DEVELOPMENT AND DISPLACEMENT: A CASE STUDY OF RENGALI DAM IN ORISSA, INDIA

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Dedicated to my parents

DECLARATION

21st December 2002.

This is to declare that the thesis entitled '***Development and Displacement: A Case Study of Rengali Dam in Orissa, India***[9] submitted to the Department of Economics, University of Hyderabad for the award of the degree of Doctor of Philosophy in Economics, is the original work carried out by me under the supervision of ***Prof. D. Narasimha Reddy,*** Department of Economics, University of Hyderabad, and the same has not been submitted for any degree or diploma either in part or full to this university or any other university or institution.

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Introduction

1.0 Introduction

Economic and industrial development of a country involves large-scale deployment of resources. The greater the urge of development and the wider the lag to catch with it, the faster the pace of development, especially in the Third World. These countries are in a hurry and know very well that the process of resource mobilization and utilization for the development of backward regions entails heavy sacrifices in the interest of the nation at large. These enthusiastic governments are prepared for these sacrifices. But, what is usually glossed over in this process is the involuntary displacement of large number of people for the so-called national development (Mahapatra, 1991).

This displacement is not merely spatial; it invariably brings about the uprooting and dismemberment of social, moral and economic webs of life built over generations. What's more, though it is for the so-called national development, there is a huge difference between the class that benefits from the project and those who pay the price for it. In most cases, a very large number, even the majority, of those displaced, according to the existing law. They have been traditionally dependent on the common property resources or have survived by rendering services to the village community as a whole. As such, they are not entitled to any compensation according to the present law.

The problems that arise from the displacement and forced relocation of people due to various reasons have increasingly come to receive the attention of journalists, jurists, planners, social activists and other concerned individuals during the last few years (Mankodi, 1989). Considering the magnitude and seriousness of these problems and the length of the time that they have been in existence, it may be maintained that even now the attention they receive is as insufficient as it is a belated one.

1.1 Development and Displacement

The term 'development' envisages a battery of changes, changes for the betterment of the community. It involves the notion of progress, growth, upliftment and welfare of the

collective (Patnaik, 1996). This multifaceted term carries different meanings to different people. For economists, it is an increase in the growth rate and per capita income, for politicians, it is the acquisition of some symbols of modernization and progress, for administrators, it is the achievement of the targets and for social anthropologists, it is the enhancement of the quality of life, standard of living and satisfaction of basic needs. Friedmann defines 'Development' as "an innovative process leading to the structural transformation of social systems".

Many a country have marveled at the positive aspects of various development projects. Particularly, in the third world countries, the natural resource bases are tapped indiscriminately through construction of mega development projects in order to make up the shortfall in development and catch up with the developed countries of the World. There has been reckless extraction of natural resources by industrial and commercial concerns in collusion with techno bureaucratic apparatus of the state (Behera, 1993). So development seems to carry the continuing costs for many in the Third World (Horowitz, 1987). Projects undertaken to promote development have been a major cause of population displacement in many cases. Displacement for development is the process of physically uprooting large sections of people from their land, economy, resources and culture. Though this act, the resources, which had been the basis of the livelihood and sustenance of the uprooted communities, come to be monopolized by the ruling classes. The society thus combines modern relations of production with the problems of an underdeveloped society. The ideology of development is used to strengthen inequitable social relations in society, through acts like displacement. The magnitude and frequency of development related displacements makes involuntary resettlement a problem of worldwide relevance (Cernea, 1993). Because Involuntary Resettlement is a consequence of planned change generated by major development projects or programmes (Cernea, 1996). This situation may be defined as a situation in which,

i. A development intervention, such as construction of a dam, is taking place;

ii. People who are in the path of the intervention are either moved to a specific new site, or are allowed to move away by themselves, to places of their own preference;

iii. provision is made for the fact that they have to move, by the way of provision of compensation, new houses, new lands or, income opportunities;

iv. The move is effectively permanent, in the sense that the area where people used to live has been transformed by the intervention, and there is no going back. Displacement with resettlement is thus to be distinguished from displacement without resettlement, where people simply have to get out of the way and make provision for themselves, and which should perhaps rather be termed 'expulsion' (Wet, Chris De, 2001).

The displacement of people generally give rise to severe economic, social and environmental problems; production system are dismantled; productive assets and income sources are lost; people are relocated to environments where their productive skills may be less applicable and the competition for resources greater kin groups are dispersed; and cultural identity, traditional authority and the potential for mutual help are diminished (World Bank, 1990). It affects the entire communities. It evicts the literate, the weak and the strong, the skilled and the unskilled, the poor and the wealthy, the healthy and the crippled alike. It disrupts long established social networks and with them the social support systems through which the young, the old, the poor and other at-risk members of the community are sustained. Whether they are capable or not, they all must go (Patridge, 1989). The oustees being the ' victims' of development, through the loss of their livelihood and sustenance economy are forced to depend on the market economy for survival. Their entry in to direct market relations, without the necessary capital or skills, places them at a disadvantage from the very beginning. Displacement, thus usually leads to their pauperization and increased marginalization (Singh, 1997).

Unfortunately our experiences with the issue of development have been far from satisfactory. After independence, the Government of India introduced the five-year plans, which envisaged two major components: (i) poverty eradication programmes; (ii) installation of modern and heavy industries. But none of them have been successful in their mission. The poverty alleviation programmes were meant for the economically backward communities, the major chunk of which comprised Scheduled Tribes and Scheduled Castes. Though these programs had tribes and other backward communities as their target groups, they were never formulated in accordance with the needs of the individuals and cultural nuances of the group. As a consequence, these programmes were mostly rejected or at best evoked lukewarm response (Patnaik 1996)

The other component of the planning involved installation of heavy industries most of which were located in inaccessible tribal areas. These programmes were elitist in their approach catering to the needs of industrialists, rich farmers and educated middle and upper class. The needs of local populations and their problems were never considered in designing and implementing such projects. In other words, ideally speaking, these programmes had different target groups, which did not favor the Scheduled Tribes and other backward communities of the locality (Patnaik, 1996). Such projects (heavy industries and big dams) became the symbol of modernization and development primarily due to the advocacy they received from political leaders. Though these projects were envisaged for the welfare of the entire society, they affected the local population in an adverse way, unleashing devastating consequences for them. Installation of large development projects in tribal areas required a vast tract of the land to be colonized, thus leading to the displacement of the local populations, the logical entailment of which was rehabilitation of uprooted communities. The Government machinery never paid adequate attention to such issues, as a result of which the local communities suffered the most. Displacement of these people has affected their social structure. The so-called development (for a particular section of the society) brings out destruction for these communities virtually resulting in the breakdown of social network and creation of a cultural dysphoria.

1.2 Development Projects and Displacement

The types of development projects that most often cause displacement are those that are predicated on a major change in land and water use. Forced relocation is widely but mistakenly seen as a consequence of constructing irrigation of hydropower dams only. In fact, it also occurs in many other sectors. These are:

i. Dams for irrigation, hydro energy and drinking water that create lakes on previously inhabited areas.

ii. Transportation corridors-railways, highways, airports, transmission lines, irrigation canals and other that right of way.

ill New ports and towns.

iv. Urban infrastructure, such as sewerage systems, intracity roads and sub ways

v. New mines, particularly open pit mines

vi. Major industrial estates or zones that require considerable land

vii. Protection for forest reserves or national park.

Such projects are often of crucial importance for national or regional development. They are but one of a variety of situations in which national long term interests may conflict with the interests of groups and individuals who are immediately and adversely affected.

1.3 Issues in Displacement: A Global Overview

Displacement has become a sine-qua-non of modern developmental process worldwide. Displacement of people from their habitat occur almost in all countries due to the provision for infrastructure, public utilities, hydroelectric complexes, irrigation canals, exploration of minerals and etc. As estimated by the World Bank on an average 300 large dams that enter into construction every year displace 4 million people. The Urban development and transportation program that starts each year in developing countries is estimated to displace an additional 6 million people (World Bank, 1994). The Bank wide review of projects involving involuntary resettlement between 1986 to 1993 shows that 146 active projects with resettlement are spread among 39 countries (Table 1.1). About 60% of the Bank resettlement projects are in the East Asian and South Asian regions. Due to the scarcity of land due to high density of population, India and China together account for 74% of the people to be displaced under the current active portfolio.

Table 1.1: **Review** of Projects Involving Resettlement World wide

Region	**Total Bank Projects**		**Projects with Resettlement**			
	Number	%	**Number**	%	**People**	%
Africa	656	3.46	34	23.3	113,000	5.8
South Asia	277	14.6	29	**19.9**	1,024,000	52.1
East Asia	326	17.2	58	39.7	5,88,000	30.0
Europe/ Central Asia	120	6.3	5	3.4	27,000	1.4
Middle East/ Africa	178	9.4	7	4.8	32,000	1.6
Latin America	340	17.9	13	8.9	180,000	9.1
TOTAL	1897	100	146	100	1,963,000	100

Source: World Bank 1994.

Table 1.2 presents the distribution of projects on the basis of displacement. One can notice from the table that dams and reservoirs are the most frequent cause of displacement

and account for 63% of the people displaced. Roads, railways and other transportation industry rank second in displacing the people. Besides dams and highways, thermal power stations, irrigation canals, drains sewerage lines, wildlife sanctuaries were also some of the important causes of resettlement. Some of these projects though do not displace people physically, yet they acquire considerable land for its related activities. Millions who thus lose their lands for development purposes are simply ending up as " development refugees" **(Mathur, 1995).**

Table 1.2: Distribution of Projects by the Case of Displacement

Case of Displacement	Projects with Resettlement		People Displaced	
	Number	%	Number	%
Dams	**39**	26.6	1,233,000	62.8
Transportation	**36**	24.7	3,11,000	15.8
Water supply, Sewerage	**18**	12.3	59,000	3.0
Thermal (including mining)	**15**	10.3	94,000	4.8
Urban infrastructure	12	**8.2**	73,000	3.7
Irrigation, Canals	**7**	**4.8**	71,000	3.6
Environmental Protection	**5**	3.4	74,000	3.8
Industry	**4**	**2.7**	2,000	0.1
Forestry	**2**	1.4	45,000	2.3
Other	**8**	**5.5**	1,000	0
TOTAL	146	100	1,963,000	100

Source: World Bank 1994.

In the past, displacement as a consequence of development process did not hurt much. Usually the number of people involved was small Few people whose lands were taken away for construction of roads, schools, hospitals and such development works could some how manage to reestablish themselves in the larger society, which, more or less, remained undisturbed. This is no longer the case.

The 1980s have been called by some as the "decade of displacement". Whether caused by disasters that ranged from famines in Africa, wars in West Asia, to homelessness in America, the close of 20th century will be remembered for the large number of people evicted from their houses, farms and communities and forced to find a living elsewhere (Guggenheim and Cernea, 1993). Resettlement has, consequently gained (i) a Worldwide

concern over the adverse environmental and social costs of large infrastructure projects; and (ii) the well organized and well- publicized resistance movements against involuntary resettlement in many countries, e.g. the Regional Commission Against Large Dams (RCAB) in Brazil, The Narmada Bachao Andolan (Asthana, 1996) and Rengali Thaithan O Punarbasati Samiti of Orissa (Nath, 1998).

In almost every developing country, a great deal of emphasis has been placed on creating and strengthening infrastructure facilities. Displacement of people from their settlements when their lands are acquired for infrastructure projects is an inevitable process. No infrastructure projects have been completed without displacing people. If development is one side of the coin, displacement is the other side (Ramesh, 1998). Development efforts, while bringing about socio-economic transformation, have also left behind a trail of severe pains in most cases. Cernea (1993) estimates that between 1950 and 1990, around 18.5 million people have been displaced in India due to various developing projects Worldwide, the size of population evicted due to development projects has grown over the past few decades, which is given in Table 1.3

Table 1.3: Estimate of National Resettlement Caused by Development Project

Country	Time Period	People Displaced
China	1950-90	20,000,000
India	1950-90	18,500,000
Thailand	1963-77	1,30,000
Brazil	1980-90	4,00,000
Turkey	1980-90	3,00,000

Source: Guggenheim, 1993.

There are no agencies to furnish official statistics on a regular basis and this absence contributes to the lack of awareness of the seriousness and magnitude of the issues related to displacement. Prof. Cernea, a renowned social scientist, says," displacement by its very nature is a disruptive and a painful process. Economically and culturally... it creates a high risk of chronic impoverishment that typically occurs along one or several of the following dimensions: Landlessness, Homelessness, Joblessness, Marginalization, Food insecurity, Morbidity and Mortality and Social Disarticulation" (Cernea, 1996 b). Cernea points out that when displacement and relocation leave people worse off, the empirical evidence reveals

about the risks factors given above. They all contribute to a process of impoverishment. From the following examples one can easily understand how impoverishment occurs due to the above risk factors

(i) *Landlessness*: In the Kiambre Hydropower project in Kenya, the farmers' average landholdings after resettlement dropped from 13 to 6 hectares; their livestock was reduced by more than a third, yields per hectare decreased by 68% for maize and 75% for beans. In Indonesia, it was found that several years after cash compensation given to reservoir families, their land ownership was 47% lower and their income halved. Similar evidence was also found in Brazil.

(ii) *Joblessness:* In Madagascar Tana Plain project, private small enterprises being displaced by 1993 are entitled to no compensation, and lost their places of trade and customers. A study of the Argentina Paraguay Yacyreta project found a 17% unemployment rate in the resettler communities, which was much higher than the rates in the population as a whole. In the Churchill-Nelson Hydro project in Mantiobal, Canada, the economic activities of resettled indigenous people were curtailed drastically.

(iii) *Homelessness* A study of the Cameroon Douala Urban resettlement found that over 2000 displaced families were hindered in their efforts to set up new permanent houses; and less than 5% received loans to help to pay for assigned house-plots. At the Foum-Gleita irrigation project, Mauritania, only 200 out of the 881 displaced families reconstructed their housing, the rest living precariously in tents or under tarpaulins for two years.

(iv) *Marginalization:* In the Nepal Kulekhani Hydroelectric project, it was found that the majority of displaced people were worse off socially and economically, due to the low productivity of land and less diversified production. Marginalization also occurs through the loss of off-farm income sources. In Sri Lanka's Kotmale project, it has been assessed that marginalization occurred because opportunities for non-farm income generation were lost or limited through displacement, increasing the economic differentiation between the evacuees and hosts.

(v) *Morbidity:* At the Akosombo reservoir settlement in Ghana, the prevalence of schistosomiasis around the reservoir rose from 1.8% prior to settlement to 75% among lakeside dwellers, and close to 100% among their children, within a few years after the impoundment. An outbreak of gastro-entries occurred along the Victoria dam reservoir in Sri

Lanka. At Nam-Pong, a dam in Thailand, monitoring confirmed that local rates of morbidity-from liver fluke and hookworm infection- were higher than provincial levels as a result of deteriorated living conditions and poor practices of waste disposal.

(vi) *Food Insecurity:* At the Foum-Gleita Irrigation Project, Mauritania, when multiple cropping and husbandry was replaced with paddy-rice monocropping, diet and cash crop income deteriorated. At the Victoria Dam Project in Sri Lanka, approximately 55% of the resettled families were still receiving food stamps after a long period, compared to a much lower rate in the country.

(vii) *Loss of Access to Common Property:* World Bank (1994a) has found that only the Lesotho Highlands Water project includes explicit provisions for compensating this loss, but even here, the project's management unit is lagging behind in the implementation of the rural development programs for resettlers.

(viii) *Social disarticulation:* The disintegration of social support networks has far-reaching consequences. It compounds individual losses with a loss of social capital; dismantled patterns of social organization are hard to rebuild. Such loss is higher in projects that relocate people in a dispersed manner than in-groups and social units.

Taken together, these eight characteristics of impoverishment provide a warning model that consolidates the lessons of many real processes and clearly points to what must be avoided.

Discussing experiences with displacement, a study in Thailand concluded: " most evacuees have become atleast temporarily and in many cases permanently worse off as a result, both economically and socially (Lightfood, 1978). Another study, also in Thailand, found that people who moved to new sites have remained disadvantaged and poor, unable to regain the income level they had before relocation (Dunning, 1979). Hence no trauma can be more painful for a family than to get uprooted from a place where it has lived for generations and to move to a place where it may be a total stranger. And nothing could be more irksome than being asked to switch over to an avocation, which the family has not practiced before. The trauma is greater when displacement is attended by lack of information, uncertainty, long waiting, very little compensation, social dislocation and the cultural shock that accompanies any diaspora when cohesive rural and particularly tribal communities are scattered and resettled away from their kinship and linguistic group (Varghese, 1990).

One unfortunate outcome is the feeling of alienation, helplessness and powerlessness that overtakes the displaced. This stems from the way in which the people are uprooted from homes and occupations and brought to question their own values and behavior, and the authority of their leaders. Such feelings persist for a long time. In some cases, the persistence of such feelings has been observed 30 years after resettlement operations were carried out, **as** in a resettlement project in Maxico (Patridge, 1989).

