

CHAPTER 1

DAMS, DISPLACEMENT AND REHABILITATION

1. INTRODUCTION:

1. The present chapter deals with the concepts and review of literature on dams, displacement and rehabilitation.

2. DISPLACEMENT: Whenever some calamity, natural or man-made, takes place, people are displaced. The circumstances such as war, earthquake, floods, great fires, famines or the proposed mine, industry or dam give rise to the problem of rehabilitation. The rehabilitation process due to the construction of dam or some other developmental activities is totally different from the process of temporary exodus caused by the natural calamities. Whenever there are natural calamities, the displacement is a matter of necessity. Besides it is always for a short period of time. However, rehabilitation due to the factors like the construction of dams is permanent and deliberate. Thus, it requires a calculated, well thought-out and pre-planned programme. Therefore, "when a population is deliberately displaced and permanently relocated elsewhere for the sake of a developmental project, a planned policy is not only possible but absolutely imperative." ¹

3. DAM-CONSTRUCTION: The construction of dams is not a new phenomenon. A number of dams-small, medium and big-have been constructed for irrigational facilities as well as for hydro-electricity. However, while constructing a dam

the people inhabiting in the villages, where the new reservoir is being developed, have to be shifted. Thus, the rehabilitation of the people from the submerged areas becomes a necessity. In this situation, "the Government, no doubt, gives compensation in terms of land, site for home and other expenses. However, this economic compensation may not satisfactorily counter balance the social and psychological disturbances. The process of rehabilitation poses a problem not only to the Government, but it brings in its wake many stresses and strains to the affected people as well." 2.

4. DAMS AND ENVIRONMENT: The construction of dam brings about changes in the ecological setting of catchment as well as command areas. Generally the fertile land on the banks of river in the catchment area is lost under the water and the settlements are widely scattered. The command area receives water and the proportion of land under cultivation increases. The command area environment becomes full of irrigated crops like sugarcane. Thus the dam construction has its influence on the ecological setting of catchment as well as command areas.

It has often been made clear that, all water resources development has environmental implications. The benefits of a water scheme are purchased at the cost of certain natural assets defined as environmental impacts, which primarily affect the population and cause ecological changes. These implications of water development extend much beyond a river basin and to predict overall effects with any degree of certainty has not been found easy even by ecologists. The

engineers who have been traditionally in charge of development of water resources very recently started realizing the gravity of situation and general awareness in public has also crept in. It is now quite common to find that a new water resources project is unacceptable to a certain system of society, while another segment fights for its implementation. This conflict has provided further opportunity to consider the water resources projects from the point of view of their environmental impact.

The "social and environmental impacts of dam activities have been broadly divided into three categories of sub-systems namely physical, biological and human. The physical impact can be seen with the Aswan and Koyana Dams. In the case of Aswan dam which was primarily constructed for hydro-power is reported to have reduced fish population, lowered the fertility of Nile Valley and increased the salinity in middle and upper Egypt. The 1967 Koyana dam disaster drew attention of engineers to the possibility of inducing earthquakes by constructing large dams. The irrigation schemes have created favourable ecological environment for parasitic and water borne diseases like filariasis, malaria etc." 3

The above mentioned effects naturally have impact on human beings, but as a direct impact, displacement of local inhabitants due to irrigation projects have resulted in serious problems. It is very difficult to put in words the complex relationship between tribal population and their land. It is experienced that resettlement of tribalmen causes great

cultural shocks when they are thrust in an environment altogether different from their own.

On this background, " the large dams are today India's most controversial issues. Silent Valley Project has already been given up. Voluntary Groups are protesting against another half a dozen such projects. The key issue is not the nature but the people. Energy and water planners are stressing hydro-power and canal irrigation but have made no study of how many people will be displaced. Government officials argue that 'someone' has to suffer for progress: usually these 'someones' are tribals, the poorest and the most powerless." 4

5. DAMS, DISPLACEMENT AND REHABILITATION: The relationship between dams/development projects and displacement can be made clear from the following lines. "No dreams could be more painful for the family than to get uprooted from a place where it has lived for generations and to move to a place where he may be a total stranger. Nothing could be more irksome than being asked to switch over to an avocation which the family has not practised before. Yet the uprooting has to be done because the land occupied by the family is required for a development project, which holds promises for progress and prosperity for the country and the people in general. The families getting displaced thus make a sacrifice for the sake of community and the country as a whole. The oustees undergo hardship and distress and face an uncertain future so that others may live in happiness and be economically better off." 5

Due to the process of dam-construction the displacement occurs. The displaced villages have to be suitably rehabilitated. The people involved in this process are uprooted from their natural environment. On this background "the objectives of rehabilitation according to the Centre for Social Studies, Surat, should be:

- the people displaced should get an appropriate share in the fruits of development.
- they should be rehabilitated by creating new settlements within their own environment.
- removal of poverty should also be an objective of the rehabilitation policy and therefore some land to all eustees (even to the landless) should be given with assurance of employment." 6

This is the ideal picture of how the rehabilitation should take place. In practice, however, the scene is totally different.

