 1.2)

Table No. 1.2 Population Density		
Name of the Village	Area	Population Density
	(HA.)	(No. of persons/Ha.) (2001)
Temghar	922.31	1064
Vegre	2268.51	871
Lavarde	731.28	1643
Vede	372.64	158
Total	4294.74	3736

(Source: Pune District census handbook: 1951-2001)



Villages in affected number of households and population: -

Village wise number of households and population has been collected from census 2001 and socio-economic survey 2009 using the data, the average size of the households has been estimated. (Table no. 1.3)

Table No.1.3 Average size of Household

Sr. no	Name of the village	Total Households							
		No. of Households		Population (2001)		Project aff. H.H.		Project aff. Population	
		2001	2009	2001	2009	2001	2009	2001	2009
1	Temghar	73	79	389	406	73	73	389	389
2	Vegre	171	176	885	1000	171	171	855	855
3	Lavarde	94	108	541	612	40	40	232	232
4	Vede	49	51	211	222	02	02	09	09
Total		387	414	1996	2340	286	286	1485	1485

(Source: Pune District census handbook: 1951-2001)

Sex ratio: - The ratio indicating the number of female's per1000 males has been derived using the census data presented in Table no. 1.4

Table No. 1.4 Sex ratio of village under study

Sr. No	Name of the village	Sex Ratio (000 Male) (2001)
1	Temghar	259
2	Vegre	1026
3	Lavarde	614
4	Vede	1107

(Source: Pune District census handbook: 2001)

The sex ratio appears to be well balanced. However, it should be noted that there is regular out migration of young male population to cities like Pune and Mumbai, leaving limited population of male members in the villages. The utility of the female members for survival of the family could also be the reason for adequate female population. In the agriculture and animal husbandry, the male members carry out the task of preparing agricultural fields, sowing and in case of animal husbandry sales of milk. The rest of the work of maintenance of agriculture is mainly done by rearing of animals and live stock. The percentage of children below 6 years of age with respect to the total population for the project affected villages is presented in table.

Dependent population: children below 6 years.

The percentage of children below 6 years in the project affected villages is higher than the Mulshi C. D. Block (Rural) and comparable the All India (Rural) average. This shows that the impact of birth control measures in the villages under study is very limited. Low level of literacy for both male and female adult and especially in females also could be the cause of high percentage of children. However, as the total population figure it is the deceptive because of heavy out migration of male population, the percentage of children in total population could be considered as normal.

Table No. 1.5 Dependent population below 6 years

Sr. No.	Name of the village	Children as % of Population	
		2001	2009
1	Temghar	16.1	17.2
2	Vegre	19.5	21.1
3	Lavarde	18.0	19.3
4	Vede	16.0	16.4
Total		69.6	74.0
Mulshi C. D. Block (Rural)		17.8	

(Source: Pune District census handbook: 2001)

Religion and castes: The main religion of the population in the project affected villages is Hindu followed by a mere percentage of Buddhists. No other religion has been reported during study period. The Maratha community forms around 85% of the total population followed by scheduled tribes and scheduled castes. Village wise population of S.C. and S.T. as observed from the census 2001.

Literacy: --The percentage of literates to the population (Excluding 0-6 age group) in each of the project affected villages is presented. In spite of the fact that primary level education is available in each project affected villages the percentage of literates, both male and female

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is very low. Village Vegre has a medium school but has lower literacy than Temghar. The primary school at Temghar, Lawarde and Vede are managed by one teacher only. As the teachers are taking necessary efforts to improve the attendance in the school, especially in the agricultural season, the students are deprived of the education and lose interest in it; therefore % of drop out is also considerable.

Dependent population on agriculture: - An attempt has been made in this analysis is to infer the % of dependent population on the agricultural activity; therefore following computations have been performed on the following lines.

- i) The percentage of main workers to the total population
- ii) The percentage of cultivators to the main workers
- iii) The percentage of agricultural laborers to the main workers
- iv) The percentage of marginal workers to the total population.

Table No. 1.7 Percentage of workers in major categories of economic activity in the project affected villages.

Table No. 1.7
Percentage of workers in major categories of economic activity in the project affected villages.