However, the effects of displacement are more disastrous in the case of the tribal people. Among the tribal people, the concept of individual land ownership is largely unknown. The areas where the tribal people live are believed by them to be the common property, of the entire community. Moreover, since the rights over the resources of their habitat on which they sub served are customary rather than legal, the tribal people are often denied compensation when their lands are acquired by development agencies (Viegas, 1991). They happen to be amongst the most underprivileged and, even after decades of development, still remain outside the pale of any farm of visible change in their condition. One researcher recently described the effects of evacuation of indigenous peoples in Malaysia as follows: For any particularly those from isolated tribal cultures- the move proves disastrous. With their land, their sacred shrines, the historic monuments, their homes and the villages drowned beneath the reservoirs, their whole life falls apart. Suffice it to say that many displaced tribals simply drift towards the nearest city, there to join the burgeoning number of slum dwellers. While disruption due to displacement is community-wide, it is the poor who bear its brunt most all (the tribal people, women and other marginalised group). The dislocation to the life of the poor is total stripped off their possessions, they are compelled to move in search of livelihood to unknown destinations. On arrival in new towns and cities where they usually gravitate, they soon discover that for unskilled jobs, the ques ahead of them are distressingly long (Patridge, 1989).

1.4 Large Dams[1] and Displacement

River basins are renowned as the cradles of civilization and cultural heritage. Ancient and modern communities alike have depended on rivers for their livelihood, commerce, habitat and sustenance of ecological functions they provide. Throughout the history

[1] Dams above 15 meters are deemed to be large dams (CWC, 1994, New Delhi).

alterations to rivers-natural or human generated- have affected riverine communities in one way or another. Historical records suggest that the use of dams for irrigation and water supply became more widespread about a thousand years from now.

1.4.1 Large Dams: An Overview

The last century saw a rapid increase in large dam building. By 1949 about 5000 large dams had been constructed worldwide, three-quarters of them in industrialized countries. By the end of 20th century, there were over 45,000 large dams in over 140 countries (INCOLD, 1998), which is presented in Table 1.4

Table 1.4: Large Dams in the World

Sl No	Year	Number of Dams
1	Before 1900	630
2	1900s	353
3	1910s	601
4	1920s	809
5	1930s	964
6	1940s	913
7	1950s	2735
8	1960s	4788
9	1970s	5418
10	1980s	4431
11	After 1990	2069

*Source: INCOLD, 1998, excluding over **90%** of large dams **in China***

The period of economic growth following the Second World War saw a phenomenal rise in global dam construction rate, lasting well into the 1970s and 1980s. At its peak, nearly 5000 large dams were built worldwide in the period from 1970 and 1975. The decline in the pace of dam construction over the past two decades has been equally dramatic, especially in North America and Europe where most technically attractive sites are already developed. The following table shows the commissioning of large dams globally by decade in the 20th century.

The top five dam-building countries account for nearly 80% of all large dams worldwide. China alone has built around 22,000 large dams, or close to half the World's total number. Before 1949 it had only 22 large dams. Other countries among the top five dam building nations include the United States with over 6390 large dams; India with over 4000; and Spain and Japan with between 1000 and 1200 large dams each. Table 1.5 shows the top five countries by number of large dams.

Table 1.5: Top Five Countries by Number of Large Dams

Country	ICOLD World Register of Dams 1998	Other Sources	% to total dams
1. China	1855	22000	46.2
2. US	6375	6575	13.8
3. India	4011	4291	9.0
4. Japan	1077	2675	5.6
5. Spain	1187	1196	2.5
6. Others	10918	10918	22.91
Total	25423	47655	100.0

1.4.2 Large Dams and Displacement: Global Overview

Many development interventions to transform natural resources, particularly large-scale infrastructure projects involve some form of displacement of people from their livelihoods and homes. Large dams are perhaps unique amongst such projects in the sense that they can have widespread and far ranging eco system impacts due to the blocking of a river. The result is a series of terrestrial, aquatic and reparian impacts that not only affect eco systems and biodiversity but also have serious consequences for people who live both near and far from the dam site. A large, multi-functional resource base like a river and its surroundings is characterized by a complex web of diverse, interconnected, implicit and explicit functional roles, dependencies and interactions. Consequently the social and cultural implications of putting a dam into such a landscape are spatially significant, locally disruptive, lasting and often irreversible.

Large dams have significantly altered many of the World's river basins, with disruptive, lasting and usually involuntary, impacts on the livelihoods and socio-cultural

foundations of millions of people living in these regions. The impacts of dam construction on the people and the livelihood of the people below dams have been particularly devastating in Asia, Africa and Latin America, where existing river systems supported local economies and cultural way of life of a large population containing diverse communities.

Displacement is defined here as a reference to both ' physical displacement' and 'livelihood' displacement (or deprivation). In the narrow sense displacement results in the physical displacement of people living in the reservoir or project area. This occurs not only from the inundation of reservoirs but from the installation of project facilities and associated infrastructure. The WCD Knowledge Base records that all too often this physical displacement is involuntary and involves coercion and force- in a few cases even killing.

However, the inundation of land and alteration of riverine ecosystem- whether upstream or downstream- also affects the resources available for land and riverine based productive activities. In the case of communities dependent on land and the natural resource bases, this often results in the loss of access to traditional means of livelihood, including agricultural production, fishing, grazing ground for livestock, gathering of fuel wood and collection of forest products, to name a few. Not only does this disrupt local economies, it effectively displaces people- in a wider sense- from access to a series of natural resource and environmental inputs their livelihoods. This form of livelihood displacement deprives people of their means of production and dislocates them from their existing socio-cultural milieu. The term ' affected' thus applies to people facing either type of displacement.

The WCD Knowledge Base confirms that there are many dams that have caused physical displacement- and indeed that large dam construction has physically displaced tens of millions of people worldwide in the last half century The overall global level of physical displacement could range from 40 to 80 million. According to official statistics, dams have displaced 10.2 million people in China between 1950 and 1990 (WCD Report, 2000). Independent source estimate that the actual number of dam- displaced people in China is much higher than the official figure, with 10 million displaced in the Yangtze Valley alone. The level of displacement has increased substantially after 1990 with the construction of projects such as Three Gorges in China. Among the projects involving displacement funded by the World Bank, large dams account for 63% of displacement. .

At planning stage, the numbers of both directly and indirectly affected people have frequently been under-estimated. In all the WCD Case Studies, the initial assessments of the projects failed to account for all the affected people. The level of under- enumeration ranges from 2000 to 40000 people. Examples from large dam projects in Africa include the tri-national Ruzizi Hydroelectric Project involving Zaire, Rwanda, and Burundi, the Funtua dam in Nigeria, and the Kiambere reservoir on the Tana River in Kenya, with under enumeration ranging from 1000 to 15,000 people. Similar observations emerge from other regions. Among the projects funded by the World Bank, the actual number of people to be resettled was 47% higher than the estimate made at the time of appraisal.

Surveys of the categories of people to be affected by dams have generally been inadequate. The scope of the definition of the affected has been limited, and totality of affected groups has not always been determined. The principal categories excluded from assessments include the landless, downstream communities and indigenous people. The WCD Case Studies show that communities situated downstream from the dam, those without land or legal title, indigenous people and those affected by infrastructure projects were not considered as affected people at the time of design.

Among those assessed, compensation has usually gone only to those in possession of legal titles, leaving out a large number of people- often the poorest- who depend on common resources such as forests and grazing grounds for subsistence. In the WCD Case Studies on Grand Coulee, Tarbela, Aslantas and Tucurui, only those affected people with legal title were compensated for loss of their land and livelihood. With such criteria for eligibility, indigenous people and ethnic minorities suffer disproportionately as they may lack citizenship, tenancy, or land tenure papers. One fifth of those physically displaced by the Kao Laem dam in Thailand were from the Karen ethnic group. Because they lacked legal residence permits, they were considered ineligible for resettlement.

While not all-large dams have involved physical displacement, it would be much rarer to find a river whose natural function is not used or appreciated by people in some fashion. And in many cases in densely populated tropics large dams lead to both physical and livelihood displacement. For example, the Urra 1 dam on the Upper Sinu River in Colombia

displaced 12,000 people but also affected severely more than 60,000 fishermen in the lower Sinu, where the fish population diminished drastically as a result of the dam construction.

Among physically displaced people officially recognized as ' project affected', not all are given assistance to resettle in new locations. The Yacyreta project in Argentina and Paraguay is a classic illustration of delayed and incomplete resettlement. It took the project developers 20 years to resettle just over 30% of the displaced people, leaving the remainder to be resettled in less than two years before the reservoir would be filled.

The WCD Case Study on Tarbela reports that of the 96,000 physically displaced people enumerated for the Tarbela dam in Pakistan, around 64,000 people qualified for replacement agricultural land in Punjab and Sindh provinces. Of these, some 2000 families or approximately 20000 people did not receive land when the amount of land provided by Sindh fell short of that promised. In the case of Aslantas, only 75 of an estimated 1000 displaced families asked for resettlement, with the remainder choosing cash compensation. In the case of Tucurui, of the indigenous groups physically displaced only the Parakana people were resettled; the other indigenous group that lost land to the dam was not considered for resettlement benefits.

Further, there have been many cases illustrating inadequate compensation, unsuitable mitigation, and lack of recourse, including the Kao Laem in Thailand. Delays in compensation provisions, title to land holdings and houses, and provision of basic services have occurred. Case illustrating inordinate delays- from 5 to 15 years- includes the Aswan High dam in Egypt, the Nangbeto in Togo, the Akosombo in Ghana, the Ita in Brazil and the Bhumibol in Thailand.

Resettlement sites are often selected without reference to the availability of livelihood opportunities or the preferences of displaced persons themselves. They have often been forced to resettle in resource depleted and environmentally degraded areas around the reservoir. Such land rapidly lost their capacity to support the resettled population. Example is the Liu-Yan-Ba project on the Yellow River in China, which displaced 40,000 people from fertile valleys and relocated them in uplands. Erosion and loss of fertility ultimately led to the abandonment of painstakingly reclaimed farmland led to extreme poverty. Similar experience

have been recorded from Hoa Binh in Vietnam, Sirindhorn in Thailand, Batang Ai in Sarawak Malaysia, and other rice-growing East Asian countries with large rural populations.

The loss of cultivable land and inability to gain good quality replacement land has significantly affected indigenous people and peasant farmers. Examples are the people displaced by the Miguel Aleman and Cerro de Orro dams in Mexico; the Kuna and Embera people in Panama; the Parakana, Asurini, and Gavio da Montanha people in Brazil; and the Tonga in Zambia and Zimbabwe.

The replacement of agricultural land, basic services and infrastructure at resettlement sites has often failed to materialize, was inadequate, or was delayed for many years. Absence of livelihood opportunity forces affected people to abandon resettlement sites and migrate. Examples include Tarbela, where allotted agricultural land was poor quality and basic services such as electricity, health facilities and schools were not provided. Electricity was only provided after 25 years. Similar experiences are recorded from resettlement sites at Tucurui, Sirindhorn dam in Thailand, and Akosombo in Ghana

Resettlement programs have predominantly focused on the process of physical relocation rather than on economic and social development of the displaced and other negatively affected people. Lack of accountability on the part of the state for promised entitlements has led to poor implementation of resettlement measures. Finally, long delays in the onset of resettlement programs are common and lead to greater uncertainty and psychological and social anxiety for those awaiting resettlement. These and other problems have severely eroded the effectiveness of resettlement and rehabilitation programs in creating development opportunities for the resettled and have height ended the risk of impoverishment for those being resettled.

1.4.3 Large Dams and Displacement: The Indian Experience

After launching of planned development programs beginning with 1950-51, the Indian Economy witnessed undertaking of a large number of projects which may be grouped into (i) irrigation and power projects (ii) industries projects (iii) mining projects (iv) forest and wildlife projects and etc. Construction of dams in India is not a new phenomenon. In a developing country like India, where $3/4^{th}$ of total population are depending on agriculture, the execution of river valley projects is an important element of growth strategy. To

accelerate the pace of development of industries and growth of agriculture efforts were made in the successive plan periods to divert large amount of budget for the development of water resources- major, medium and minor irrigation projects. The growth of agriculture was the need of the hour as to meet the increasing requirement of food for teeming million of people and moreover irrigated agriculture could create additional employment opportunities. India is situated in the monsoon zone and except in the northern states, which gets water from snow-fed rivers also, all other parts of the country have to depend on the monsoon rains for supply of water. This supply is available for two to three months during July-September. Unless this supply is stored in artificially created reservoirs, it cannot be available for use during the whole year. Further, India uses only a tenth of rainfall it receives annually. In view of this situation, the implementation of river valley projects, India occupies an added significance.

India has the dubious distinction of having largest number of river valley projects in the world (Reddy, 1989). The 1578 major dams had been built by 1985 at a cost of Rs 95,026 crore (Bana, 1987). These projects have become an unquestioned symbol of national development as these are usually located in backward, tribal and elevated areas full of natural resources, where majority of our indigenous tribal population have been living for centuries. Many people living in these areas look at these development projects with high hopes. The dams do have the potentials of solving most of our economic problems. Eradication of food shortages, floods, famines, unemployment, urban water shortages and of course the power shortages are all possible with the help of execution of such dams.

These projects have created several benefits like providing additional irrigation facilities, increased crop production, power generation, increased availability of water supply for domestic as well as industrial purposes, checking floods, generating pissiculture, inducing additional employment opportunities, infrastructural development etc. Thus, the major objective of implementing the river valley projects is directed for raising level of economic condition of local people through increased production and inducing other facilities. However, on the other hand, huge displacement, injudicious use of finances, submergence of vast tracts of arable and forests, wide spread of water logging, soil erosion, siltation are some of the worst damages caused by these projects.

The debate on how many people have or are being displaced by dams has raged for many years. Though no definitive figures exist, some of the estimates that have become public include those of Fernandes, Saxena and Roy. Himanshu Thakkar, in his paper on displacement for the WCD (Thakkar, 2000), says, "Displacement due to dams in India has been variously estimated". Guggenheim and Cernea (1993) place the number of displaced at 18.5 million, while Kothari (1996) says it as 20 million people and attribute around half of this to dam projects. Kothari claims that if those displaced but not officially recognized are included then the figure is as high as 40 million. Paranjpye (1990) provides another such independent estimate and claims that 21 million have been displaced by dam projects between 1951 and 1985. Singh (1997) places total development- induced displacement at 100 million and that because of large dams between 30-50 million for the same period. These differences are at least partially due to the lack of consensus on defining the 'displaced' (Garikipati, 2000). There are various other problems with such estimate and therefore there must be taken with more than a mere pinch of salt. A conservative estimate of the population displacement due to various development projects is given in Table 1.6.

Table 1.6: Conservative Estimate of Displacement **in India**

Type of Project	People Displaced	People Rehabilitated	Backlog
Coal & other mines	17,40,000	4,40,000	13,00,000
Dams	1,00,00,000	30,00,000	70,00,000
Industries	20,00,000	6,50,000	13,50,000
Sanctuaries & Parks	6,00,000	2,00,000	4,00,000
Others	20,00,000	6,50,000	13,50,000
Total	1,63,40,000	49,40,000	**1,14,00,000**

Source: Das, Fernandes and Rao, 1988.

In the following section studies related to various aspects of displacement, rehabilitation and the problems associated with these problems in Indian context are discussed:

Alvares and Billorey (1987) have pointed out that the distribution of a part of the village pasture as land compensation to those displaced by Sardar- Sarovar project led to a clash between the oustees and local population. In fact this land was of inferior quality from

the productivity point of view and hence the original settlers had used the land as pasture ground for many years. But in case of Panchet dam, which submerged 21 villages, displacing 1,400 households (1,200 landholding + 200 landless), the government did not pass any notice regarding land acquisition to the people. The Centre for Science and Environment (1985) in its study has explained that the village leaders and local elite took this opportunity and got the benefit.

In another study brought out by Indian Express (1987), it has been reported that the displaced villagers in one of the villages in Maharashtra were given uncultivable land as compensation. As a result, they had to incur an expenditure of Rs.2500 to Rs.3700 per hectare on developing the land itself. This was almost equivalent to what the oustees have received as the rate of compensation for acquiring their lands. The studies of Barnbas (1985), Alvares and Billorey (1988), Bana (1988), and Singh (1988) have mentioned the absence of any provision of alternative land or jobs to those who are cultivating forest areas and agricultural lands without legal titles. Such cultivating families are not entitled for compensation and thus left to unbearable misery. Viegas and Menon (1985), Rao (1986) have also cited instances of displaced persons left without rehabilitation under various projects in Bihar, West Bengal, Orissa and Madhya Pradesh.

Thukral (1988), while analyzing the various aspects of rehabilitation measures under Narmada Project has stated that this project is one of many glaring examples of what happens to evict people. The displaced people are not aware of the nature of displacement and the extent of land to be submerged. The number of people affected is under estimated and incorrect information are encouraged in order to ensure that the projects meet the various criteria for approval.

Sharma (1986) has pointed out that due to lack of appropriate rehabilitation measures, the persons displaced by major dams in India unable to meet their requirements. This has resulted in their migration to nearby cities. Lack of information about displacement and rehabilitation is a common feature. A scrutiny of the above studies clearly indicates the inadequate rehabilitation measures under taken by various projects.