6. KOYANA RIVER: Koyana river rises on the west side of Mahabaleshwar plateau in Satara District and it merges into the river Krishna at Karad. The Satara district Gazetteer describes the nature of the river Koyana as follows:

"The Koyana rises on the west side of Mahabaleshwar plateau near Elphinston point in 17.43' east longitude. Of its course of eighty miles within Satara limits, during the first forty it runs nearly southward and during the next forty it runs nearly eastward. During its forty miles to the south

the Koyana flows along a beautiful valley with the main line of the Sahyandries which runs parallel to the main line at an equal height. In Jaoli the river passes by Bamnoli and Tambi and receives the Solashi from the left about three miles north of Bamnoli and the Kandati from the right about two miles south of Bamnoli. At Helvak in Patan after a course of forty miles, the river suddenly turns eastward and after a further course of forty miles flowing by the town of Patan where it receives the Kera from the north and on receiving down stream the waters of Morna and Vang from the south, it falls into the Krishna at Karad." 7

On this background it is necessary to look at the Koyana Hydro-electric Project.

7. HISTORICAL BACKGROUND OF THE KOYANA HYDRO-ELECTRIC PROJECT:

As early as 1933 the Tata Electricity Group had proposed the construction of a dam on the Koyana river. The scheme, however, did not materialise, as there was opposition to the construction of Mulashi Dam.⁸ As the public opinion was against the construction of dams, Tatas gave up the idea of the construction of Koyana Dam, otherwise the dam would have been constructed at the same time, when the Mulashi and Walwan Dams were constructed by Tatas.

In the year 1938 the then Bombay State also thought of the construction of Koyana Dam. However, due to the Second World War, it was not possible to implement the same.

After independence the Koyana Parishad was organized by the Deccan Manufacturers Association and Late Shankararao Kirloskar was the president of the said Association. Late Bhausaheb Hire was the president of this Parishad. The Parishad was addressed, among others, by the late Karmveer Bhaurao Patil and Acharya Atre. The main demand was the need of electricity for industrialization and this could be met by the construction of dam. However, the proposal regarding the construction of the Koyana Dam was not included in the first five year plan of the Bombay State, inspite of the fact that the people had organized a mass movement for the construction of Koyana Dam.

The then Bombay State was headed by Mr. Morarji Desai as the Chief minister. Dr. Jivraj Mehta who was the Minister for construction had favoured "Ukai" Dam as against "Koyana" Dam. A report was also submitted against the Koyana Dam, however a copy of this report was acquired by Late P.V. Gadgil a journalist and he prepared a detailed report by answering all the points with the assistance of Late Nanasaheb Modak (retired engineer from Bombay Municipal Corporation). This report was then despatched to Late Chintamanrao Deshmukh and he was able to answer the criticism in the meeting of Planning Commission.

On this background the actual construction of the dam was started on 16th January 1954 and the first stage was completed in 1962. The work of the construction was carried out by S.S.J. (Shaha, Sholister, Joli).

8. KOYANA HYDRO-ELECTRIC PROJECT:

The narrow Koyana valley, extending over a distance of 140 km, is unique in-as-much as it has a near natural environment that is being degraded at an alarming rate because of human activity resulting from the construction of the Koyna Hydel Project. It singularly illustrates the hazards of developmental activities in the hill region of the Western Ghats. The Koyana Dam, 103 m in height was constructed in 1961 and has impounded 2796 McuM water, after submerging 12100 ha of once dense forest and fertile lands. The catchment area of Koyana dam has in recent years been badly degraded due to undesirable practices such as shifting cultivation. The region as a whole has been subjected to reservoir induced seismicity, enhancing landslides and causing problems in the construction of engineering structures and of roads. The former thick patches of very good forest, with excellent biological diversity, are being subjected to degradation because of human activity of 30 thousand and more inhabitants. In recent years many new settlements have come into being and there has been large scale encroachment on forest and revenue lands. The Koyana Valley is thus an area which deserves immediate attention if its natural ecosystem is to be preserved.

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B. KOYANA HYDRO-ELECTRIC PROJECT: The Koyana Hydro-electric project is situated on the river Koyana at Helvak in Patan Taluka. The Satara District Gazetteer describes the nature of this project as follows:

"The Koyana Hydro-Electric Project (a multi-purpose River Valley Project) situated in the zone of Sahyadri mountains in the Southern Maharashtra, is designed to harness the heavy precipitation of nearly 200 inches annual rainfall in the Koyana valley to economic generation of electric power by channelling the waters up to high-drop tunnel along the western slope. The salient features of the project, which was being executed in stages since 1956, are: (i) a rubble-concrete dam of about 207 feet high across the Koyana river at a point, nearly three miles upstream from Helvak in the district (on Karad-Chiplun road), storing 36,000 mc. ft. in first stage. (ii) diversion of the stored water to the west by underground tunnels and conduits through the surge shaft into the steel lined pressure shaft along and within the high western escarpment providing an almost vertical drop of 1,600 ft. under high pressure into the generation plant housed in underground halls approached by tunnel into the rocky face near the village Pophali of Chiplun taluka, and (iii) discharge of the water from the power house through tail race tunnel into the river Vashisthi which flows westward into Arabian Sea. The underground power-house is the first of its kind in Asia. The power-house system consists of three huge parallel caverns with an access road tunnel, a ventilation tunnel