Sr. No.	Name of the village	Percentage of Workers			
		Agricultural Workers to total workers	Marginal Workers to Population	Total Workers to main populations	Total Population of workers
1	Temghar	73.1	2.1	2.1	77.30
2	Vegre	56.0	6.9	2.0	64.80
3	Lavarde	63.8	12.2	4.0	80.00
4	Vede	36.1	8.2	17.7	62.00
Total		229.00	29.40	25.80	284.20

(Source: Pune District census handbook: 2001)

It can be seen from the table no.1.7 that, village wise percentage of working in the project affected persons clearly indicates that the people engaged in agricultural activity (agricultural workers to working population) directly or indirectly accounts to 57.2% and total population of worker is around 77.50% including marginal workers. Village Vede accounts to 36.1% of agricultural workers to total workers and 73.1%, 63.8% and 56.0% of population of villages Temghar, Lavarde and Vegre respectively.

Thus, agriculture is the main economic activity in the villages under study and they are also involved and dependent on some of the fruit trees like Mango, Jamun, Jackfruit and

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other trees. They are satisfactory in living and activities. Similarly, dairying is also an activity which supports the livelihood. Because of adequate income from own agriculture, the percentage of persons mainly working as agricultural laborers-which includes landless and small farmers-is low, this is so noticed for the village Lawarde where most of the S.C. and S.T. families are landless and therefore they are laborers.

Number of households below poverty line.

The survey was carried out to know the village wise number of households below poverty line whose annual income is below Rs. 20000/- as present these details in the table along with their percentage with respect to the total households recorded in the year 2009. The village wise number of households below poverty line is recorded in the table no. 5.8 and it can be noticed that the majority of households. Poverty line belongs to s.c/s.t category. These households are mainly in labour category and dependent upon the employment which is made available at the village level. They are known as landless labourers.

Settlements /shelter:-In the study area, the pattern of settlements are scattered or decentralized. The main reason is non-availability of plain area and the terrain has been extremely undulating. The settlement although are scattered but houses are extremely clustered wherever they have been settled. More than 80% of the houses are of semi-pucca type. They have used stone/ brick for construction and tin sheet/ Mangalore tile for roofing. Around 5% houses are constructed with cement concrete while the rest are hamlets which are known as 'Kachha houses' in Maharashtra. During survey, it has been observed that, S.C. / S.T. people have these types of houses. There are 10 landless households in Temghar and Vegre respectively and 25 such households in Lavarde. Out of the 25 households in Lavarde, 15 are affected by the project.

References:

1. Census of India (2011) District Census Handbook, Director, Government printing and stationary, Maharashtra Government, Photozinco press, Pune.
2. Cernea.M.M.(1990).Poverty risks for population displacement in water resources development," Development Discussion Paper 355 (Cambridge,Massachusetts, Harvard Institute for Iternational Development).
3. Cernea.M.M.(1996)"Public Policy responses to Development induced population displacement," Economic and Political Weekly, vol.31,No.24,pp.1515-1523.
4. Cernea.M.M.(1996)" Development, displacement and Rehabilitation-Special Issue," Economic and Political Weekly, vol.31,No.(24),June 15.
5. Chattopadhyay Mahamaja and Shakuntala C. (1987) '*Landuse and Its Relation with Terrain Characteristics: A case Study in Wayanad Plateau, India*', Annals of the Association of Geographers India Vol. VII, No. 2, (December 1987) 1-12.