Payment of cash compensation to the affected people is one of the important aspects of rehabilitation. Studies such as Shatrugna (1981), Gandhy and Ajith Kumar (1986), Alvares

and Billorey (1988), and Thukral (1988) have mentioned cases of inadequate compensation, disparities in fixation of compensation, scandals in payment especially to tribals, and many instances of exploitation by land owners, money lenders and lawyers.

The Narmada Valley project, the largest river valley in the World, is taken as example by many researchers to lay focus on dysfunctional aspects. Kothari and Bhartari (1984), Alvares and Billorey (1987 and 1988), Singh (1987) and Bana (1988) have highlighted the colossal damages in terms of huge displacement, submergence of vast tracts of arable and fcrestlands, injudicious use of finances, problems of water logging, increasing salinity etc. Further, they have referred to the cost-benefit analysis, which is heavily weighted against the execution of the project. The authors have concluded that the ecological destruction and human displacement to be caused by the project will be colossal in comparison to the worth of electricity generated and additional irrigation facilities.

The study of Ota (1996) on Rengali dam clearly indicates that, the average legal holding size in the relocated site has increased as compared to their pre-displaced status (from Ac.4.65 to Ac.5.12), yet the operational land holding has been considerably reduced from Ac.6.11 in the pre-displaced stage to Ac.3.84 in the relocated site. But so far as access to common property is concerned, the average area of land per family doing shifting cultivation was Ac. 1.27, in the relocated site, it has been reduced to Ac.0.21. Similarly, while in the relocated sites 23.72% and 17.47% families have got access to grazing land and burial ground respectively, in the pre-displaced area it was accessible to all families. Further, while 85.42% of families had encroached Forest/ Government land, in the relocation site it has reduced to 49.84%.

However, many a time development, either spontaneous or induced, brings not only benefits; but also often causes social disruption. Projects that involve population displacement invariably give rise to a set of complex economic, social and environmental problems, which need to be addressed with care and sensitivity. On the other hand, in order to justify the construction of a mega development project, its wider implications on the people and the environment are deliberately undermined and its lower costs and higher benefits are highlighted. The irony is that people who suffer the mayhem and bear the brunt of development most are least benefited and the fruits of development go to others. The fact,

however, is that the issue of involuntary resettlement has often not received the attention it deserves.

Involuntary resettlement is not a problem that will fade away in the foreseeable future. The large-scale infrastructure projects, which give rise to it, are widely regarded as a development necessity. Therefore, the number of projects that entail acquisition of land is certain to go up (Guggenheim, 1994).

The following section highlights the problems of displacement and rehabilitation with reference to some of the important major irrigation projects in India, which is as follows:

1) Bhakranangal Project

Bhakranangal project is India's first major dam, which was constructed in 1954. Government acquired land from 2,180 families of two districts, viz. Una and Bilaspur in Himachal Pradesh at 1942-47 average prices. The oustees were promised rehabilitation in the districts of Sirsa and Hissar, which are at present part of Haryana. But the allotment of alternate agricultural land to the displaced was made at 1952-57 price, which are very much higher than that of the 1942-47. As a result the allottes had to pay more than the compensation amount (Thukral, 1989).

A total of 730 families have been resettled out of the total of 2,180 families but these families were not given proprietary rights on the resettled lands. The rights are vested with the state government. As a result the resettled oustees, were, still are, unable to avail of any governmental development loans and other facilities. Many families, of those resettled at rehabilitation centres found life miserable and were forced to return to Himachal Pradesh from where they were displaced.

2) **Pong Dam**

During 1965-66, about 80,000 people were displaced (30,330 families) due to the construction of this dam Pong. Of the total of 30,330 families displaced by the project only 53% were paid compensation. Accordingly those who were not eligible for compensation were not allotted any land as a rehabilitation measure. And such land which was allotted, to eligible persons, already under the occupation of local people.

People got Rs. 750-1000 per acre as compensation for land, which was much less than the market price i.e. Rs. 10,412 per acre. One interesting thing happened here is that the dam

is in Rajasthan but displacement took place in Himachal Pradesh. Here neither Rajasthan government nor Himachal Pradesh government feels responsible for the rehabilitation of the displaced (Thukral, 1989). Very few people got employment though there was a provision to provide employment for project oustees. Apart from this skilled and unskilled labor for dam construction were brought from outside.

The displaced persons were harassed and even beaten up by the host population. Many of them returned to Himachal Pradesh to maintain their lives. They have now been forced to become landless migrant labors.

3) **Koyana Dam**

This dam is situated in Maharashtra, which affected 100 villagers either directly or indirectly. Around 30,000 people were displaced due to this dam (Irawati and Nimbkar, 1969). Here those people who were having legal land holdings were considered for compensation. Land was acquired at the rate of Rs. 50-100 per acre and allotted at the rate of Rs. 300 per acre, as a result each allottees got less than he had before and hence the average size of the new holdings became smaller.

There was arbitrary valuation of land as no distinction was made between dry and wetlands. Absentee landlords got compensation, while actual cultivators being evicted. In the case of separated families, where formal partition deeds were not made, sharing the compensation amount among the former members of the joint families created bitterness and tensions. The government promised to pay Rs. 150-300 per acre for developing new lands, but did not keep up its promise. From the compensation amount due for the houses, 5% was deducted by the government in the case of those who salvaged the materials of dismantled houses. Hostility of the locals to the new settlers created several difficulties to the latter, e g access to drinking water from locals' wells, denial of access to road through their lands etc.

4) Kutku Dam

This dam is situated in Bihar. Due to the construction of this dam a total of 676 families were displaced (ie a total population of 4,500 people). The people displaced by this project are tribal.

The displaced tribal could not use the compensation amount productively. As soon as they received the compensation, brokers and middlemen entered the area with consumer

goods, which are unknown to the tribal till now, and no meaning for them. No local political leader took any interest in solving the problems of displaced. The administration failed to implement its policy of ensuring that atleast half of the compensation money paid to each family is placed in fixed deposits in banks.

5) **Nizam Sagar Project**

This project was constructed during the period 1923-31 on the river Manjira, which is a tributary of river Godavari. It is the longest project in the state A.P.

40 villages in two taluks were affected on account of the construction of the project. Government acquired 20,140 acres of private land from nearly 4,232 families. At the time of planning for the project, the policy envisaged was to pay compensation only for the houses likely to be submerged not for the lands since it was intended to provide " land for land" (Reddy and Reddy, 1998).

The government recorded its displeasure on cash compensation, as it was felt. The government nevertheless, paid compensation to the lands of about one third of the total displaced persons. Before fixing the rate of compensation, the government had examined the land transactions and finally arrived at a figure ten times the assessment in the case of wet lands and fifteen times in the case of dry lands.

Out of a total of 13,489 persons displaced only two-thirds or, 9,000 persons were settled in the rehabilitation centres established by the government. The remaining one-third or about4, 500 manage to rehabilitate themselves on their own in their adjoining villages after receiving cash compensation in lieu of land as well as houses.

6) **Tungabhadra Project**

The construction of this dam was started in 1945 and completed in 1953. In all 65 villages, covering three districts, Bellary, Raichur and Dharwar. A total of 8,938 families consisting of 47,761 people were affected by the project. The area submerged was of the order of 49,749 acres.

The market value in 1941 would be on the basis of valuation of property. However, the actual proceedings for the acquisition of private lands commenced only in 1946. While the fixation of market value of 1941 itself evoked a lot of discontent among the displaced

families, the delay in payment of compensation by about five years added grist to their demand that compensation should be based on 1946 market prices (Reddy and Reddy, 1998).

Dissatisfied by the proposed compensation, the families threatened by displacement launched an agitation and after four long years of negotiation the government was forced to consider the general price difference between the years 1941 and 1950, and sanctioned an ex gratia payment of 75% of the market value of land in 1941-42, excluding 15% solatium. Even this could not satisfy the people and the agitation continued further. Finally, the government conceded their demand and raised the ex gratia payment from 75% to 85% excluding 15% solatium. Besides, farmers were allowed to cultivate the non-submerged lands until 1953.

The policy envisaged for each affected cultivating family allotment of five acres of land in the command area in addition to the compensation paid. Each agricultural family, including tenants, whom provided with 5 acres of land for cultivation and ten cents of land for house site and cattle shed. Land for cultivation was allotted in the command area of the project. But some farmers did not accept the offer as the lands were far away from their original villages. Farmers preferred to take even dry land in the vicinity of their own villages than the wet land under the command area, which was inhabited by people with a different language and culture from their own. Displaced families were also provided free transport to shift men and material to new colonies.

1.5 Problems of Displacement

The various major and serious problems as a result of the nation's development due to various development interventions are grouped under the following major heads:

1. Displacement of Tribals;
2. Multiple displacement;
3. Faulty Cost- Benefit Analysis;
4. Absence of a Rehabilitation Policy.

1.5.1 Displacement of Tribals

A large number of projects have been taken in the country since launching of the First Five Year Plan with a view to exploit our resource potential for the benefit of the community. The tribal areas in the country have provided the most suitable sites for relocation of a large number of major projects. Central Water Commission (1990) states that only 22% of the 32

dams (above 15 meters) completed between 1951 and 1970 were in tribal area, 60% of the 85 such additional dams between 1971 and 1990 were in tribal region. Fernandes and Asif (1997) say that of the total 23.62 lakh acres acquired by the government for development projects in Orissa between 1951 to 1995, 30.2% were forests (tribal habitat) and 28% commons, much of it in tribal regions.

Obviously, the projects are taken up in area rich in natural resources like water, minerals and ores and forests. For reasons of topography and resource content, the tribal areas in the country have provided the most suitable sites for location of a large number of major projects. The schedule tribe population forms only 7% of our country's population but the proportion among those displaced by development projects is as high as 40%. When projects came to such place and the authority demands for the legal document to distribute the compensation money, the tribals suffer. This is what we call internal colonization (Arreparampil, 1988).

Displacement in these projects follow either from acquisition of private lands or from ear marking and assignment of the government and community land for use of the projects. While in the former case the economy of population dependent on land gets upset, in second case impoverishment of a section which depends for its living on the forests and natural eco-system is a necessary consequence. In either case, there is a disruption of the socio-economic and cultural life of the tribal wherever physical displacement of habitations and families take place. Table 1.7 shows the magnitude of displacement and rehabilitation in tribal areas.

Table 1.7: The Magnitude of Displacement and Rehabilitation in Tribal Areas

Year	No. of Displaced Families	No. of Rehabilitated Families
1968-69*	817	309
1969-70*	2399	1412
1970-71*	40	18
1971-72**	4561	1587
1972-73**	2310	590

* Data pertaining to Kerla, Gujurat, Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu, West Bengal and Himachal Pradesh only.

** Data pertaining to Maharashtra, Manipur, West Bengal and Rajasthan only.

Source: Hasnain, 1987

In most cases, it has been found that tribal families displaced as result of establishment of a project do not receive any benefit there from after losing their lands, home and hearth. Consequently, they regard the new project in particular and development work, in general, as their enemy rather than friend.

The legal system that supports national development for which the act, used is based on the principles of formal system that supposedly serves 30% of country's population. It is imposed on the rest like common property resources like the Land Acquisition Act and Indian Forest Act, 1927 are based on the doctrine of Eminent Domain[2]. The former asserts the right of the state to define public purpose and the later declares all forests as state property (Fernandes and Paranjpye, 1997).

The local economy is rarely understood while planning rehabilitation. Compensation is given for the homestead and for patta land[3]. In reality the inhabitants of these areas depend on forest for more than 50% of their food and other needs. A rehabilitation scheme based exclusively on patta land and the homestead does not cater to this informal economy because the scheme itself belongs to the formal organized sector, which is foreign to most of the inhabitants. Such an approach ensures the entry of moneylenders and other exploitative elements in the area, since they are conversant with the formal economy (Das, Fernandes and Rao, 1988).

Moreover, the criterion for compensation is market value. Being administratively neglected, most land records in tribal areas are outdated. For example, in Palamu District of Bihar land records have not been revised for five decades and in Koraput District for more than 30 years. Lands are in the name of the dead and not their descendants. This results in conflicts among affected families (Lobo, 1997).

Tribal culture is distinct from those of the groups belonging to the modern economy. They are also marginalized from the mainstream political system and vulnerable to exploitation. The special needs of tribes have not been taken into account in past resettlement

[2] This doctrine asserts that the state has absolute right over the land and related resources within its territory. In this sense, the government has every right to acquire the property of the citizens for 'public purpose' (Usha Ramanathan, 1996)

Patta land is nothing but the land, which is legal.

plans and policies and the tribal encounter have mostly resulted in material impoverishment and social disintegration (Goyal, 1996).

One of the major objectives of establishing projects in backward areas to bring effective changes in such traditional values and cultural pattern, which are inhibitive to their progress (Reddy, 1992). These projects are considered to be agents of change in economy, promoters of existing skills and a means to diversify the productive capacities of the local population. However, besides creating some positive changes, they have also brought about an adverse impact on the living styles of local people.

Lokayan (1985), while analyzing the impact of Srisailam Dam on the oustees after three years of their eviction, found that due to inadequate land, the income per family had reduced from the original Rs. 9,116 to Rs. 2,347, while the employment potentials had come down from 256 to 59 days. Studies conducted by Subramanyam, et.al. (1986) in the same project area also have brought out the extent of deprivation in the newly resettled villages. In the past displacement did not bother people much as the number involved were very less but projects undertaken at present are gigantic, such as large irrigation and hydropower projects, large industrial and mining complexes, etc and the number of people involved and the size of the area affected are getting larger and larger.

Das and Banerjee (1962) have found that displacement of tribes and their resettlement in new areas caused disruption in their socio- cultural life. The authors also note that continuous contact with outsiders and availability of compensation money could make the evicted people aware of new wants. Even after they rendered jobless due to completion of various construction works, the desire for newly acquired goods and things lingered, thus creating a void in their lives. Singh (1982) has discussed the impact of the Patratu Project in terms of the disintegration of traditional culture, rehabilitation of uprooted villagers and new trends in the emergence of the industrial society. His study reveals that the communities at Patratu had shown a considerable degree of change in occupational structure and economic activity.

Roy Burman (1968), Muthayya and Mathur (1975), and Sinhamahapatra (1980) have also observed the various changes in occupational pursuits, agricultural practices and traditional society. The Special Correspondent of the Economic and Political Weekly (1985)

has reported the adverse impacts of Inchampalli Project on tribal culture, which has led to tribal genocide.

In the words of Mahapatra (1991), there is a crying need for World Assistance to the displaced persons for their proper rehabilitation and adequate compensation for the 'social cost' and 'human cost' involved. Hirakud dam in Orissa will be a case in point to understand the impact of major dams on tribes. Finally, the tribes and peasants will have to sacrifice in the name of nation. India has failed in its avowed objectives (Baboo, 1991).

7.5.2 *Multiple Displacements*

The Rihand Dam Project in U.P. reflects the untold suffering of the people who were displaced due to this project. Dhagamwar's finding as the Supreme Court Commission clearly shows the injustice given to the displaced people. In 1961, when the Rihand dam was commissioned, the people were directed to settle in the place they choose by the U.P government but now, they are being told that the entire belt of seven lakh hectors has been forest land since 1971 and they must evacuate that land even if that move means the ruin of their economic condition (Dhagamwar, 1989). Similarly in the case of the displaced people of Hirakud Dam Project who settled in Brajrajnagar do not possess ownership title of the house or land they occupy. And when Coal India acquired the land for mining project it did not even bother about rehabilitating them. Deprived of their homeland by one project they are still haunted out of their home and hearth by another (Panda and Panigrahi, 1987). For example in Koraput district of Orissa one village has been displaced more than once within 16 years. First the Hindustan Aeronautics limited (HAL) project displaced them and they were again driven out of their new settlement by the Upper Kolab Hydroelectric Project in 1978 (EPW Editorial, 1989).

Hence tremendous psychological trauma and identity crisis is caused by such multiple displacements. The Pong dam oustees are a case in point. Harassed and even beaten up by the host population, many of them returned to Himachal Pradesh only to find that they were no longer acceptable as they used to be among the members of their group (Thukral, 1989).

This is because as Thukral (1994) has opined that multiple displacement means not only hardship to those subjected to it but also a heavy investment of scarce resource in displacing and rehabilitating the same people more than once.

1.53 Faulty Cost-Benefit Analysis

The economic methodology employed to justify projects is based solely on the cost-benefit analysis. Cost-benefit analysis justifies a project economically when the sum of a project's benefits outweighs the sum of project costs. But it overlooks distribution patterns-distribution of both cost and benefits. It does not ask who is paying the costs, who is specifically is getting the benefits, or who is losing. It only assesses the " total" effect of the project design to determine how it stacks up in relation with other investment alternatives. But harm caused to individual families- the displaced families- cannot be "outweighed" or explained away by benefits to other families, or by the aggregate of project benefits, independent of their allocation. Cost-benefit analysis does not answer the risks accruing to various subsets of individuals. Real impoverishment risks are distributed differently than project benefits (Cernea, 1999). Aggregate benefits may be real, but they do not automatically offset each individual's costs.