(touching the caverns at the roof level) and cable tunnels to take outside the hill, the power generated and stepped up in the power-house system for onward transmission to Bombay-Poona area and for distribution in the Southern Maharashtra region." 9

The three stages of the project are as under:

"The first stage of the project is estimated to have costed Rs.38.28 crores. In this stage 4 machines each generating 60,000 KW power were installed. The stage II Project (including P.H. at the foot of the Dam), is estimated to have costed Rs.1,797.63 lakhs. The third stage development of the project consists of the exploitation of the Tail Race Potential." 10

9. KOYANA HYDRO-ELECTRIC PROJECT - I to IV Stages.

After construction of the Koyana Dam the storage of water was started on 17th June 1962.¹¹ The first two stages of the dam at Pophali were completed in 1967 and 560 MW electricity is being produced since then. There are four machines with 65 MW each and four Machines of 75 MW each. Thus total generation is 560 MW as a base station with 60% load factors. The third stage was based on the tail waters of the I and II stages which were left at Kolakewadi, and 320 MW electricity is being produced here. Thus on 6th July 1975 the three stages were completed which were producing 880 MW electricity.

Further recently the work of fourth stage at Navaja, which includes road tunnel, main tunnel and audit tunnel, has been started and the Central Government has sanctioned Rs.270.15 crores for this purpose. This stage is expected to be completed by 1994 and with the help of machines of 125 MW capacity, 750 MW electricity would be produced. Thus after completion of four stages the project will be producing 1630 MW electricity.

Speaking on the occasion of bhumipuja ceremony for the fourth stage Mr. S.B. Chavan the then Chief-Minister of Maharashtra affirmed that adequate compensation would be given to those affected by the project and the qualified people among them would be given jobs.

However, the actual situation indicates that the land was acquired in 1986. The people owning these lands were the ones who were rehabilitated here due to the construction of Koyana Dam. Thus these lands have been once again acquired for the fourth stage. The affected people have demanded that the land owners should be treated as project affected people and $2\frac{1}{2}$ times amount of compensation alongwith land value be allotted and at least two members of project affected family be employed on project work. These demands were not met untill January 1988.

The Maharashtra State Electricity Board gains Rs.185 crores profit every year and the Government has repaid the entire loan on 31st March 1978 which was used for construction and the establishment of centre.

The salient features of the Koyana dam are presented in Table 1.1

TABLE 1.1

KOYNA DAM : SALIENT FEATURES

1. RESERVOIR		2. DAM		3. INTAKE WORKS	
a. Catchment area.	891.78 Sq.Kms.	a. Maximum height above river bed.	85.35 m.	a. Intake Channels	Length 1227 m.
b. Capacity		b. Maximum height above foundation.	103.02 m.	b. Head Race Tunnel	Length 3748 m.
1. Gross	2796.5 mm ³	c. Length	807.72 m.	c. H.R.T.	6.4. Diameter 7.47 m.
2. Net	2662 mm ³	d. Top width	10.70 m to 14.80 m.	d. Diameter Circular	(D' Shaped) 170 m ³ /Sec.
3. From Spillway crest to top of the gates.	708 mm ³	e. Spillway gates.	6 Nos. Taintor 12.50 x 7.62 m.		
c. Water spread.	115.35 Sq.Kms.		3 Nos. Taintor 12.50 x 6.21 m.		
d. Project affected villages.	98 villages				
e. Project affected families.	9069 Nos.				

Koyna power
House Stage
I and II

Koyna power
House Stage
I and II

Alore power
House Stage
III

4. PRESSURE SHAFTS

- a. Number 4 Nos.
- b. Diameter 3.04 m. dia. at top and 2.59 m. dia. at bottom.
- c. Length of each Penstock. 616 m.

4 Nos.

4.115 m. dia. each.

192.00 m.

5. POWER HOUSE AND APPURTENANCES.

- a. Approach Tunnel 864 m. long 6.7 m. x 6.1 m.
- b. Ventilation Tunnel 36.80 m. long 2.4 m. x 2.7 m.
- c. Cable Tunnel 3 Nos. 357 m. 390 m. 457 m. long
- d. Tail Race Tunnel 2215 m. long 7.9 m. x 6.4 m.
- e. Peak discharge 164 m³/Sec.
- i. Tail Race Channel. --

780 m. long 7.00 m. x 6.24 m.

65 m. long 4.2 m.

2 Nos. each 78 m. long

4543 m. long 10.36 m. dia.

325 m³/Sec.

4790 m.

6. SWITCH YARD

45.72 m. x 295 m. 340 m. x 137 m.

7. POWER GENERATION

- a. Turbine Stage I

4 Nos. Pelton 1,10,000 HP (France)

4 Nos. Vertical Francis

- Stage II

4 Nos. Pelton 99180 HP (Swiss)

1,13,000 HP each (BHEL)

- b. Design Head:

Stage I 475 m.

Stage II 490 m.

109.70 m.