6. Chattopadhyay Srikumar and Salim M.B. (1985) *Morphological Classification of Land and Assessment of Its Suitability for Various Uses: A Case study on Bovalipuzha – Aralampuzha Drainage Basin*, Transactions of Indian Institute of Geographers. Vol. 7, No. 2, (July 1985) 105-112.
7. Colchester.Marcus (2000) Sharing Power: Dams, Indigenous Peoples and Ethnic Minorities. Report Prepared for the World Commission on Dam. Website: <http://www.dams.org>.
8. Coline Clark. (1970): “The Economics of Irrigation “ Pergamon press, New York.
9. Colson.E. (1971) The social consequences of Resettlement: The impact of Kariba Resettlement upon the Gwembe Tonga. Manchester University Press.
10. Daji J.A. revised by Kadam J.R. (1996) *A Textbook of Soil Science*, Media Promoters and Publishers Pvt. Ltd., Bombay.
11. Das T.H., Sarkar Dipak and Singh D.S. (1994) *Land Evaluation for Different Uses in Sikkim: A Case Study in Perhumid Subtropical Region*, Landscape Systems, Vol. 17, No. 2. 96-100.
12. Dent David and Young Anthony (1981) *Soil Survey and Land Evaluation*, George Allen and Unwin (Publishers) Ltd. London.
13. Gerrard A.J. (1981) *Soils and Landforms – An Integration of Geomorphology and Pedology*, George Allen and Unwin (Publishers) Ltd. 40, Museum Street, London.
14. D.Martin and S.K.Saha.National Bureau of soil survey and Land use planning, Regional planning centre, IARI Campus, New Delhi. Land evaluation by integrating remote sensing and GIS for cropping system analysis in a watershed
15. Dreze,J.M.Samson and S.Singh.(1997) The Dam and the Nation: Displacement and Resettlement in the Narmada Valley. Delhi and New Yark: Oxford University Press.
16. Driessen P.M.and Konijn N.T. (1992) Land use systems analysis.Wageningen: Wageningen Agricultural University , Department of Soil Science and Geology.
17. Economic and Political Weekly (1996) “Development, Displacement and Rehabilitation- Special Issue,” Vol.31 (24) June 15.
18. Fahim.h.m. (1981) Dams, People and Development: The Aswan high dam case, Oxford: Pergamon Press.
19. Fernandes.w.and Thukral (ed.) (1989) “Development, Displacement and Rehabilitation. Indian Social Institute, New Dehli.P.195.
20. Fernandes.w.and Vijay Paranjpye (ed.) “Rehabilitation Policy and Law in India. A Right to Livelihood. Indian Social Institute, New Dehli.Econet,Pune P.559.
21. Fox.J. and L.D.Brown (ed.) (1998) The Struggle for Accountability: The World Bank, NGO’s,and Grassroots Movement .Cambridge,MA and London:MIT Press.

22. Fisher. W.F.(ed.) (1995) Working Towards Sustainable Development. The Damming of the Narmada River in Western India. Armonk,NY:M.E.Sharpe.
23. Ganopadyay.T. (1983) Katkhadi, Studies on Rehabilitation of Submerging Villages, Centre for Social Studies,Surat.
24. Goldsmith.E andN.Hilyard. (1984). “The Social and Environmental Effects of Large Dams”. Vols.1 and 2 Cornwall, UK: Wadebridge Ecological Centre.
25. Government of India. (2004) National Policy on Resettlement and Rehabilitation for project affected families-2003. Gazette of India, Extraordinary Part I, Section I, No-46, 17 February 2004.
26. Gaikwad Sunil w. (2003). The significance of Geomorphic Analysis in the evaluation of land resources: A study of Khadakwasala lake catchment, A minor research project.
27. Horowitz.M.M.et.al. (1993) Resettlement at Manantali,Mali:Short-term success, Long term Problems. In: Cernea and Guggenheim.
28. -Dr. Sunil W.Gaikwad (2003) “The significance of geomorphic analysis in the evaluation of land resources, study of Khadakwasala Lake Catchment, Western Maharashtra.” The minor research project, UGC,Western Zone Pune.
29. Jadhav Ambadas S. (2001) Landform analysis around Kolhapur based on remote sensing techniques. The Deccan Geographers Vol.39 No 2(July December 2001).
30. J.R.Benites, F.Shaxson, M.Vieira-Land condition change, indicators for sustainable land resource management. Pp 1-10.
31. K.Anilkumar. (2009) “Dams and displacement: A Review. Centre for economic and social studies.Begumpet, Hyderabad 500016.
32. Land resource evaluation: 23 rd Course Professional Master, IAO 2003.
33. Detailed soil survey report: Government of Maharashtra, Department of agriculture.
34. Larson, W. E., G. R. Foster, R. R. Allmaras, and C. M. Smith. 1990. Research Issues in Soil Erosion/Productivity - Executive Summary. Published by University of Minnesota, St. Paul, Minnesota. 35 p.
35. Lokrajya, (1986) Rehabilitation of the Project Affected Persons. Lokrajya, 42(10):6-8 and 12.
36. Maharashtra Shasan Krishi Vibhag- Mrud Survekshan and Mrud Chachani. Krishi Bhavan, Shivajinagar, Pune-5.
37. Massee, T. W. 1990. Simulated erosion and fertilizer effects on winter wheat cropping
38. inter-mountain dryland area. Soil Sci. Soc. Amer. J. 54: 1720-1725.
39. Majot J. (ed.) (1997) Beyond Big Dams: A New Approach to Energy Sector and Watershed Planning.Berkely: International Rivers Network.