Again the Cost-benefit analysis in most of the cases are biased in the sense that it underestimates the cost and over estimates the benefits so that the requisite benefit-cost ratio is shown to have arrived at. Further, during actual implementation, there are enormous escalation in costs, considerable delays and changes in design and scope of the projects. Benefits, on the other hand, fall well below anticipated figures as actual irrigated area and achieved yields fall below projected levels (Rangachari, et.al, 2000).

However, costing of the marketable commodities is taken into consideration. The common property resources are rarely compensated. Similarly, the wildlife, rare species, archeological evidences and other rare and precious culture of the people were never taken into consideration for valuation. Reliance on cost-benefit analysis is methodologically questionable not only from a social perspective, but also from a market perspective. Market valuation is based on voluntary exchange between a willing seller and a willing buyer. Resettlement is involuntary: it imposes administrative acquisition of assets. Nor is resettlement a marginal market valuation decision for those affected: on the contrary, it imposes a total life change (Cernea, 1999). A GNP based pattern of development hides inequalities and above all does not reveal the type of injustice that is done to a section of the population in the name of national development, which may benefit a few groups (Das,

Fernandes and Rao, 1988). Here is a situation where the displaced people whether due to dams or industries are asked to make sacrifices for the welfare of the nation. In this background, it is important to enquire into the planning and implementation processes in order to seek reasons for these sorry state affairs.

The major dams, despite creating several benefits, have not achieved their stated objectives in terms of economic benefits (Kothari, 1984). It is also established that the river valley projects are not a positive propositions in India. Usually a project is sanctioned by the Planning Commission only when the cost-benefit ratio is 1:1.5. However, one of the study has indicated that the cost-benefit ratio in the case of construction of dams is only 1:0.46 (Barnabas, 1985).

For every benefit that is generated by the projects, the society has to bear a greater cost. The major objective of building the dams is to improve the living standards of the poor (Reddy, 1989). In spite of tremendous amount of benefits generated by such projects, the rural people residing in the vicinity of dams have experienced very little economic gains (Reddy, 1989). The greatest sufferers are the villagers displaced by construction of the reservoir (Paranjpye, 1987).

1.5.4 Absence of a Rehabilitation Policy

Development is not a free lunch (Gumaste, 1998). Unfortunately, those who pay for the lunch rarely eat it. The displaced people are the donors to society of their belongings, sources of livelihood, their social and cultural institutions so that society at large progresses and benefits. They sacrifice so that development of the nature comes through. Although all development projects oust people, infrastructure projects do so more visibly, as they are land-intensive. In their case a large number of people are rendered diaspora per project and per unit of output.

But the disgusting factor in connection to the development and displacement is that there is an absence of a national rehabilitation policy in India. Hence the speed with which the displaced are rehabilitated and the quality of life in the new area are crucial aspects. Though rehabilitation policies are present in states like Maharashtra and Madhya Pradesh, but they are volatile in nature because these policies vary not only across states, but from

project to project as well. Indeed, it would not be an exaggeration to say that there are as many policies as there are projects (Vaswani, 1992).

In the past some years, there has been a virtual flurry of policies and even though the " policy of tribals displaced by development projects" has been in the drafting stage for the past some years, it is only now that a range of different policies have emerged. All these policies assume that since displacement is inevitable, the need is to deal with the trauma, not to question the process that is causing the displacement.

Historically, the trajectory of the land for land policy has followed an inverse course to that of the economic value of land. The government officials have been quite apathetic in providing land to the displaced people. In several cases the land provided to the displaced people was dry and they had to put in a lot of effort and resources to develop the land. In the course they became paupers people who made a collective claim or those who had political patronage. In such cases the illiterate tribal people suffer the most.

By the mid seventies, wider public awareness, the demand for greater transparency in project implementation, as well as the more organized movements of the middle farmers as well as the landless and marginal peasants grew, making the land-for land demand more urgent. Though the new policy drafts acknowledge this problem they shirk away from making any commitment. So, these policies violate the constitution by not providing an alternative source of living to the displaced people.

However, it is the World Bank, which took the first step in formulating an approach to the resettlement question. The World Bank policy on resettlement has undergone several revisions since it first came into existence. Lessons learnt from the application of policy have provided the basis of principles such as minimizing displacement, government responsibility, the right of resettlers, protection of host population interest, the forward looking definition of the objectives of resettlements and so on.

So far as draft national rehabilitation policy is concerned, it has little to say on gender sensitization and female empowerment. The policy makes a point in recognizing that it is tribals who have historically been and are still being, especially victimized by displacement-and indeed, by " development". At the same time, however, it is important to recognize that displacement also severely affects the other section of this country, including agricultural

labor, small peasants and the urban poor. These sections are virtually ignored by the draft national rehabilitation policy.

1.6 The **Present Study**

In developing countries, the scale of development related population displacement has grown rapidly over the first few decades. Due to the compelling need for infrastructure development as a result of first growing population densities. Developing countries invest around $ 200 billions per year in new infrastructure (World Bank, 1994b). The social and economic returns from these projects have been very high. However, a lot still needs to be accomplished if the entire World population has to be provided access to basic necessities and as such investment in infrastructure is expected to continue to grow over the next couple of decades at least. The challenge of solving the resettlement dilemma can only become formidable.

Development involves change in land and water use patterns and in some instances these changes require that people be displaced. While involuntary displacement must be avoided or minimized wherever possible, the need for resettlement cannot be eliminated completely. Clean drinking water, energy for expanding industries and irrigation water for thirsty fields are needed for improving human livelihoods in developing countries. If involuntary displacements are to a certain extent inevitable, they must be carried out in a way that would not only protect but also improve the livelihood of the displaced people. If this dimension is not paid adequate attention, then some people will share the gains of these projects while the displaced would end up in misery. Appropriate rehabilitation becomes an essential part of any project involving displacement.

1.7 **Objectives**

The main objectives of the present study are:

1. To make an in depth analysis of the process of evolution of the rehabilitation policy,
2. To analyze the implementation of rehabilitation policy measures and their impact on the economic and social life of the displaced people and
3. To study the income and equity aspects of different categories (ST, SC and OC) of the displaced people with special reference to Rengali Dam in Orissa (India).

1.8 Methodology

The data for the study were collected from both primary and secondary sources. The study is based on the sample survey of the households displaced by Rengali Project. The sampling has been done for collection of data from the households is purely on the basis of land compensation. The distribution of land is classified into two distinct parts and those are

(i.) Distribution of 6 acres of un-irrigated land; and

(ii.) Distribution of 3 acres of irrigated land.

There are 61 resettlement colonies and 95 *clusters**, under Rengali Dam where the displaced people are staying presently. Thirty colonies are made by cutting the reserve forest on each side of the river Brahmani. Twenty-five villages and six villages are coming under Gohira and Samakoi ayacuts respectively. Hence there are 125 villages under the first category of classification i.e. villages with allotment un-irrigated land and in the later categories fall 31 villages with allotment of irrigated land. The selection of the study villages have been done randomly by taking 3 villages from each category i.e. 3 villages with distribution of un-irrigated and 3 villages with distribution irrigated land.

The study also relies on secondary data like reports, proceedings of seminars, awards of Land Acquisition Officers, Judgements and proceedings of legislative assembly and parliament as well as various investigative reports and magazines from time to time. The variables on which the data were collected through personal interview are briefly indicated below:

a) Demographic details covering

(i) age, sex, nature of family, marital status;

(ii) education of the family members;

(iii) employment status of the family members;

(iv) land holding pattern and facilities for agriculture;

(v) housing condition;

(vi) other household and farm activities like cropping, live stock rearing, polutary, etc; and

(vii) income and indebtedness, etc.

Clusters are the locations where atleast 15 families or more resettled by reclaiming land by them.

b) The behavioural aspects included

(i) awareness about Rengali Dam and the consequent displacement of the people;

(ii) land acquisition notice;

(iii) attitude of the government officials of Rengali Dam towards people;

(iv) attitude toward shifting;

(v) valuation of land;

(vi) aspirations and expectations;

(vii) reaction of the host villagers and etc.

c) The group interview included

(i) village status interms of agriculture, irrigation, soil type, cropping pattern;

(ii) productivity of different crops;

(iii) availability of social amenities such as health, education, communication, transportation, marketing, financial institutions;

(iv) water and sanitation.

In addition to this information collected from selected households' general information such as schools, hospitals, transport, water for drinking and agriculture, electricity, banks and etc.

One of the objectives of the study is to analyze the income and equity aspects of different categories of the displaced people with special reference to Rengali Dam in Orissa. To test this objective four different statistical methods have been used which are given as follows:

(i.) Coefficient of Variation

(ii.) Pareto Distribution

(iii.) Lorenz Curve

(iv.) Ginni's Coefficient of Concentration

Coefficient of Variation

For comparing the homogeneity or heterogeneity of two distributions we generally compute coefficient of standard deviation as coefficient of standard deviation is nothing but the relative measure of dispersion based on standard deviation and is given by

Coefficient of Standard Deviation = ==where σ = Standard deviation and X = Mean and

is given by SD (σ)= $\sqrt{\frac{1}{n}\sum(X-\overline{X})^2}$ and $\overline{X}=\frac{1}{n}\sum X$

But 100 times the coefficient of dispersion based on standard deviation is called the coefficient of variation (CV), which is given by the following formula

$$CV = \frac{SD}{Mean} \times 100$$

For comparing the variability of two distributions we compute the coefficient of variation for each distribution. A distribution with smaller CV is said to be more homogeneous or uniform or less variable than the other series with greater CV is said to be less homogenous or more variable than other.

Pareto Distribution

Using certain data on personal income V. Pareto plotted income on the abscissa and the number of people who received more than that on the ordinate of logarithmic paper and found a roughly linear relation. This Pareto distribution or law may be written as

$X= a\, y^{-\alpha}$

Log x = a- **a** log y

Where,

y = income,

x = No. of persons having more than income y.

a = Pareto coefficient

The Pareto coefficient is occasionally used as a measure of inequality. The larger the a, the less unequal is the distribution.

Lorenz Curve

The Lorenz curve is a graphic method of studying dispersion. Lorenz used this curve for the first time to measure the distribution of wealth and income. Pictures often speak more

than words, and in the context of inequality measurement, it is a nice diagrammatic way to depict the distribution of income in any society.

Ginni's Coefficient of Concentration

Ginni's Coefficient of Concentration, also known as Concentration Ratio is based on his coefficient of mean difference and is defined as:

$$\frac{2X}{}$$

Where, G = Ginni's Coefficient of Concentration,

$\Delta 1$ = Ginni's Coefficient of Mean Difference,

Italian statistician Corrado Ginni suggested a measure of dispersion based on the absolute values of the differences between all possible pairs of observations. Ginni's coefficient of mean difference ($\Delta 1$) for a set of *n* observations X1, X2,... Xn is given by

$$\Delta 1 = \frac{1}{n(n-1)} \sum_{i=1}^{n} \sum_{j=1}^{n} | Xi - Xj | \quad \text{for } i \neq j$$

X = Mean of the given distribution.

Ginni's Coefficient of concentration G is a pure number independent of units of measurement and lies between 0 to 1. G is equal to zero in equal distribution and its value goes up with increase in inequality.

In fact, Ginni's coefficient is the ratio of area of concentration to the total area of lower triangle below the line of equal distribution.

1.9 Chapter Outline

The study is organized into six chapters. The *first chapter* deals with the introduction of the study where a relationship between 'Development' and ' Displacement' is clearly made. A global aggregate picture of displacement and various development projects and displacement are discussed later on this chapter. Again this chapter deals with the present study, the objectives and the methodology adopted to study the problem.

The *second chapter* studies River Valley Projects in Orissa. Here an attempt is made to evaluate an overview of rivers, their potentials for agricultural development, problems of flood.

Chapter three confines to the problem of displacement and compensation under Rengali dam in Orissa. This chapter highlights about the dam, displacement, and extent of land acquisition due to the construction of this dam. This is followed by land classification; its valuation, title and apportment of compensation are discussed.

The *chapter* ***four*** is Rehabilitation Programmes and Policies Under Rengali Dam. This chapter briefly highlights about the background of Rehabilitation Policy, which is followed by a brief history of agitation. In the later part, the evolution of Rehabilitation Policy has been discussed. of Land Acquisition in Rengali dam.

The *chapter five* is Impact of Resettlement and Rehabilitation under Rengali Dam. This chapter is divided in to two different parts, viz (i) Socio-Economic survey of the sample villages and (ii) impact assessment. A detailed analysis of all the six resettled villages has been done. In this part land ownership, household ownership of farm implements, livestock owned, average annual income of all the 178 households both in the pre-displaced and post-displaced situation have been calculated. In the section the last part concentrates on the impact assessment. Here a study of inequality of income among the displaced people due to dam construction has been tried under which different tests like Coefficient of Variation, Pareto Distribution, Lorenz curve and Ginni's Coefficient has been done. In this part another section is there which is Impact of Dam Construction on the displaced people. In this section Cernea's Risk Model and his eight Impoverishment Risks- Landlessness, Joblessness, Homelessness, Marginalisation, Social Disarticulation, Food Insecurity, Increased Morbidity and Mortality; Loss Access to Common Property Resources have been analyzed.

The *chapter six* presents the summary and conclusion of the study as well as basic guidelines for a policy-frame for rehabilitation.

Chapter 2

River Water Resources, Major Dams and Displacement in Orissa

2.0 Introduction

The state of Orissa is situated in the eastern section of Indian Peninsula and extends over an area of 60,000 square miles. It is an extensive plateau, which slopes gently into the coastal plain along the Bay of Bengal. The Mahanadi, flowing west to east through the plateau, cuts it into two defined parts. The northern part is an extension of the Chotanagpur plateau and hill ranges known as the Eastern Ghats cover the Southern part. There are four well-defined physical regions, namely the Northern plateau (districts of Mayurbhanj, Keonjhar and Sundargarh), Central Table Land (districts of Bolangir, Dhenkanal and Sambalpur), Eastern Ghats (districts of Koraput, Kalahandi and Phulbani) and the Coastal Plains (districts of Cuttack, Puri, Ganjam and Balasore).

2.1 Land and People

2.1.1 Land use pattern

The total geographical area of the state is 15,540,000 hectares (CMIE, 1996). The details are as follows:

Table 2.1: Cultivated and Uncultivated Area in Orissa

('000 Hectares)

Orissa /India	Under Cultivation			Uncultivated Area			Reporting Area		
	1970-71	1980-81	1992-93	1970-71	1980-81	1992-93	1970-71	1980-81	1992-93
Orissa	7,608	7,020	8,749	7,932	8,520	6,791	15,540	15,540	15,540
India	177,647	181,309	195,677	126,108	122,434	109,328	303,785	304,162	305,005

The Net and gross cropped area in Orissa, in thousand hectares, is given in Table 2.2

Table 2.2: Net and Gross Cropped Area in Orissa

('000 Hectares)

Orissa/ India	Net Cropped Area			Gross Cropped Area		
	1971-72	1981-82	1992-93	1971-72	1981-82	1992-93
Orissa	5765	6232	6304	6874	8742	9416
India	139721	142121	142509	165186	177101	185487

Out of the total cropped area, the net irrigated and gross irrigated areas are represented **in** Table 2.3.

Table 2.3: Net and Gross Irrigated Area in Orissa

('000 Hectares)

Orissa/ India	Net Irrigated Area			Gross Irrigated Area		
	1971-72	1981-82	1992-93	1971-72	1981-82	1992-93
Orissa	851	1215	2070	1171	2006	2471
India	31546	40031	50101	38430	51606	66144

The percentage change of net and gross irrigated area to that of net and gross cropped area is given in Table 2.4.

Table 2.4: Percentage of Irrigated Area to Cropped Area in Orissa

Year	% **of Net Irrigated Area to** Net **Cropped Area**	% of Gross **Irrigated** Area to Gross Cropped Area
1971-72	14.76	17.03
1981-82	19.49	22.94
1992-93	32.83	26.24

Source: Estimated from CMIE, 1996

From Table 2.4, it is seen that the percentage of net irrigated area to net-cropped area in 1971-72 was 14.76 and it has increased to 19.49% in 1981-82 and 32.83% in 1992-93. It shows that 67.17% of the net-cropped area is still unirrigated. This may be one of **the** major constraints of stagnation of the agricultural stagnation.

2.1.2 Population

According to 1991 Census the population of Orissa is 31,659,736 of which 16,064,146 are males and 15,595,599 are female. Category wise 7,032,000 are ST and 5,129,000 are SC. In rural areas the ST population is 6,670,000 and SC population is 4,580,000 (Rural development Statistics, 1999). In other words one out of every four persons in Orissa is a tribal. There is a heavy concentration of these populations in the Western Orissa and in the Coastal districts they constitute a low percentage.