- c. Generator:

Stage I 4 Nos. 65 MW each

Stage II 4 Nos. 75 MW each

4 Nos. 80 MW each

60%

24%

- d. Load factor

e. Expenditure upto March 1979

Rs. 57.92 Crores
Rs. 8.23 Crores for strengthening of Koyana Dam, after December 1967.

TOTAL: Rs. 66.15 Crores

(Source: LOKRAJYA August 1, 1988, Vol. 44 No.7)

10. DAM-CONSTRUCTION IN INDIA: The construction of dams is not a new phenomenon in India. It has been an ongoing process ever since Britishers came to India. The construction of dams was undertaken in all the parts of the country. Its purpose, however, differed from place to place. In some parts it was undertaken with a view to control floods, in other parts the dams were constructed for the purpose of irrigation. In still other parts, these were constructed for the generation of electricity.

In building up of the dams for whatever reasons, however, only the positive factors were widely publicized. It was widely argued that these dams have brought about prosperity to the nation in general and into the command area in particular. But in doing so the people at the helm of affairs had conveniently closed down their eyes to the ill effects or to the side effects of the big dams that they were responsible for causing destruction of the jungles, annihilation of the flora and fauna, uprooting the people from their habitat, cultivable lands and homes. Until recently it was not recognised that these big dams were causing ecological imbalance, thereby giving rise to a host of other important national problems such as droughts.

Thus an attempt has been made in the present section to take a brief review of select literature on Dams, Displacement and Rehabilitation in India and abroad.

11. DISPLACEMENT AND REHABILITATION IN MAHARASHTRA: Tikekar¹² .
studied the problems of displaced persons affected by Kukadi Project in Maharashtra. He collected data from 150 persons consisting of agriculturists and non-agriculturists. The study concluded that, 1) larger the size of land holdings before acquisition, the smaller the rate of compensation, 2) acquisition changed the life styles of the respondents affecting the socio-economic status; and 3) people could not get sufficient compensation.

Further, the Tribal Research and Training Institute, Pune¹³ carried out the study of displaced tribals in Manikdoh and Wadaj Dams of Kukadi Irrigation Project. About 50 percent tribal families displaced and the submerged villages were studied. The study indicated that ignorance, illiteracy, fear of advanced people and attachment for original land and independent life style were the main obstacles in the rehabilitation of the displaced tribal families.

In the Marathwada region, Joshi¹⁴ has studied the socio-psychological aspects of rehabilitation problems of a village community situated in the reservoir belt of Jayakwadi (Godavari) Irrigation Project near Paithan in Aurangabad district. The area of submergence consisted of 118 villages of which Pimpalwadi was selected. The total number of families in the village were 598 out of which 150 families were selected for further study.

The study dealt with the changing social relations and the resulting stresses and strains involved in the rehabilitation of the people prior to and after rehabilitation. The changes have been brought about in the occupational pattern mainly because those cultivating families which have shifted to agricultural labour were owners of small holdings and naturally none of them found it profitable to continue as owner cultivators. The other reason was that the amount of compensation received by these families was spent rather indiscriminately and hence they were not able to purchase new lands. The cash compensation has contributed in spreading social evils prior to and after rehabilitation which in turn has contributed to stresses and strains among the family members.

Further, Sawant 15 has carried out an empirical study of rehabilitation problems of Dhoni Dam Irrigation project located in Upper Krishna Valley in Satara District of Maharashtra. The total population of the 29 affected villages was 17784 and the total area covered by them was 2049.8 ha. including the village site and agricultural land. Out of 29 villages, 14 were completely affected, whereas 15 others were partially affected by the project. The author has studied two villages namely, Vyahali and Chandavadi in some details. The author has observed two different economic pictures from catchment and command area of the project. (i) Unstable life of dam affected villagers, they are anxious about their future. Their family life is scattered over different new locations. Majority of small

and medium landholders are observed uneasy due to their deserted life; and (ii) The happy life of the villagers from command area as they are benefited by Dhoni canal irrigation facility. Irrigated land of the area is increased and it results in high yield from agriculture. They are stable in economy.

In Western Maharashtra, Karve and Nimbkar¹⁶ carried out a survey of the people displaced through the Koyana Dam. The sample was taken of two groups of villages - those which were moved out of the valley and those which settled on the upper contour of the valley and were not moved. The study covered 602 families. The information was obtained on different aspects like land, caste, family, education, occupation, housing compensation, amenities, religious and social life etc.

The study shows that the chief failure of rehabilitation lies in the lack of planning on the part of the State Government. The Government handed over huge cash amounts to people who had never before handled money and they were left to themselves. The result was that much of this money was spent on transportation and living expenses, instead of being utilized on constructing houses.

The study also indicates that there are two points about allotment of land. The land was allotted by the government only to those whose land was submerged under the lake. Secondly much of land that has been given to the displaced people is still uncultivable.

The study also shows that adapting to a new life style is especially difficult for ignorant and illiterate people. The adjustment could have been made easier by making the simplest amenities of life available to these people. The government has not been able to do this so far.

The government claims that it intended to give the dam affected people an equivalent in value for what they have lost and their aim was not the general betterment of these people. The study makes it clear that this is not a fair attitude. Even if supposing the people receive an equivalent of what they have lost in terms of material belongings, nobody can compensate them for the loss of their ancestral homes, friends, relatives, marriage connections etc.

The study suggests that the Directorate of Rehabilitation must be hold responsible for meticulously preplanning and rehabilitation of the displaced in future projects of this kind thereby avoiding some of the failures in terms of rehabilitation of the Koyana Dam affected population.

12. DAM AND PROJECT AFFECTED PEOPLE IN MAHARASHTRA: Apart from these studies carried out in Maharashtra, the details regarding dam and project affected people in Maharashtra are presented in Table 1.2

TABLE 1.2

DAM AND PROJECT AFFECTED PEOPLE IN MAHARASHTRA

1.	2.	3.	4.	5.	6.	7.	8.
	Konkan	Nasik	Pune	Nagpur	Amarawati	Aurangabad	Total
1) Number of Project affected people.	10054	21562	47280	12554	10208	23269	1,24,927
2) Land under submergence (hectare)	11664	51109	100251	34656	26956	45727	2,70,363
3) No. of families to be rehabilitated.	5176	19121	39566	8645	7970	21405	1,01,883
4) No. of Khatedars (title holders) for whom land is needed.	1445	19938	21000	6995	10312	12072	71,762
5) Land available for allotment.	3950	39445	40697	13578	19474	12873	1,31,017
6) Land actually allotted	2718	5818	17247	2108	1086	473	29,580
7) No. of dam and project affected for whom land is allotted.	322	5255	11480	33	395	1632	19,117

: 19 :

1.	2.	3.	4.	5.	6.	7.	8.
8) No. of dam and project affected for whom land is yet to be allotted.	2437	9629	24802	6755	5469	7931	57,023
9) No. of dam and project affected for whom plot for housing is needed.	12092	20186	30297	6210	8690	19268	96,743
10) No. of dam and project affected people whom plot for housing is allotted.	1516	17496	22419	3280	6377	14040	65,128
11) No. of dam and project affected for whom plot for housing is required.	10576	2690	7878	2930	2313	5228	31,615

(Source: Daily Shramik-Vichar, Pune' 2nd August, 1986)

The table clearly indicates that the number of dam and project affected people has crossed 1 lakh and nearly half ^{of} them are from Pune Zone alone. The similar situation is also prevalent in the case of number of families to be rehabilitated. The table also indicates that the Government has land in its possession but it has not been allotted to the dam and project affected people. The number of dam and project affected people for whom land and plot for housing is to be allotted is more than those who have received land and plot for housing. Thus it is quite clear that the rehabilitation work of the displaced has not been achieved even 50 percent target and the acquisition of land has been going on slowly.

In this connection, the then Chief-Minister Mr. S.B. Chavan asked the departments concerned to speed up the rehabilitation work of project affected families in the state. The government took a review of work done to rehabilitate project affected persons in the state. There are 1.12 lakh families in the state affected by 231 major, medium and minor projects, and so far the government has allotted 61,081 plots of land for rehabilitation of project affected persons.

Apart from the picture of all zones in Maharashtra, the details regarding dam affected villages in Pune Zone are presented in table 1.3

TABLE 1.3

DAM-AFFECTED VILLAGES IN PUNE ZONE

Name of the Dam	District	No. of villages affected	No. of families/people affected	Problems	Remarks
1.	2.	3.	4.	5.	6.
Radhanagari	Kolhapur	10	1000 families	Not considered as dam affected as it was constructed before 1952 and the facilities are not provided.	Land of forest and Revenue Department cultivated by farmers on yearly basis.
Durgawadi	Kolhapur	2	750 people	No civic facilities.	--
Chandoli	Kolhapur	48	NA	One of these villages Sonarli - 119 families left village and were homeless for sometime.	--
Kalamawadi	Kolhapur	9	1034 families/ 3984 people.	Opposition for acquiring land by the people in command area and therefore delay in rehabilitation.	186 families rehabilitated.

: 22 :

1.	2.	3.	4.	5.	6.
Yeralawadi	Satara	1	1500 people	Agricultural land 15-20 Km. away from residence.	--
Dhom	Satara	NA	NA	8/9 years have passed after migration, but no land available to 25 percent of dam affected families.	--
Chaskaman	Pune	29	13,000 people	Delay in rehabilitation	--

References: 1) Daily Aikya, Satara, 5th August 1985
 2) Daily Sakal, Kolhapur, 21st January 1986.
 3) Daily The Times of India, Bombay, 26th February, 1986.
 4) Daily Sakal, Kolhapur, 28th February 1986.
 5) Daily Sakal, Kolhapur 10th March, 1986.
 6) Daily Sakal, Kolhapur, 14th March, 1986.
 7) Daily Sakal, Kolhapur, 15th April, 1986.
 8) Daily Lokasatta, Bombay, 22nd April, 1986.
 9) Daily Sakal, Kolhapur, 31st March, 1987.

The Table clearly indicates that the dam affected people are facing different problems. Due to this background the people now-a-days are agitating against dam constructions. The data regarding agitations are presented in Table 1.4.