2.2 Major Rivers and Water Resources of Orissa

The rivers are referred to as large when their *catchment area*[1] is 20,000 square km. and above. Under this group come Mahanadi, Brahmani, Indravati and Kolab. The river basin of Orissa is given in the Map-2.1. An overview of major rivers are given as follows:

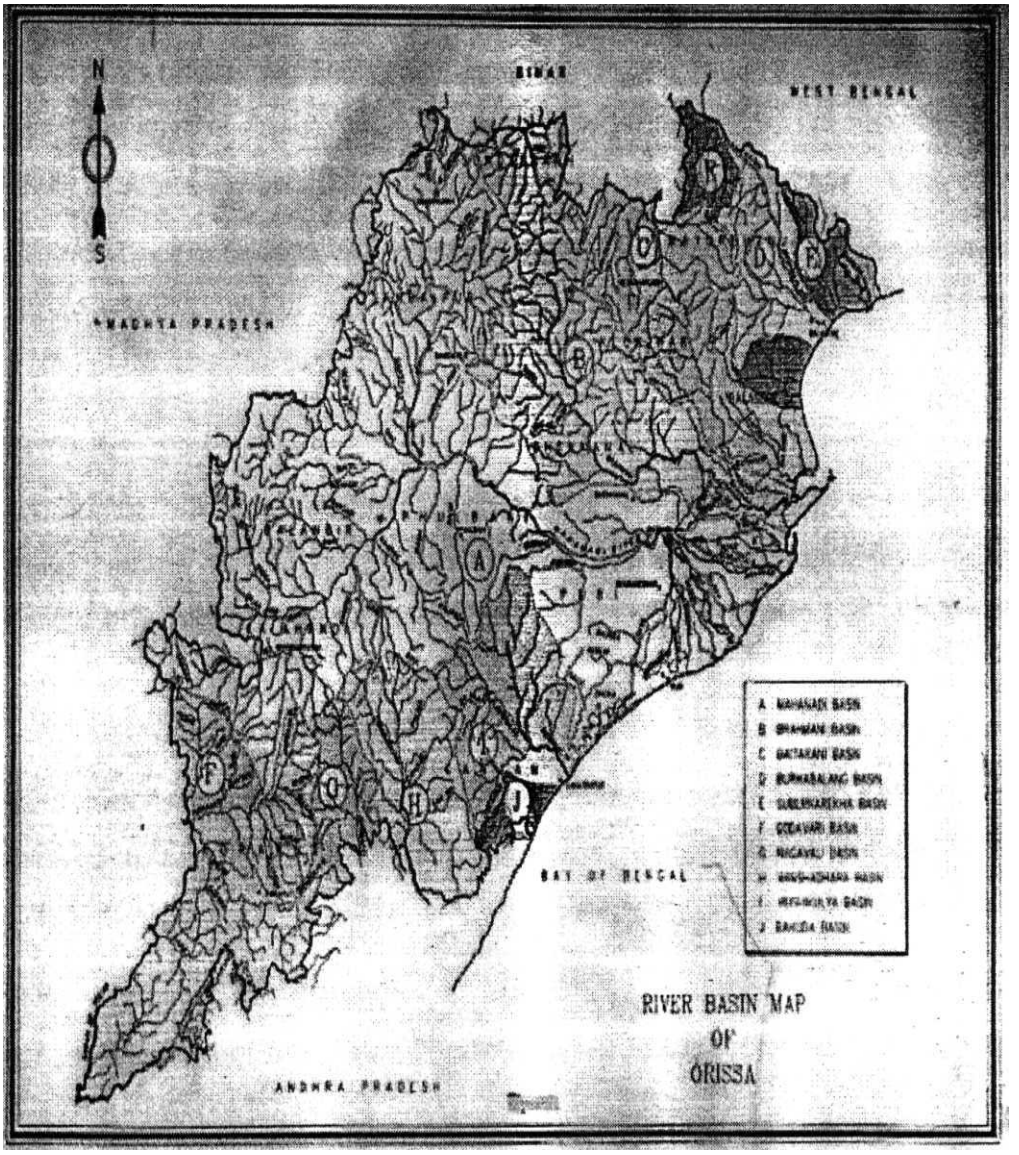
[1] Catchment Area is the area from which rain flows into a particular river.

(i) Mahanadi

The **Mahanadi basin** extends over an area of **1,41,589** square km spread over four districts- M.P, Orissa, Bihar, Maharashtra. It drains for about 42% of the total geographical area of the state of Orissa. The major tributaries of this river in Orissa are Ib, Ong, Tel etc. and the major distributaries of this river are Kathajori and Birupa.

The maximum discharge of Mahanadi in flood time is about 45,300 cumecs, which is almost as high as that of the Ganga. But in the dry season the discharge reduces very much and it is generally between 40 cumecs to 70 cumecs. The recorded minimum discharge in dry season is only 6 cumecs.

Map-2.1: River Basin Map of Orissa



(ii) Brahmani

The Brahmani rises near village Nagri in Ranchi district of Bihar at an elevation of about 600 metres. After flowing for about 258 km inside Bihar it enters into Orissa. In Bihar it is called South Koel. After falling with another tributary Sankh in Rourkela,

Orissa it is known as Brahmani and falls into Bay of Bengal, travelling a length of 799 km. In Orissa, the total drainage area of this river is 22,620 square km. It passes through Sambalpur and Dhenkanal districts after crossing Sundargarh district. The Brahmani enters its delta at Jenapur and bifurcates there to form Brahmani and Kimria. Down below they reunite at Indupur (30 km down) and flows as Brahmani up to the sea. The major tributaries of this river are Koel, Kuradhi, Mankara, Samakoi on the left and Karo, Sankh, Rukura, Gohira, Tikra, Singdajor, Nigra, Barjor on the right.

Highest flood discharge of Brahmani at the delta head is 24,246 cumecs. As per the master plan it is proposed to transfer 2.99-lakh hectare metre of water from Mahanadi basin to Brahmani basin for irrigation.

(iii) Indravati

It originates in the hill ranges of Eastern Ghats in Kalahandi district at an elevation of nearly 915 metres and falls into the river Godavari after traversing 530 km in Orissa, M.P, Maharashtra and A.P. Its total catchment area is 41,700 square km of which 7,400 square km lies in Orissa.

Major tributaries of Indravati in Orissa are Bangari, Bhaskel and Turi in the left bank and Kanda, Budha, Podagad, Muran, Telingiri in the right bank. As per master plan it is proposed to transfer 4.13 lakh hectare metre of water from this basin to Mahanadi basin.

(iv) Kolab

Kolab river originates from the hill ranges in Koraput district at an elevation of nearly 1,372 metres and falls into river Godavari in Andhra Pradesh after traversing about 420 km in Orissa and M.P. Its total catchment is 20,400 square km lies within Orissa. The major tributary of Kolab is Potteru. River Machkunda also joins Kolab at Motu i.e. the trijunction of Andhra Pradesh, Orissa and M.P and flows into Godavari.

2.3 Problems of Floods

Orissa is one of the most chronically flood-affected states in the country. The floods of 1980, 1982 and 1990 caused heavy damages and thereby disfigured the state's economy. The flood of 1982 was the worst in the recorded history with a discharge of 15.80-lakh cusec at the delta head (Naraj). Coupled with flood, drainage congestion in the deltaic area of the state causes large-scale damage to land and property. Table 2.5 shows the yearly rainfall of Orissa:

Table 2.5: Yearly Rainfall in Orissa (in **mm)**

Year	**Normal (in mm)**	**Actual (in mm)**	**Remark**
1955	1482.2	1509.80	Flood
1956	1482.2	1834.60	Flood
1965	1482.2	997.10	Drought
1966	1482.2	1134.90	Drought
1967	1482.2	1326.70	Cyclone & Drought
1968	1482.2	1296.10	Cyclone & Drought
1969	1482.2	1302.10	Flood
1970	1482.2	1660.20	Flood
1971	1482.2	1791.50	Cyclone & Flood
1972	1482.2	1177.10	Flood, drought in part
1973	1482.2	1360.10	Flood
1974	1482.2	951.20	Flood, drought in part
1975	1482.2	1325.60	Flood
1976	1482.2	1012.90	Drought
1977	1482.2	1326.90	Flood
1978	1482.2	1261.30	Hail storm, Whirlwind, Flood and Drought
1979	1482.2	950.70	Drought
1980	1482.2	1321.70	Flood, drought in part
1981	1482.2	1187.40	Tornado, Whirlwind, flood and drought
1982	1482.2	1179.90	Flood, drought and cyclone
1984	1482.2	1302.80	Drought
1985	1482.2	1606.80	Flood
1986	1482.2	1548.9	Drought & cyclone
1987	1482.2	1040.4	Drought & cyclone
1988	1482.2	1274.40	Drought
1989	1482.2	1272.20	Drought
1990	1482.2	NA	Flood

Source: Agriculture Statistics of Orissa

In Orissa, flood is generally proceeded by cyclone particularly during later part of southwest monsoon. All the major east flowing rivers of the state cause flood and water logging. Generally, the monsoon is very active in the state from June to October. In the coastal plains, the slope of the river is very flat. Intensive rainfall and heavy discharge of river flow cause spilling of river in the foothill plains as well as lower plains, resulting erosion of the river basin lands and heavy damage to the side lands. Formation of the tidal bars across the mouths of the rivers also adds to the seriousness of the problem. Out of the total geographical area (15,5707 square km) of the state 41,000 square km area has been identified to be either flood prone or water logged and again 75% of the total flood affected area is situated in the districts of Cuttack, Kendrapara, Jagatsinghpur, Puri, Balasore, Bhadrak, Jajpur and Ganjam inundated by the rivers: Mahanadi, Brahmani, Baitarani, Subarnarekha and Rusikulya with their tributaries and branches.

2.3.1 Rainfall

Climate of Orissa is sub-tropical in nature. Medium rainfall and high temperature are the characteristics of the climate of Orissa. According to the Orissa Agricultural Statistics (1988-89) published by the Director of Agriculture and Food production, Orissa, average annual rainfall in Orissa is 1502.5 mm. However the distribution of rainfalls is seasonal and uneven. As per this publication, the average monthly rainfall is like this in January-15 mm, Feb- 26.5 mm, March- 20.9 mm, April- 34.2 mm, May- 65.9 mm, June- 219 mm, July-372.6 mm, August- 357.7 mm, September- 235.1 mm, October- 116.4 mm, November- 33.2 mm, December- 6 mm. Thus, 83.2% of the annual rainfall is received between May and September. Intensity of rainfall varies from place to place in the state and also from year to year resulting floods in one district where as drought at other places. The average maximum rainfall is recorded from Mayurbhanj district as 64.9 inches (1648.2 mm) and minimum from Ganjam district as 51.0 inches (1295.6 mm); where as Cuttack, Dhenkanal and Puri districts have recorded average rainfall.

The district wise flood affected area in Orissa is given in Table 2.6.

Table 2.6: District-wise Flood Affected Area in Orissa

District	Geographical Area (sq. km)	Area Liable to Flood (sq. km)
1. Balasore	6,311	5,812

District	Geographical Area (sq. km)	Area Liable to Flood (sq. km)
2. Bolangir	3,013	**2,913**
3. Cuttack	11,142	**11,107**
4. Dhenkanal	10,827	2,458
5. Ganjam	12,531	6,331
6. Keonjhar	8,303	500
7. Kalahandi	11,772	1,480
8. Koraput	26,961	524
9. Mayurbhanj	10,418	200
10. Puri	10,182	7,473
ll.Phulbani	11,119	615
12. Sambalpur	""17,516	1,487
13. Sundargarh	9,712	-
Total	1,55,707	41,000

Source: Dalua, 1991

Flood in Mahanadi has been moderated to a great extent after the construction of Hirakud dam. But the devastating floods of 1982 and 1991 in this river left behind unfold miseries in the delta area to tempt the Planners and Engineers for construction of a second dam across this river.

Rengali dam across the river Brahmani is able to moderate flood at its delta head upto 4 lakh cusecs. But the flood of August 1991 in Brahmani and its distributaries caused havoc in Jajpur sub division (new district). River embankments require to be raised/ strengthened. This is fairly adequate for the Brahmani delta. A few numbers of dams have been constructed or, proposed to be constructed in the tributaries of the river Baitarani. But for effective moderation of flood in a river, construction of a dam across the main river is very necessary. Construction of the Chandil dam in Bihar, across the river Subarnarekha will also help in moderating the floods in the lower plains of Orissa & West Bengal. But even then, the embankment schemes may have to be executed for effective control of flood in this river basin.

The cyclonic storm arising out of deep depression in the Bay of Bengal caused intense precipitation during 2.11.1990 through 4.11.1990 in the districts of Koraput, Ganjam, Puri and Cuttack averaging about 350 mm in 36 to 40 hours in Ganjam district alone. Consequently there was wide spread damage to irrigation system, roads, buildings etc. in the entire Rusikulya basin. The floods of 1980, in Vansadhara basin were the

deadliest ever known to the people of the area. Floods in the Salandi and Budhabalanga basin also cause widespread damage. The highest ever-recorded rainfall of 825 mm in Thuamul Rampur area in July 1991 resulted flooding of Upper Indravati Power tunnel. Consequently there was heavy loss of life and property.

2.4 Rivers and Irrigation Potential for Agricultural Development

The backwardness of Orissa economy is reflected in its unbalanced occupational structure with 70% of working population engaged in agriculture. Agriculture thus provides the means of livelihood to a vast majority of people. It contributes about 2/3rd of the state's income and contributes about 60% to the state domestic product by way of providing employment to as many as 75% to the total work force. But unfortunately about 75% of the cultivable land is still under rain fed agriculture as a result even with a large proportion of population engaged in agriculture, the state is not sufficient in foods and raw materials for industry. The average availability of food is not only deficient in quality and quantity but also precarious as exhibited in recurrent famines. Because Orissa is a land of climatic contrast. The seasons and weather conditions range from extreme of heat to extreme of cold, from extreme dry spells to extreme of humidity, and from drought and semi-drought conditions to torrential rains and floods. About 83.2% of the total rainfall in Orissa is received between May to September. If some reason monsoons are too early or too late, or if the rainfall is too little or too much, then the whole agricultural sector is put out of gear, which in turns adversely affects industry and trade as well.

Agriculture in this state is almost primitive, dependent on the vagaries of whether, and starved of inputs, modern technology and marketing facilities. However, irrigation, which is the basic and essential input for successful agriculture, is lacking to be provided to all the cultivated fields in Orissa during Kharif as well as in Rabi seasons resulting in poor agricultural production and consequently lower standard of living.

Therefore to insure against the risks of such vagaries of rainfall, irrigation facilities has to be developed in a systematic and well-knit manner. Total rainfall during the year has to be stored up and released through out the year according to the requirements of various crops. The wasteful flow of water down all the major and minor rivers streams and rivulets must be regulated through a network of dams, bandhs and canals with a view to achieve better management of water resources. Irrigation is the main input of

agriculture, without which it cannot sustain its full growth. When we talk about irrigation development we must correlate it not to agriculture alone; but a horde of other socio-economic aspects like industry, navigation, hydropower, pissiculture, drinking water supply etc. Hence the main purpose of construction of multipurpose dams in Orissa has been Irrigation, Flood control and Power generation.

Irrigation is necessary in major parts of India where the mean annual rainfall is less than 60 inches and a sizable portion of it is precipitated during the southwest monsoon. It is indispensable for the economic use of the land for the majority of population of India who depends on agriculture. When irrigation is provided both land and labor can put to profitable use through out the year. In view of their role in irrigation, minimizing flood and supply of hydroelectricity in the multi-faceted development strategy in the planning era, such projects have been receiving high priority in the successive five- year plan of the country. With this objective, top priority has all along been given in our Five-Year Plans for irrigation development.

2.4.1 Development of Irrigation through Major and Medium Irrigation Projects

Irrigation is one of the most crucial inputs in the process of agricultural development. Recognizing the importance of this key input the irrigation potential of this state has been sought to be improved through the development of major, medium and minor irrigation projects. Since independence, about 149 major and medium irrigation projects were taken up (CWC, 1994).

In the tentative Irrigation Master Plan it has been assessed that out of total irrigation potential of 59.00 lakh hectares, 39.49 lakh hectares can be exploited through major and medium irrigation projects. In the following paragraphs project wise development irrigation potential of the state in different plans and its proposed future development have been enumerated.

The state of Orissa came into existence as a separate entity on 1.4.1936. Until the Great Bengal Famine of 1866, there was no irrigation project inside the old territory. The old Orissa Canal system was built as a sequel to the said famine in 1866 and was completed in 1883. The other major canal system was Rusikulya system which was constructed in 1900 A.D. Total potential of 1,76,920 hectare kharif and 3,890 hectare Rabi was created through these two systems along with few other medium irrigation projects before the plan period.

During the post- independence period, much emphasis was laid to accelerate the potential creation. Although Hirakud Project and Hiradharbati project were started before the commencement of plan development, both these projects were included in the first plan. In addition to this, works of Mahanadi Delta and Salandi project were taken up during this period. Although the investment was to the tune of Rs. 55.28 crores, there was no creation of potential.

In the II Plan Period (1956- 61) period there was a great leap in development of irrigation. Six medium irrigation projects namely Salki, Dhanei, Budhabudhiani, Salia, Derjang and Ghodahad and three major irrigation projects of Mahanadi Delta Stage II, Hirakud stage II and Salandi were taken up extending for the first time the activities of major and medium irrigation to Dhenkanal, Phulbani and Keonjhar districts respectvely through Derjang and Salki and Salandi Projects. In this plan period 1,17,080 hectares of Kharif potential was achieved through Mahanadi Delta Stage I and Hirakud Stage II. The outlay of the plan was Rs. 20.00 crores.