TABLE 1.4

AGITATIONS AGAINST DAMS IN MAHARASHTRA

Sr. No.	Name of the Dam/Demands	Date of Agitation	Type of Agitation	People involved	Leadership
1.	Opposition to construction of two proposed dams: Bhopalpatnam on Indravati and Ichampalli further down on Godawari.	9th April, 1984.	Morcha on Collectorate's Office, Gadachiroli.	5000 people	Baba Amate, (Save the Forest, Save Man Action Committee.)
2.	Opposition to Construction of dam on Seena River. "We loose land but we get no benefits."	21st July, 1985.	Morcha on Tahashildar's Office, Karmala (Dist: Solapur)	3000 people	--
3.	"First rehabilitation and then dam."	8th Nov. 1985.	Demonstrations at the dam site, Chasakaman, Dist: Pune.	Dam affected people from 27 villages.	--
4.	Land Allotment, Provision of civic facilities, Employment for children of dam affected people.	31st March, 1986.	Morcha on Collectorate's Office, Kolhapur.	1000 dam affected people from Tulashi, Lakhampur, Kasari, Patagaon and Kallamwadi dams.	Naganath Nayakwadi M.L.A.

Sr. No.	Name of the Dam/Demands	Date of Agitation	Type of Agitation	People involved	Leadership
5.	Land Allotment, Provision of civic facilities and others.	31st March, 1986	Morcha on Collectorate's Office, Sangli.	Dam affected people from Warana Project.	Smt. Nayakwadi
6.	"First Rehabilitation and then dam."	7th August, 1986.	Morcha on State Assembly, Bombay.	Thousands of dam and project affected people and workers.	Dr. Baba Adhav Secretary, Maharashtra State Dam and Project Affected Peasants, Conference, Pune.
7.	Developmental Rehabilitation, 100% land allotment, provision of civic facilities.	18th April, 1988.	Dharana in front of Collectorate's Office, Kolhapur.	6000 dam affected people from Kolhapur and Sangli Districts.	Com. Jivanarao Savant.

- References:
- 1) The Illustrated Weekly of India, 20-26 May, 1984.
 - 2) Daily Sakal, Kolhapur, 23rd July, 1985.
 - 3) Daily Lokasatta, Bombay, 8th November, 1985.
 - 4) Daily Sakal, Kolhapur, 1st April, 1986.
 - 5) Daily Pudhari, Kolhapur, 1st April, 1986
 - 6) Daily Shramik Vichar, Pune 8th August 1986.
 - 7) Daily Sakal, Kolhapur, 19th April, 1988.

The table clearly indicates that the agitations have been going on during all these years in Maharashtra against the dam construction. These agitations are in the form of Morchas, Dharanas and Demonstrations and the affected people are opposing the construction of dams and their primary demand is first rehabilitation and then Dam. Whenever the dam construction has been undertaken, the agitations are started for the developmental rehabilitation, land allotment, provision of civic facilities etc. Thus the dam/project affected people are showing their discontent through these agitations. In spite of these continued agitations on the part of displaced people on account of dam construction during all these years, it appears that sufficient attention has not been given to the problems of displaced people by the various government agencies. In fact, these dams are being constructed at the cost of the lives of the people being displaced. Then why is this tendency reflected ?

13. DISPLACEMENT AND REHABILITATION OUTSIDE MAHARASHTRA:

The Government of Gujarat commissioned the Centre for Social Studies, Surat ¹⁷ to carry out the Socio-Economic and Psychological Survey of the people to be displaced under the Narmada Dam Project.

The general report prepared by the Centre deals with the problems of rehabilitation in all the 19 submerging villages. According to the house-to-house survey carried out by the centre, there were in all 14214 people residing-

in 19 villages. Out of the total 2224 households, 1423 face submergence.

The study shows that under the provisions of the land Acquisition Act, the Government acquires land from the individual landowners. The total land required is not being acquired at a stroke but it is being acquired as and when required for a particular phase of work. This gives rise to differential rate of payment of compensation. Moreover, the act treats landowners as individuals and not as a group or village. This process itself stimulates an affected individual to think in terms of an individual rather than as a member of his ethnic group.

The study points out that there is no provision for compensating losses relative to employment, loss of ancestral habitations, social relations and psychological attachments. The problem is a complex human problem and merely providing various facilities at definite place cannot and will not lead to the solution of the problem of the rehabilitation needs of the oustees.

Again in Gujarat the Ukai Project has been studied from the point of view of ecological and economic costs.¹⁸ The study shows that the total land acquired under the Ukai Project was spread over two districts in Gujarat - Surat and Bharuch - and one in Maharashtra namely Dhulia. A total of 170 villages were affected due to the project.

Of the 170 villages affected by the reservoir, 100 were fully submerged while the remaining were partially submerged. A total of 16,080 families were affected by the project according to official estimates. Of these 14,148 families were rehabilitated in 17 groups of settlements, whereas the remaining 1932 families moved away on their own after accepting ad hoc grants. 138 villages were thus rehabilitated in the 17 groups of resettlements. It may also be noted that though Rs.7 Crores were earmarked for compensation, only Rs.1 Crore were actually deposited in Banks, the rest being squandered or used for day-to-day needs." 19

Further, when these villagers were rehabilitated "each landholder was given a maximum of four acres of land in areas which were cleared of forests for the purpose." 20 Earlier many persons had been cultivating land that was not in their name, or in several cases, large joint family holdings were in the names of the heads of the households only. In these cases only one title holder got a small plot of land. The cultivators were promised help in digging up wells, land improvement, bunding and removal of tree stumps and electricity. However, none of these promised measures were actually carried out resulting in a sense of betrayal.