In addition to two major projects namely Hirakud Stage II and eight medium projects continuing from the first and second plan period only one medium project namely Bahuda in Ganjam district was taken up in the III Period (1961- 66) and additional kharif potential of 92,680 hectares and Rabi potential of 93,630 hectares were created during this plan period at a plan outlay of Rs 26.22 crores.

During 1966-69 (three Annual Plan Periods) only two medium irrigation projects namely Utei Barrage in Kalahandi district and Pitamahal in Sundargarh district were added to the numbers of continuing projects. In these Annual plan the major achievement was the development of 71,540 hectares of Rabi potential besides 34,500 hectares of Kharif potential. The achievement of Rabi potential in the 3rd and Annual plans was mainly due to stabilisation of Irrigation in Mahanadi Delta Stage I and Hirakud Stage II. The total plan outlay during this Annual Plan Period for major and medium project was Rs. 20.44 crores.

Again in this IV plan period (1969-74) irrigation was given a higher priority and works in 12 numbers of projects including major projects of Rengali dam, Anandapur Barrage and Potteru irrigation Projects were commenced. In this plan period a record development of kharif potential of 1,74,440 hectares was achieved from the continuing projects which is the highest ever achieved in any plan period till to date. Besides 23,640

hectares of rabi potential was also achieved at a cost of Rs. 20.89 crores during this plan period.

During 1974- 78, the truncated plan period of 4 years a balanced development through 19 numbers of continuing projects including 2 major irrigation projects namely Upper Kolab project and Rengali Irrigation Project, 18 numbers of new major and medium irrigation projects were taken up for execution. This includes also the modernisation projects for existing Hirakud and Rusikulya irrigation system. In this plan period the number of major and medium irrigation project of the state touched the half-century mark. The outlay in this plan period was boosted up more than three fold to Rs. 70.63 crores.

Though only 9 numbers of projects could be taken up during these two years of Annual Plan i.e. 1978 to 1980, work in the Upper Indravati Project was commenced in this period. Also in this period work of replacing old anicuts on Mahanadi and Birupa with gated barrages was taken up. The development of kharif and rabi potentials were respectvely 36,570 hectares and 57,270 hectares at a total plan outlay of Rs. 67.81 crores. Considering the time period of only two years for the Annual plans, these achievements are comparatively quite substantial.

In this VI plan period (1980-85) Subarnarekha Irrigation Project, a joint venture with Govt. of Bihar was taken up along with 14 other projects. Out of this, there are 4 numbers of renovation, strengthening, extension or improvement work of existing Hirakud, Ghodahad, Bargarh Canal and Bhaskel Projects. The achievement of kharif and rabi ayacut were respectively 1,11,490 hectares and 45,450 hectares. The outlay in this period was enhanced to more than Rs.360.00 crores.

Three new projects namely Mahanadi-Chitropala, Birupa-Genguti and extension of Remal were taken up during this VII plan period (1985-90). 78.15 thousand hectares of kharif potential and 42.15 thousand hectares of rabi potential have been created by way of achieving the potential of the on-going projects at an outlay of Rs. 668.01 crores (Rs. 623.61 crores state plan + Rs. 44.40 crores central plan).

Although the 8th plan was to take off from 1991, it could not do so. Hence the first two years (1990-91 and 1991-92) was taken as annual plans, with a targeted outlay of Rs. 160.54 crores and Rs. 244.20 crores for 1990-91 and 1991-92 respectively. Achievement

during 1990-91 was 9640 hectares kharif and 2210 hectare rabi. Target for 1991-92 is 28,670 hectares kharif and 12,820 hectares rabi.

Therefore in development projects, multipurpose river projects have been on the top priority in Orissa. According to National Register of Large Dams, 1994 there are 149 dams in Orissa. Two of the state's 149 large dams were completed before 1950; another eight before 1970; forty-eight in the 1970s and 18 were under construction in March 1990. Twelve are major dams, all except four of them in its tribal districts (Fernandes, 1996). In many cases it becomes necessary to know the distribution of major and medium irrigation projects over different districts of the state as well as the areas benefited by these projects. The numbers of dams in different districts of Orissa are given in Table 2.7

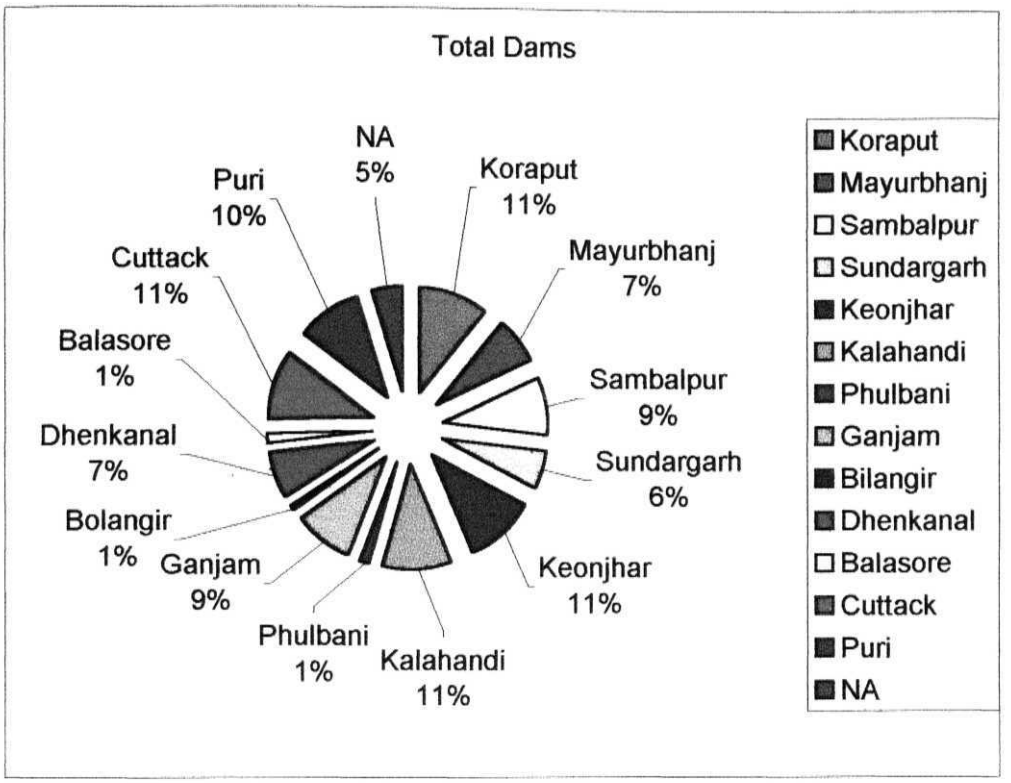
Table 2.7: Total Number of Dams in Different Districts of Orissa

Districts	**Up to 15m**	**15.01-** 20m	**20.01-30m**	**30.01-40m**	**40.01-50m**	**50m and above**	**Total**
1. Koraput	2	6	**3**	**1**	**1**	**3**	**16**
2. Mayurbhanj	4	4	**3**	-	-	.	**11**
3. Sambalpur	6	6	**1**		-	**1**	**13**
4. Sundargarh	4	-	**4**	**1**	-	-	**09**
5. Keonjhar	6	6	-	**2**	**1**	**1**	**16**
6. Kalahandi	4	6	**2**	**1**	**1**	**2**	**16**
7. Phulbani	.	-	**2**	-	-	-	**02**
8. Ganjam	3	8	**3**	-	-		**14**
9, Bolangir	**1**	-	-	-	-	-	**01**
10. Dhenkanal	5	3	**2**	-	-	**1**	**11**
11. Balasore	**1**	1	-	-	-	-	**02**
12. Cuttack	5	6	**2**		**1**	**2**	**16**
13.Puri	7	5	**3**	-	-	-	15
NA	4	-	**3**	-	-	-	**07**
14. Orissa	53	51	**28**	**5**	**4**	**8**	149

Source: CWC, 1994.

The distribution of the dams in different districts of Orissa is shown in Pie- Chart (Figure-2.1).

Figure-2.1: The Total Number of Dams in Different Districts of Orissa



Out of the total 149 dams in Orissa, Cuttack and Koraput districts have the highest number of dams and that is 16 dams in each district. Districts Bolangir and Balasore have the lowest number of dams. They contribute only 1% of the total dams of Orissa.

2.5 River Valley Projects and Displacement in Orissa

The so-called development has brought about the uprooting and dismemberment of socio-economic, moral and cultural webs of the people's life built over generation. It has caused great damage to the people. It has marginalized the displaced people and pushed them to the periphery of society. A significant number of those displaced are tribal and other economically marginal rural populations who have historically, depended on the natural resource base, particularly the commons for their subsistence. Table 2.8 represents the human displacement from multipurpose, major and medium projects in Orissa.

Table 2.8: Human Displacement from Multipurpose, Major and Medium Projects in Orissa

Name of the Project	Number of Displaced Families			
Multipurpose	General	SC	ST	Total
(i) Hirakud	Na	Na	1,636	22,144
(ii) Balimela	Na	Na	Na	1,200

(iii)	**Salandi**	**32**	**5**	**352**	569
(iv)	**Rengali**	**8,015**	**1,710**	**1,172**	**10,897**
(v)	**Upper Indravati**	**1,557**	338	**1,630**	**3,725**
(vi)	**Upper Kolab**	**1,308**	**442**	**1,421**	3,171
TOTAL		**10,912**	**2,495**	**6,211**	**41,706**
Major Irrigation Projects		**General**	**SC**	**ST**	**Total**
(i)	**Subarnarekha**	**2,246**	**416**	**6,382**	**9,044**
(ii)	**Rengali Irrigation @**	918	81	**10**	1,009
TOTAL		**3,164**	497	**6,392**	**1,053**
Medium Irrigation Projects		**General**	**SC**	**ST**	**Total**
(i)	Dadraghati	228	**66**	133	427
(ii)	Derjang	**327**	29		**356**
(iii)	Baghua	**406**	**8**	**96**	510
(iv)	Ghodahad	**3**		**65**	68
(v)	Baghlati	**17**	15	91	123
(vi)	Dumerbahal	**74**	23	156	253
(vii)	Pilasalki	**57**	**24**	104	185
(viii)	Kuanria	**49**	**54**	**48**	151
(ix)	Daha	**3**	**10**	**7**	20
(x)	Remal	**1**	**2**	**1**	3
(xi)	Sarafgarh	**26**	**3**	**0**	29
(xii)	Jharbandh	**120**	**2**	**4**	126
(xiii)	Talsara	**1**	**3**	19	23
(xiv)	Gohira	**51**	18	**74**	143
(xv)	Ramiala	**166**	159	89	**414**
(xvi)	Sunet	**84**	**2**	267	353
(xvii)	Kanjhari	**113**	**4**	**80**	197
(xviii)	Bankbahal	**98**	35	149	282
(xix)	Kansbahal	**10**	29	172	211
(xx)	Hariharjore	**140**	**41**	213	394
(xxi)	Harbhangi	**17**	**8**	128	153
(xxii)	Badnala	**4**	**2**	163	169
(xxiii)	Upper Jonk	**46**	**30**	225	301
TOTAL		**2,041**	567	**2,284**	**4,892**
Grand Total		**16,117**	3,829	**14,887**	**57,386**

Source: Dalua, 1993

Govt of Orissa, 2000.

Out of the total 41,706 families displaced by multipurpose dam projects, 6211 families are scheduled tribe i.e. around 15% of the total families displaced are tribal. In Koraput district, where tribal population is 58% have 18 large schemes, occupying

5,00,000 acres or, 7.42% of their area. According to one estimate, the schemes have deprived 6% population of the district, mostly **tribal, of their livelihood.** Thus at least 10% of the **tribal in** these districts have been affected. The Land taken over includes 4,00,000 acres of forests on which the tribal have depended for their sustenance though they didn't have a legal title to it (Govt. of Orissa, 1991).

Displacement and rehabilitation experience in Orissa is described with reference to the following projects:

i. Hirakud dam project (1948-57),
ii. Upper Kolab project (1976-91)
iii. Upper Indravati project (1978- Ongoing)
iv. Subarnarekha Project (1987- Ongoing)
v. Salandi Project (1960-83)
vi. Kanupur Project (1983-Ongoing).

Hirakud dam project (1948-57)

Constructed on the Mahanadi River, Hirakud Dam is the largest multi purpose river valley project in Orissa. Primarily conceived as a flood control measure the water thus stored could also be used for irrigation and power generation. Originating in the Raipur district of Madhy Pradesh, the Mahanadi flows in the south-eastern direction through the districts of Sambalpur, Dhenkanal and Cuttack and finally falls into the Bay of Bengal. Along with its tributaries the total length of the river is 853 km. with the main river has a length of 90-km (Govt. of Orissa, 1968). This is the largest dam in the World with the main dam being 5 km in length. The concrete dam and the earthen dam are 1.2 km and 3.8 km respectively. It has two dykes on either side of the earthen dam with a total length of 21 km. The reservoir formed by the dam is 743 square km covering parts of Sambalpur district of Orissa and Raigarh district of Madhya Pradesh. The maximum height of the masonry dam is 200ft while that of the earthen dam is 195 ft, permitting a gross storage capacity of 6.6 million acre feet. The live storage capacity is 4.72 million-acre feet.

The dam has two canals- the Bargarh canal and the Sason canal. The canals have spread over 10 community development blocks in Sambalpur district and 3-community development block in Bolangir district. Out of these 13 blocks, 9 blocks are intensively irrigated and 4 blocks are partly irrigated. In all the Hirakud Canal system irrigated 611

villages (partly or fully) in Sambalpur and Bolangir districts and the gross command area is 3,20,000 acres and 2,20,000 acres in Sambalpur and Bolangir districts respectively (Govt. of Orissa, 1968).

Submergence

Land for Hirakud reservoir was acquired under the Land Acquisition Act, 1894. All land below River level (RL) 632 was acquired. According to one report, out of total 1,67,376,83 acres of submerged land 1,15,127.97 acres was good agricultural land (Govt of Orissa, 1968). Covering a vast area of 743 square km, this reservoir submerged 249 villages in Sambalpur district alone and in the adjoining Raigarh district of Madhya Pradesh, 36 villages were submerged (Govt.of Orissa, 1968). According to this report 22,144 families were affected i.e. a population of about 1.1 lakhs, out of which 18.34% were ST (Das, Fernandes and Rao, 1988) i.e. 1636 families are ST (Report of the Scheduled Areas and Scheduled Tribe Commission. VI, 1960-61).

Compensation

Land acquired from private landowners was compensated in cash payments. To enable a fair assessment of the land acquired, it was classified into 22 different types on the basis of rental and market value. The former was calculated as 192 times the deduced rent of each class of land and the market value was calculated by sending officials to each area to assess the prevalent local price on land (Viegas, 1992). Although the landowners were aware of that the evacuation of the land was based on the criterion of the type or, grade of land, they were still confused about the uniformity of the process of evaluation.

Rehabilitation Policy

Even after independence, the Orissa government did not have any well-formulated rehabilitation policy. Just before the plan of constructing the Hirakud Dam developed through five-year plans, the problems of rehabilitation assumed a historical importance. The seriousness of this problem can be observed by the fact that as many as 22,147 families in 249 villages in Orissa besides affecting 36 villages in Madhya Pradesh were affected. In order to ally the fears of the agitated would-be evacuees, the Government of Orissa announced its rehabilitation policy as early as 1946 (Construction of the dam commenced in April 1946). The policy includes both the methods of cash compensation and physical rehabilitation. Each household willing to accept compensation in money

would be paid the value of the land and house lost; and those who are willing to accept land and house in lieu of the land and houses lost would be provided land and houses. The government promised that the resettled villages would be provided with modern amenities like water, electricity and the re-settled evacuees would be vested with the proprietary right on the lands allotted to them (Tripathy and Nanda, 1987).

The total number of colonies established for rehabilitation has been twelve for 28 villages. The total number of households re-settled therein was about 11% of the total households displaced and the total land reclaimed for their rehabilitation was no more than 5% of the land acquired for project from them (Ibid. pp.5).

However, the promises made by the government were not kept in many instances. Besides, many shortcomings in the implementation of rehabilitation policy of the government were pointed out. Some of them are

a) Underestimation of the number of the displaced persons;

b) Inadequate compensation (Rs. 125-200) per acre;

c) Those who are deposited money for land have been asked to take the money back without allotting land;

d) Living conditions in the re-settled colonies are unsatisfactory.

In the context, we may quote the lead article of the Oriya Daily ' Samaj' (27th May 1953), " In the case of Hirakud It was noted that the Government had promised to provide all facilities to the displaced people. In the outskirts of Sambalpur, one model colony was established to resettle the people. Had there been sincere efforts to fulfill the assurance made earlier, there would have been no discontentment among the people. The government had ample time for establishing such colonies. However, It has not been possible to rehabilitate people properly until now (Ibid. pp. 30-31).

Upper Kolab Project (1976-96)

This multipurpose project in Koraput district was constructed to harness the water potentials of River Kolab. The Project was supposed to irrigate 47,985 hectares of agricultural land for kharif and little less for the rabi crop, in addition to 22,267 hectare by life irrigation and generate electricity to a maximum capacity of 240 megawatt. The project began in 1976-77 and was completed in 1984-85 at a cost of Rs.160 crore (The original estimate was Rs.16.4 crore). The catchment area at dam site is 1630 square km.