In Gujarat, the Narmada Sagar ²¹ is a perfect example of the price that has got to be paid for 'prosperity'. Its

reservoir will spread over 910 Sq. Kms. and will submerge over 40,000 hectares of agricultural land. Some 1.2 lakh people in 326 villages will be displaced - compensation for them will amount to Rs.200 Crores. The biggest victims will be tribals. Large tribal populations of Phills, Bhiladas, Gonds, Korkus, Kirs and Bhuiyas live in the Narmada valley and the projects will completely destroy their habitat, their lifestyles - cultural annihilation - or make them even more dependent on the remaining forest: further ecological destruction.

The Karnataka ²² situation shows that those displaced holders of arecanut gardens on account of Sharavati valley hydro-electric project spent much of the award amount in an endless search for arecanut gardens but to reconcile themselves to a way of life most unsuited to their talents. Hardly 20 percent of them have been able to resettle themselves.

The Andhra Pradesh scene indicates that the Nagarjuna-sagar Project ²³ is the largest masonry structure in the World. Due to the construction of this dam, 57 villages including hamlets and thandas (ethnic settlements) were submerged affecting 5098 families and displacing over 25000 people in all.

Due to the construction of Sriramsagar dam across the river Godavari near Pochampad in Karimnagar district of Andhra Pradesh, 67 villages were affected. Due to the

construction of Lower Manair dam, 15 villages were affected. Altogether about 30,000 people were displaced in Nizamabad, Adilabad and Karimnagar District. Both Sriramasagar dam and Lower Manair dam form part of Pochampad project.

Again the Srisaillam Hydro-electric project is being constructed across the river Krishna near Srisaillam in Andhra Pradesh.²⁴ On account of this construction, a total of 100 villages will be affected. In addition village sites in 15 hamlet villages are also likely to be affected. Altogether 26,734 families or over one lakh of persons would be displaced by the project. Moreover 1.07 lakh acres of cultivable lands and 20728 houses would be submerged.

The study makes it clear that the originally displaced people were not benefitted under the policy of cash grants. The money that came into their hands was very meagre and they were not able to make proper arrangements for their accommodation and living with it. Actually most of the families are on the roads today.

In all the foregoing big projects in Andhra Pradesh namely Nagarjunsagar, Sriramsagar and Srisaillam Projects, only the property holders among the displaced people have been provided with some compensation in terms of lands and house plots. However, the landless poor who constitute almost 80 percent of the rural population were paid nothing. By submersion of their villages, they loose the base of their villages, they loose the base of their living itself.

And they don't get anything by way of compensation to support themselves.

Again it has been noted that "in the disbursement of compensation there appears to have been wide spread corruption. Large and rich farmers managed to receive compensation for both, house sites and land lost, in reasonably competitive terms, people with low economic and social status did not get fair compensation for the property lost." 25

The problems arising out of the submersion of villages and agricultural lands by river valley projects affect mostly the poorer sections of the population in villages.²⁶ This is one of the major findings in a report prepared by a fact finding team sponsored by the Lokayana Research Programme of the Centre For Study of Developing Societies, that surveyed 15 out of the 100 villages affected by the Srisaillam Dam in Andhra Pradesh.

81 percent of the displaced belonged to scheduled and backward castes and about 75 percent of the households were found to have been marginal farmers or agricultural labourers according to the Lokayan report. While the landowners received some compensation which they generally described as inadequate. Nothing was paid to the weaker sections who had been surviving for years by cultivating government owned waste lands.

In Himachal Pradesh, the construction for Pong dam ²⁷ on the Beas river in the Kangra area began in 1960 and by 1970-71 its waters had drowned all the land they were likely to drown about 75000 acres. The land belonging to about 30,000 families had been acquired, and in return the families were to get land and resettled in Rajasthan. Only 16,100 families were actually considered eligible to receive the promised 25 to 30 acres each in Rajasthan Canal Command area at concessional rates. For the land they had left behind, they were offered Rs.700 per acre of irrigated land and Rs.200 per acre of unirrigated land, but the villagers moved the court and the compensation was doubled.

Again both the old land and the new land had strings attached to it: Compensation was paid only to those who were lucky enough to file the necessary papers before the due date and surprisingly a large number of families were left out. As for the alternative land, only 6800 of the 16,100 eligible families actually took possession. They were again supposed to start its cultivation within six months - a stringent condition which 5600 families were not able to satisfy and finally only 1200 families or 4 percent of those displaced were actually resettled.