It is a straight masonry gravity type with length of 630.5 meter and maximum height of 54.50 meter from the deepest bed level.

Submergence

In this project total land submerged is 32,163 acres (Government of Orissa, 1981), out of which 21,870 acres are private land, 6,557.90 acres are revenue land and 189.95 acres are forest. The balance is rivers, nallahs, tanks, roads and etc

Displacement

The total number of families affected due to the construction of this dam, either fully or partially were 13,095 families (50,771 persons) of which 2,127 families (8,830 persons) were dalits, 7,092 families (26,620 persons) were tribal and 3,882 families (15,327 persons) were from other caste (Government of Orissa, 1981).

Rehabilitation & Compensation

The number of families Displaced, Rehabilitated and opted for Cash Grants in Upper Kolab Project are given in Table 2.9.

Table 2.9: Displacement and Rehabilitation in Upper Kolab Project

Caste	No. Of families Displaced	No. Of families Rehabilitated	No. Of Families Preferred to Receive Cash Grant
ST	1,431	195	1,236
SC	435	**30**	405
OC	1,201	**194**	**1,007**
Total	3,067	419	2,648

Source: Govt. of Orissa, 1988,

For rehabilitating the 3,067 displaced families 9,432 acres of land was acquired separately. A sum of Rs. 6,30,23,989 was paid as compensation to the displaced persons and the project affected persons. These exclude the cost of reclamation. Apart from this, Rs. 5,71,81,192 was paid for land and trees and Rs. 58,43,196 for homestead

The project authorities claim that 2,643 (86.17%) of the 3,067 families did not accept land-based rehabilitation and took cash grants amounting to Rs. 3,86,77,820 as compensation. To accommodate the remaining 1,330 families 7,774.68 acres were reclaimed and developed in to 7 camps. Only 424 families were settled in the campus 4 to

1 and **were allotted 675.43 acres of irrigated land, 290.11** acres of **non-irrigated land** and 212 acres of homestead **land.**

Rehabilitation Policy

According **to** Resolution No. 13169 dated. 20th April 1977, Govt, of Orissa, Irrigation **and Power** Department, Land for Land has **been** the objective of this resettlement over and above the payment of compensation money for land and houses, trees and etc acquired for the project. The amount of land is 0.5 acre of homestead land for habitation and either 6 acres of un-irrigated or 3 acres of irrigated land.

In 1989, **it** was amended to provide 5 acres of reclaimed unirrigated land or, 2.5 acres of reclaimed irrigated land. It was further amended **to** 2.5 acres of unirrigated land or 1.25 acre of irrigated land and homestead plot of 20 decimals. In case of non-availability of required extent of land allotment will reduce.

Displaced families are allowed free transport by project authorities for shifting as well as for carrying their house building materials, which they salvage from old sites to the new settlement colony. They are also provided with house building forest material at a concessional rate of 60% of the normal royalty

Wherever land is not available for resettlement of the displaced families or, when the displaced families wish to make their own rehabilitation arrangements, rehabilitation grant of Rs. 14,040 at the flat rate of Rs. 2160 per acre was given (6 acres of unirrigated land + 0.5 acre of homestead land) to be allotted to them. This grant is in addition to the compensation money given to the persons towards acquisition of land and houses etc (This ceiling of Rs. 14,040 was enhanced to Rs. 20,075) in 1989 and farther enhanced in 1990. Common civic amenities like schools, drinking water, wells and tanks, clubhouses, etc, are provided in the settlement colonies.

Upper Indravati Project (1978-Ongoing)

The Upper Indravati Hydroelectric Project is a multipurpose river dam project in Orissa. It is located on the trijunction of Koraput, Nawarangpur and Kalahandi districts. This project initiated with the financial assistance of The World Bank. The reservoir formed by 4 dams and 8 dykes stretches up to an area of 110 square km. and was designed to irrigate 109,300 hectares (later revised to 1.28 lakh hectares in 1994) of agricultural land and generate 600 MW of electricity (Garg, 1998).

Though this project had been approved by the union Planning Commission in 1978 and had obtained an environmental clearance in 1979, full-fledged construction began only after the World Bank's assistance had been obtained in 1985.

Submergence

Due to the construction of this dam, 5448 families (total population of about 17,000) have been displaced from their home. A total of 97 villages (44 from undivided Koraput + 53 from Kalahandi) have been affected, with 65 villages fully submerged. Out of these villages, 31 villages are from Koraput and 34 villages are from Kalahandi. Moreover the Project acquired 32,530.87 acres of land i.e. 17,191.97 acres from Kalahandi and 15,388.90 acres from undivided Koraput district (Govt. of Orissa, 1995). The details of various types of land, submerged are given in Table 2.10.

Table 2.10: Land Submerged under Upper Indravati Project

Land	Kalahandi	Koraput
Private Land	11,619.58 acres	8,193.26 acres
Forest Land	906.34 acres	2983.19 acres
Govt/ Revenue Land	4612.05 acres	4,162.45 acres
Total	17,191.97 acres	15,338.90 acres

Source: Govt of Orissa, 1995.

Displacement

People from the 65 fully submergible villages started evacuation in 1989. 10.68% evacuation took place in 1989, 16.85% in 1990, 21.68% in 1991, 38.02% in 1992. No evacuation and planned in 1993. Still then 9% evacuation took place in that year (RRU, 1995). Out of the total 3,725 families displaced, 1,630 families are ST, 338 families are SC, 1,557 families are general (Dalua, 1993).

Compensation & Rehabilitation

The people in the submersible area were evacuated in four phases. The R & R benefit was extended to the project displaced families in four different packages which is given in Table 2.11

Table 2.11: Rehabilitation Packages for the Displaced People of Upper Indravati Project

Phase	Item	Land- based Program	Cash-based Program	Year of Displacement
I & II	Agricultural Land	5 ac unirrigated or 2.5 ac irrigated	Rs. 18,000	1989 & 1990
	Homestead Land	0.5 ac	Rs. 1,825	
	House Building assistance	House on Govt. land	Rs. 9,500	
III& IV	Agricultural Land	2.5 ac un irrigated or Rs. 1.25 ac irrigated	Rs. 20,000	1991 & 1992
	Homestead Land	0.2 ac	Rs. 3,200	
	House building assistance	House in Govt. colony	Rs. 17,000	

Source: Garg, 1998.

Rehabilitation Policy

As per the resolution of the Govt. of Orissa, that eligible to receive R & R assistance included:

1. A son who is more than 18 years irrespective of his marital status,
2. All physically and mentally disabled persons,
3. Minor orphans who have lost both parents and have nobody to fall back upon,
4. Divorcees,
5. Widows

For resettlement, the oustees were given the option to make their own relocation site without going anywhere far from the submergence area, the people settled around the reservoir. 560 clusters were created and distributed over 19 blocks (Govt. of Orissa, 1995). The government provided the oustees 2.5 acres of non-irrigated or, 1.25 acres of irrigated land. Out of a total of 5271.10 acres of land, was identified for 5343 families for resettlement and rehabilitation in the command area (Behera and Patel, 1997). The displaced persons have chosen cash-based rehabilitation assistance and because of this every eligible persons were given cash to purchase agricultural land, homestead land and for house construction. Further, the project-displaced families in all four phases received a monthly maintenance allowance of Rs.500 for one year after being evacuated from submersible villages (Ravindran, et.al, 1998). Also the R & R policy provided for certain

social infrastructure facilities in the resettlement colonies like drinking water, link road and other civic amenities.

Salandi Project

It is a reservoir on the river Salandi, a tributary of Baitarani near Hadgarh in Keojhar district to irrigate the doabs between Baitarani left Bank and Salandi right Bank. It is located at latitude 21°17' N, 86° 18' E. The catchment area of this at dam site is 260 square km. It was started on 1960-61 and completed in 1981-82. The estimated cost of this dam was Rs.1637.91 lakh. It is an earthen dam of length 640 meters. Maximum height of it is 48.77 meter. There are eight numbers of radial gates of size 12.2 x 6.1 meters.

Due to the construction of the project 569 numbers of families were displaced, out of which 32 families are from general caste, 5 from scheduled caste and maximum numbers displaced from this project were scheduled tribe people i.e. 352 numbers of families.

Kanupur Project

This project is on the river Baitarani, situated in the village Basudevpur of Keonjhar district. It is located at 22°2'33" N of latitude and 85°30'47" E of longitude. The catchment area of this project at dam site is 1560 square km. It was started in 1983.

This is a homogenous dam of Roll filled type. The length is 3247 meter and height is 36.018 meter. It irrigates 24,250 hectare in Kharif season and 33,150 hectare in Rabi season. Cost of the project is 268.02 crore.

The total area submerged due to this project was 2,600 hectare, out of which 235.26 were forestlands. Sixteen numbers of villages were either fully or partially submerged. A total of 8,600 families were displaced from their villages.

Chapter 3

Displacement and Compensation Under Rengali Dam in Orissa

3.0. Introduction

Rengaii River Valley Development Project (RRVDP) consists of two parts and those are (a) a Dam and (b) a Barrage. The main objectives of the project RRVDP are:

i. Controlling flood in the lower deltaic region covering an area of 2600 Sq. Km.

ii. Generating 5 x 50 MW of Hydropower.

iii. Providing irrigation to 2,35,500 ha through 'Samal Barrage' 34 Km downstream of the dam with Left and Right Bank Canal systems by utilising regulated power house.

3.1 Extent of Displacement in RRVDP

Under the RRVDP 302 villages were partially or wholly submerged, displacing 12,298 families consisting of about 52,000 people. The area submerged under the dam and the barrage waters is about 1,09,000 acres. Details of displacement under the dam and the barrage are provided here separately in the following sections:

3.2 Rengaii Multipurpose Dam Project (RMDP)

The RMDP, one of the largest multipurpose river valley projects in Orissa, is built on the river Brahmani. The index map of Rengaii Multipurpose Dam Project is given in the Map-3.1. The total drainage area of the river Brahmani is given in Table 3.1.

Table 3.1: Drainage Area of Brahmani River

States	Area (square km.)
Bihar	15097
Orissa	22620
M.P.	1316

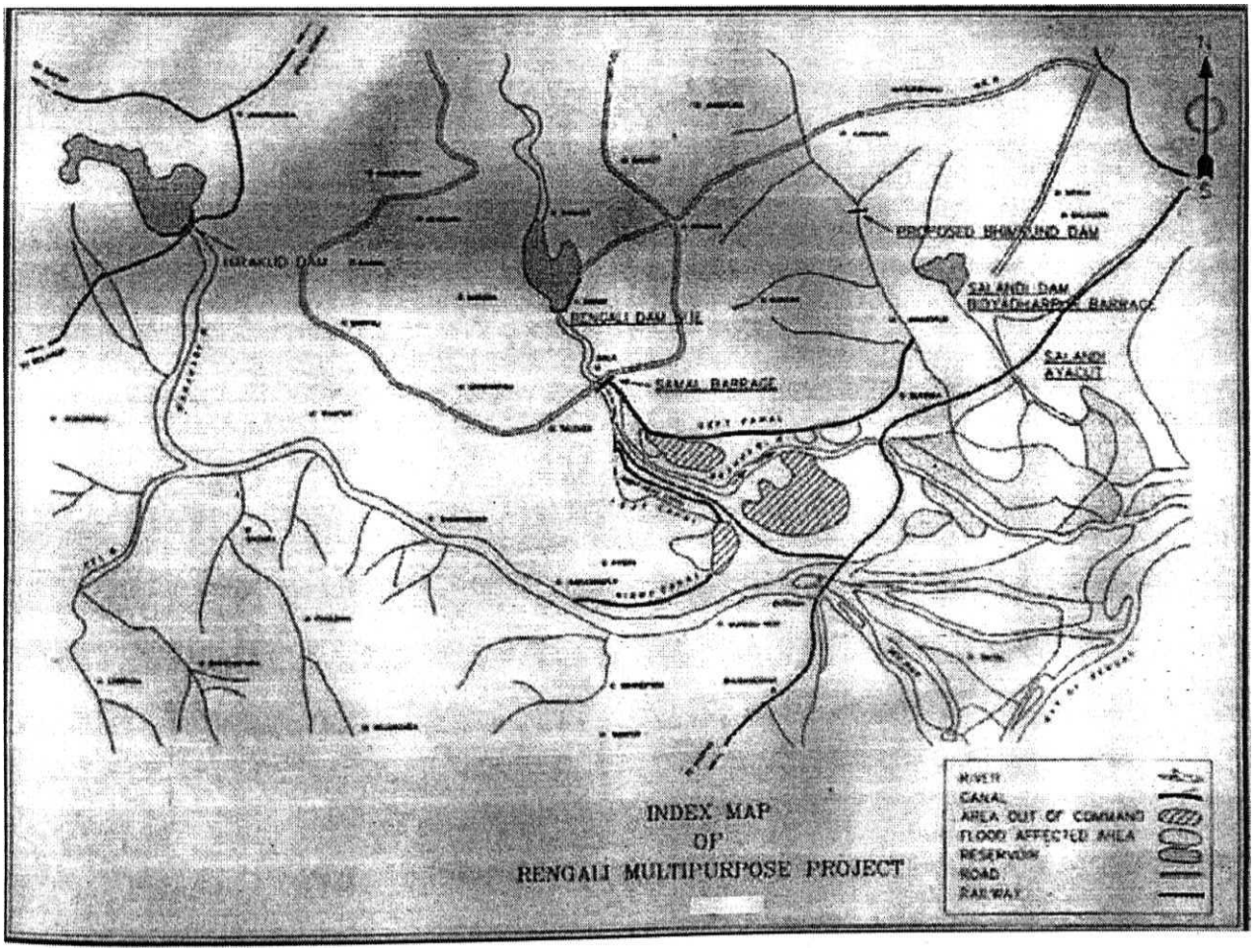
Source: Dalua, 1991.

The dam is located at village Rengaii in the district of Dhenkanal, Orissa at Latitude: 21° 17' 0" N. Longitude: 85° 02' 0" N, Toposheet No. 73/G/3. The catchments area at dam site is 25250 square km. It was commenced in June 1973 (Dalua, 1991). But the foundation stone of the dam was laid on 23rd December 1973 (Nath, 1998). Actual construction started in 1975. Dam was completed in 1985. All works to be completed during 1992-93 (Govt. of Orissa, 2000)

This is a dam of masonry gravity type with a length of 1040 metre at the top and maximum height of 71 meter at the deepest bed level. There are 24 number of radial crest gates of size 15.5 metre x 14*8 metre to discharge maximum probable flood of 55,550 cumecs has been routed to 46,960 cumecs. Top level of the dam is 128.5 metre (Dalua, 1991). Gross capacity of reservoir at Full Reservoir Level is 4400 million cum. live storage capacity at Full Reservoir Level is 3452 million cum.

The main purpose of the dam is flood control since after joining with a branch of river Baitarani and forming a net of branches in the delta it creates flood havoc and becomes the river of sorrow for major part of the Cuttack and Puri delta area. Rengali dam through which maximum discharge of 55,550 cumecs is probable during any flood, has been able to reduce to 46,960 cumecs out of it due to construction of 24 redial crest gates. Maximum water level in the dam is 125.40 metres, full reservoir level is 123.50 metres and dead storage level is 109.7 metres. It has been able to moderate its flood over an area of 2,500 Sq. Km. Brahmani and Baitarani delta. Next priority for Rengali Dam is power generation with installed capacity of 250 MW.

Map-3.1: Index Map of Rengali Multipurpose Dam Project



3.3 Extent of Displacement under the Rengali Multipurpose Dam Project

Land for the dam was acquired under the Land Acquisition Act 1894, under which government can acquire any type of private land for 'public purpose'. As a result of the construction of the dam, 263 villages were either fully or partially submerged. The details are as follows:

Table 3.2: Villages Submerged in Rengali Multipurpose Dam Project

Sl.No	Village Type	Numbers
1	Fully submerged villages	116
2	Partially submerged villages	123
3	*Hardcore*	24
4	Total	263

Hardcore village means the villages, which submerged subsequently.
Source: Govt of Orissa, 2001.

.3.3.1 Displaced Households and Population

A total of 11,289 families were displaced under Rengali dam. It involves a population of 46,570 that includes different communities of people like Scheduled Tribe, Scheduled Caste, Other Backward Caste and General Caste. The details is given in the following table:

Table 3.3: Displaced Households and Population in RMDP

Sl.No	Community	Number of Families	Population	Percentage
1	Scheduled Castes	2,100	8,475	18.2
2	Scheduled Tribes	1,328	5,687	12.2
3	Other Castes	7,861	32,408	69.6
4	Total	11,289	46,570	100.0

Source: *Govt. of Orissa, 1988.*

Out of a total population of 46,570 families displaced in Rengali dam, 18.2% are scheduled caste, 12.2% are scheduled tribe and rest 69.6% are other castes.

3.3.2 Area Submerged

The area, which was submerged due to Rengali dam project, is given below in Table 3.4 .