The Rengali dam project in Dhenkenal district of Orissa also shows the picture of unfulfilled promises. The project has displaced about 50,000 people from over 10,053 families of 116 villages, besides submerging agricultural land in

149 villages. According to Deogarh Bar Association President Prafulla Kumar Pradhan, "Thousands of people have been thrown out of their homes and villages in the name of development and then cheated in the name of compensation." 28

The Rihand dam on the border of Madhya Pradesh and Uttar Pradesh was inaugurated in 1964. Nehru promised that, Singrauli would become the "Switzerland of India." The dam submerged 144 villages. Three lakh people were forcibly displaced from their demands for comprehensive rehabilitation thwarted but a majority were not given even adequate cash compensation. In fact during the period of protests and negotiations were in progress the dam gates were ordered to be shut and scores of villages were flooded with water. "Nearly half of those displaced migrated out of the area. There is virtually no record of what became of them. The remaining population settled down on the banks of reservoir and on land in the neighbouring forest." 29

Apart from these specific studies, the general situation in India may be taken into consideration.

The following table gives the estimated number of displaced persons from ten selected projects which are either completed or planned. 30

TABLE 1.5
ESTIMATED NUMBER OF DISPLACED PERSONS
FROM SELECTED PROJECTS

Name of the Project		Estimated number of displaced people.
1)	Bhakra	30,000
2)	Ganga Valley	3,00,000
3)	Nagarjun Sagar	25,000
4)	Narmada Sagar	1,20,000
5)	Pochampad	30,000
6)	Polavaran	1,00,000
7)	Pong	80,000
8)	Srisaillam	1,00,000
9)	Tehri	70,000
10)	Ukai	55,000
TOTAL ..		9,10,000

These figures have been obtained either from the published newspaper reports or from the information made available by journalists or activists involved in rehabilitation efforts and in some cases may be on the higher side compared to official estimates. However, even with lower estimates of the numbers of displaced persons, there is no gainsaying, the fact that the magnitude of the problem of rehabilitation arising from irrigation development in India is by no means negligible.

Again unlike in industrialized nations, "in our country the hills and forests have not been uninhabited areas. An appreciable proportion of our people dwell in them - and these are the people mostly outside the modern sector. Most of them are tribals. Construction of dams, inundation of vast areas by the storage reservoirs and the accompanying multifarious range of activities require the evacuation of those living in the area. The number of such people who have been driven away from their homes and habitats for the purpose of dam building in India is truly enormous".³¹ The following table gives an idea of the magnitude of the problems.

TABLE 1.6

NUMBER OF PERSONS/VILLAGES AFFECTED BY SOME DAMS

Name of Dam	Number of persons/ villages affected.
1) Bhakra (Punjab)	10,000 persons
2) Pong (Himachal Pradesh)	80,000 persons
3) Ukai (Gujarat)	52,000 persons
4) Srisaillam (Andhra Pradesh)	1,00,000 persons
5) Tehri (Uttar Pradesh)	70,000 persons
6) Indravati (Orissa)	40,000 persons
7) Munnar (Kerala)	25,000 persons
8) Ichampalli (Andhra Pradesh)	2,00,000 persons
9) Kali (Karnataka)	47 villages
10) Bedti (Karnataka)	84 villages
11) Aghanasini (Karnataka)	130 villages
12) Polavaram (Andhra Pradesh)	250 villages
13) Saradar Sarovar (Gujarat)	19 villages

The total number of people who have lost or about to lose their homes and habitat due to construction of dams in India is staggering. The process has assumed the nature of a sustained war against our forest dwellers. One should remember that these are the most 'backward' and under-privileged sections of our society who are supposed to receive special care and attention under our constitution. One should also remember that whatever benefits that accrue from these projects do not reach these people.

Dogra notes that, "It has been the experience of lakhs of displaced persons all over India that their standard of living further deteriorated, their life became more difficult after the so called rehabilitation. Some of them have in fact been turned into refugees going from one place to another in search of reasonable opportunities of settlement." 32

14. DISPLACEMENT AND REHABILITATION OUTSIDE INDIA: The Aswan High Dam in Egypt displaced 1,20,000 people. The Egyptian Nubians uprooted, to make way for the dam, were resettled in an area not yet ready for farming. For months food subsidies were provided to people from starving.

Before the Aswan High Dam was built the Nile River deposited 100 million tons of sediment every year on nearly one million hectares of land in the Nile valley. Though low in nitrogen content, the sediment or silt was rich in other valuable elements.

The impact of the dam can be seen as after the construction of the dam, the silt is now trapped behind the high walls, and the nutrients, once provided free of charge by the rivers annual flooding, must be replaced at a price of \$ US 100 million the yearly cost of fertilizers for the region.

The international scene ³³ shows that one of the inevitable consequences of flooding an area is that those who previously lived there have to be resettled. In some cases, such resettlement has involved the movement of vast numbers of people. Ghana's Volta Dam, for example saw the evacuation of some 78,000 people from over 700 towns and villages: Lake Kainji in Nigeria displaced 42,000: the Aswan High Dam, 1,20,000: the Kariba dam 50,000: Turkey's Keban Dam 30,000: Thailand's Ubolratana Dam 30,000, while the Pa Mong Project in Vietnam uprooted 4,50,000 people.

There are two problems - lack of adequate compensation and resettlement on inferior lands - are the common features of the numerous resettlement schemes.

Goldsmith and Hilyard have showed how superdams shatter traditional cultures, uproot rural communities by the thousands, destroy precious forests and wildlife and help spread several debilitating waterborne diseases.

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XX