Table 3.4: Area Submerged under Rengali Dam

SLNo	**Land**	Acres
1	Rayati Land	34,335.67
2	Government and Forest Land	65,382.10
Total		99,717.77

Rayati land is the private land over which there is legal ownership.
Source: *Govt. of Orissa, 2001.*

Following social public institutions were submerged under the dam. The following Table 3.5 gives the details of the submergence of the public institutions:

Table 3.5: Important Public Institutions Submerged

Sl.No	Public Institutions	Numbers
1	High Schools	06
2	M.E.Schools	20
3	Primary Schools	88
4	Primary Health Centres	02
5	Recognised Temples	11
6	Police Station	01

Source: Zone Office, Rengali Dam site (I), Deogarh

In addition, the following private properties were also submerged under Rengali Dam, which is presented in the Table 3.6

Table 3.6: Private Property Submerged under Rengali Dam

SLNo	Property	Units Submerged
1	Houses	17.93 Lakh Sq.ft
2	Tanks	762 acres
3	Wells	430 numbers
4	Trees	42,600 numbers

Source: Zone Office, Rengali dam site (I), Deogarh.

3.4 Samal Barrage

Samal barrage at a down stream distance of 34 km. from Rengali dam has been constructed with a view to provide irrigation to about 3.72 lakh hectares. The barrage is 560 metre long with provision for road and bridge over it. It picks up trail race discharge of Rengali Power House for irrigation. It has its own provision for reservoir to store water and to discharge it through its canals. The left main canal will irrigate 1.38 lakh hectares in Dhenkanal, Cuttack, Keonjhar and Balasore districts. Similarly the right main canal

will irrigate 0.70-lakh hectare in Dhenkanal and Cuttack districts. In the next phase it is proposed to irrigate another 1.64 lakh hectares in Keonjhar and Mayurbhanj districts by extension of left main canal beyond Baitarani upto Budhabalang River. Total cost of Rengali dam with PowerHouse and generators come to Rs. 232.37 crores. In addition, an estimated cost of Samal Barrage with its canals in phase I and II is Rs. 164.00 crores.

Though construction of Samal Barrage was started long back from the year 1978, due to inadequate budget allotment it was completed during 1994. That too, some finishing works of barrage, Left and Right afflux bunds and down stream protection works were still to be done. Execution of Left Bank Canal from 0 to 30 Km and Parjang Branch canal was also started simultaneously in different reaches, but were left in half done stage due to paucity of funds (Govt. of Orissa, 2000).

3.5 Extent of Displacement in Samal Barrage

Due to the construction of Samal Barrage, the total numbers of villages submerged were 39, out of which, 07 villages submerged fully and 32 villages submerged partially.

3.5.1 Displaced Households and Population

A total of 1,009 families were displaced under Samal Barrage. It involves a population of 2,516 that includes different communities of people like Scheduled Tribe, Scheduled Caste, Other Backward Caste and General Caste. The details is given in Table 3.7.

Table 3.7: Displaced Households in Samal Barrage

Sl.No	Community	Number of Families	Percentage
1	Scheduled Castes	81	8.02
2	Scheduled Tribes	10	1.0
3	Other Castes	918	90.98
4	Total	1,009	100.0

Source: Govt of Orissa, 2000

Out of a total of 1,009 families displaced in Samal Barrage, 8.02% are scheduled caste, only 1.0% are scheduled tribe and rest 90.98% are other caste.

3.5.2 Area Submerged

Land for this project is taken from different sources like from private individual, government, forest **and** etc. The details are **in Table** 3.5

Table 3.8: Acquisition of Land in Samal Barrage

Category of Land	Extent of Land Coming Under Acquisition (acres)	Extent of Land Acquired so far (acres)	Balanced Land to be Acquired (acres)
Private	5393.50	4657.75	735.75
Government	3007.90	3007.90	---
Forest	475.70	475.70	
Total	8877.10	8141.35	735.75

Source: Government of Orissa, 2000.

Our entire research confined to the Dam only. In this work the study on the Samal Barrage has not included. So henceforth whatever has discussed in the study is exclusively related to the dam only.

3.6 Displacement, Dispossession and Compensation

Development projects may benefit some people, but it begets social disruption and undesirable consequences for some sections of the population. Displacement of population is the best example of the disruptive changes that may occur as by-products of such development projects (Cernea, 1990). This is usually referred to as development-induced displacement[1] (Asthana, 1996).

Those people who generally bear the cost of development projects are known as 'project affected people'. All project affected need not experience similar losses as others, some in addition to their livelihoods may lose their homes, while some may experience partial loss. Those falling in the former category may have to physically relocate themselves. They are referred to as 'resettlers' in most other countries and 'oustees' in India (Cernea, 1996a).

At present, there is only one law, which caters to the regulation of displacement and rehabilitation of persons displaced by development projects. The basic act, which has guided the resettlement and rehabilitation of displaced people in India, is the Land Acquisition Act 1894. Under a sub act 4(1) of this act, the government is empowered to acquire any land for 'public purpose' and pay cash compensation determined by it a

[1] Development-induced displacement however differs from displacement caused by disasters (Guggenheim and Cernea, 1993).

prescribed procedure. At the time when the law was enacted by the colonial government for the purpose of acquisition of land by the government for **'public purpose',** at that time public activity was confined to acquisition of small pieces of land either for roads, public buildings and housing colonies. The act of 1894 was amended in 1984 but there had hardly any substantial change in the scope of the act. The basic feature of the act is to compensate a person who loses land during the process of acquisition of land. Here, a clear distinction has been made by categorizing the people into the following different categories:

i) Household possessing land with legal right;
ii) People possessing land without legal right;
iii) Tenant households;
iv) Landless households.

The Land Acquisition Act of 1894 caters only to the first category of people so far as compensation is concerned and has nothing to do with the rest of the people. Let us consider the different types of household and the kind of problems faced by them in obtaining compensation:

(i) ***People possessing land with legal right***

These people fall under the compensation criteria. All these people get compensation according to certain norms in the Land Acquisition Act. The norms are the determination of market value of the land.

(ii) ***Households possessing land with disputed legal rights***

These are the people, who have land but do not have legal right. One of the basic causes of this is oral unregistered land transfer[2]. Due to this problem, government considers the previous owners of the lands for the payment of compensation. The real owner, who doesn't have legal right to the land face problem.

(iii) ***Household possessing lands without legal rights***

It is generally the wasteland or government land nearer to the land of people. Some people cultivate on this type of land for years together. In some cases, farmers have

[2] Oral unregistered land transfer is the selling of land by taking the amount of the land without any legal procedure.

been paying **land revenue over a period of time but did not** possess any **document of** ownership (Reddy, **1992). This practice is very common in the hilly tract of land** especially **on the encroached land. These people do** not **get compensation on this type of land.**

(iv) ***Tenants***

These categories of people generally take land from other landed people on lease basis and cultivate on it. Depending upon the contracts, they keep some produce of the cultivation and give the remaining portion to the owner. Due to displacement, they loose their occupation because in the new place their chances of obtaining the land on lease are less. The act is completely silent on the compensation to be paid to these categories of people.

(v) ***Landless people***

These people are completely left out of the purview of compensation. Most of these are the tribal people. They are severely affected by displacement because they loose their livelihood. These people work for the landed people but the so-called development creates a situation as a result of which they loose their livelihood. These projects have destabilized the material base of the tribals and have dethroned them from their habitats and marginalized them.

Thus capital penetration for the matter, "development" has not integrated the marginalized section into capitalistic framework but has alienated them from it (Nath, 1998). The oustees being the 'victims' of development, through loss of their livelihood and sustenance economy, are forced to depend on market economy for survival. Their entry into direct market relations without necessary capital and skills, places them at a disadvantage from the very beginning. Displacement, thus usually leads to pauperization and marginalization (Singh, 1997).

- In recognition of these drawbacks, although not made legally binding, land compensation was introduced as an alternative in 1984 amendment to the LAA. Land compensation, is deemed by many researchers to be superior to cash compensation since land is a lifelong, sustainable, inheritable livelihood producing asset as opposed to cash, which is a one time payment (Garikipati, 2000).

The most challenging of these is perhaps identifying comparable tracts of land both interms of quantity and quality. This is especially so since land is a limited and highly valuable asset in India and the only land available in adequate quantities is of inferior variety. And due to unavailability of land people get land in different small patches. For example, in Rengali dam, in a particular village, a man has got land in 10 different patches, nearer to the village on the average of 5 km distance.

3.7 Objectives of Compensation

Compensation, intends to achieve two basic objectives and they are (i) to restore equity; (ii) to focus on the true losses suffered by the victims (Garikipati, 2000). Equity is defined as a state of being where the necessities of life are distributed in an egalitarian manner in a society (Singh et. el., 2000). Equity is always measured between two individuals or groups of people in terms of the difference between them or the gaps in their incomes, resource levels and quality of life. In the context of dam, whether the displaced people are pareto superior or not due to construction of the dam due to the construction of the dam.

The term Equity can be divided into two types. They are (i) vertical equity and (ii) horizontal equity. In vertical equity the affected are compensated on the basis of their losses but in horizontal equity the people are treated as equals with each other and compensated equally of their losses. Both the concepts have their advantages and disadvantages.

The concept of vertical equity has Pareto appeal. When the affected are compensated on the basis of their losses, provided these losses are accurately identified, earlier standards can be restored, thus leaving no one worse off than before. Nevertheless to implement this concept the necessity to identify the true losses of the people arises which can be a very hard, troublesome and demanding task. The concept of horizontal equity has an advantage in this aspect but it can have serious social and economic implications for the displaced community, especially that society is not equitable. Leaving the community at par with each other it threaten the previous institutional arrangements, networks A combination of these two concepts can in fact to help obliterate the problems. The notion of 'mixed equity' can be understood as one where the affected are compensated in proportion to their losses and at the same time efforts are made to raise the standards for the poorest of the lot.

Irrespective of the concept of equity adopted by the project authorities, compensation must also aim to reflect the true losses incurred by the displaced people. In the case of vertical equity it must reflect the true losses, while for horizontal equity it must reflect losses incurred by the community at large. In both cases, however, the true costs incurred by the affected are not publicly known. It is private information, known only to those affected. This is the reason why, one way or the other, they must be relied upon to reveal this information. The affected, moreover, must be asked for this information in ways that induce them into revealing their true losses.

Broadly speaking there are two main incentives for providing compensation and they are (i) the need to justify a project; (ii) the political and economic prudence in doing so (Garikipati, 2000). Provision of compensation in the case of development-induced displacement has a strong Pareto argument. When pre and post displacement scenarios are compared, the project can be justified only if the latter is Pareto superior to the former.- In other words, a Pareto-optimal situation in case of development-induced displacement is when the gainers benefit from the project even after having compensated the losers so that none is worse-off than before. Compensation can then be perceived as a transfer made to the displaced people by the beneficiaries of the project.

3.8 Detailed Procedure of Land Acquisition in Rengali Dam

At first the Engineering authority of Rengali Dam submitted the ROR[3] and land plan (map) at the zone office and the people of the zone office tallied the ROR with the ROR of Tahasil Office for a check. After this, the staff went for field enquiry. After detailed checking (i.e. whose record, the name of the owner, trees on the land, ponds, wells and etc.), the land schedule with the land plan was sent to the LA Office, Sambalpur for 4 (1) notification[4]. After this, the awardees were notified for 9 (3) objection[5]. In the mean time they have prepared the 6 (1) paper. After sending the 6 (1)

[3] ROR is record of right

[4] **4 (1) notification** means whenever it appears to the (appropriate the government) in any locality (is needed or) is likely to be needed for any "public purpose" (or for any company), a notification to that effect shall be published in the Official Gazette (and in two daily newspaper circulating in that locality of which at least one shall be in regional language), and the Collector shall cause public notice of the substance of such notification to be given at convenient places of the said locality.

[5] **9 (3) Objection: Notice to persons interested:**

paper, the Amin of the corresponding villages went to the village to fill the Yadast Form and in some cases they put camps at a particular place and called the people to those camps. The Amins reported about the land record of the submerged people, plot number, area, legal landholder, legal land holding, forceful owner of the land and the mode of compensation through the Yadast Form. The Revenue Inspector in the presence of the zone officer had verified again all those things. After this, the estimate, which was sent earlier, the sanction order of the same had come from the government. Then the Land Acquisition Officer had declared the amount of money to be distributed among people (i.e. who would get how much). The zone officer maintained all details (i.e. the amount to be distributed among the awardees) in Registrar No. 10. After this, the bill was sent to the Land Acquisition Officer, Sambalpur and he again sent the bill to the Financial Advisor, Rengali. After passing the bill, the sanction amount was sent to the Land Acquisition Officer, Sambalpur and Land Acquisition Officer, Sambalpur sent the money to corresponding Land Acquisition Officer of different zones. Then the Land Acquisition Officer fixed the date for payment and gave the 12 (2) notification[7] to the awardees. On that particular date, according to the convenience the LAO distributed the compensation among the people in that particular village or particular camp. The amount was given to the people through a CC form. They maintained a registrar for this in the office as its

(i) The Collector shall cause public notice to be given at convenient places on or near the land to be taken, stating that the government intends to take possession of the land, and that claims to compensations for the interests in such land may be made to him.
(ii) Such notice shall state the particulars of the land so needed and shall require all persons interested in the land to appear personally or by agent before the Collector at a time and place therein mentioned (such time being earlier than 15 days after the date of publication of notice), and to state the nature of their respective interests in the land and the amount and particulars of their claims of compensation for such interests, and their objections (if any) to the measurement made under section 8. The Collector may in any case require such statement to be made in writing and signed by the party or his agent.
(Hi) The Collector shall also serve notice to the same effect on the occupier (if any) of such land and all such persons known or believed to be interested therein, or to entitled to act for persons so interested, as reside or have agents authorized to recover service or their behalf, within the revenue district in which the land is situated.
(iv) In case any person so interested resides elsewhere and has no such agent, the notice shall be sent to him by post in letter addressed to him at his last known residence, address or place of business.

[6] Amin is the village level official of land revenue department.

[7] Award of Collector (LAO) when to be final
(i) Such awards shall be filed in the collector's office and shall, except as hereinafter provided, be final and conclusive evidence, as between the collector and the persons interested, whether they have respectively appeared before thecollector or not, of the true area and value of the land, and the apportionment of the compensation among the person interested.
(ii) The collector shall give immediate notice of his award to such of the persons interested as are not present personally or by their representatives when the award is made.

proof. **At the time** of 6 (1) estimate, the Land Revenue of 25 years of **the** rayati land of the people **had** also been sent and the amount in LR head also **had** come with the compensation of **the** people. The LAO the deducted the amount of LR from the compensation amount and deposited it in the nearest treasury in LR favor. **The amount,** which was not taken by the displaced people, was deposited in the treasury.

3.9 Land Acquisition Award

3.9.1 Land classification

Agricultural land in the submersible villages were classified in to seven different categories for the payment of compensation, taking in to consideration the different factors like geographical situation, quality and level of the land, productive capacity, moisture retention capacity and etc (Govt. of Orissa, 1978). The classification of land given as are:

i. Bahal or Sarad(l)
ii. Berna or Sarad (2)
iii. Mal or Sarad (3)
iv. Goda Aul or Goda (1)
v. Goda Doyam or Goda (2)
vi. Goda Soyam or Goda (3)
vii. Patita

Bahal or Sarad (1) was the low paddy land. This land was very much favourable for paddy cultivation as it keeps water for a longer time. Berna or Sarad (2) was medium paddy land and then comes the Mal or Sarad (3), which was upland for paddy cultivation. According to the productivity Mal was the least among these three varieties of land. So far as Goda lands were concerned, it fall under 3- principal categories- Goda Aul, Goda Doyam and Goda Soyam. In order of productivity Goda Aul comes first followed by Goda Doyam and Soyam. These types of lands were generally meant for ravi crops. Unlike paddy, no uniform crop was grown in these lands. The last category of land was Patita, which was wasteland. These types of lands were unfit for growing any crop (Govt. of Orissa, Land Records of Displaced People, Zone Office, Rengali Dam Site (I), Deogarh).

3.9.2 ***Land valuation***

According to the land acquisition act 1894, land can be compensated according to its market value, which is purely based on the sale deed of the land. In case of Rengali dam oustees, sale deed was not available. Hence the second best course for this purpose was to therefore base upon the market value of the annual yield of paddy. In this case also reliable figures of annual yield of paddy for different types of land were not available. Figures of normal annual yield for different type of land supplied by Bureau of Statistics and Economics were to be adopted to fix up the market value. The District Statistical Officer, Sambalpur has furnished normal annual yield of paddy in respect of three types of land- high, medium and low. According to the present classification, there are six types of agricultural lands. These are Jala Aul (Sadar and Kamadar), Jala doyam (Sadar and Kamadar) and Jala Soyam (Sadar and Kamadar). It was decided in a meeting held on 23.4.1975, presided over by the RDC (ND), Sambalpur that the sub categories of lands should be eliminated for determining the present market value as no yield figures could be furnished by the DSO. Thus the agricultural lands in these villages fall under three principal categories- Jala Aul, Doyam and Soyam. These are in order correspond to low, medium and high types of land. It has already been pointed out that the DSO, Sambalpur has not been able to furnish village-wise figures of annual yield rate of paddy in respect of these three types of land, instead he had supplied the annual yield rate of paddy of strata. Each stratum consists of some contiguous C.D.Block. In Deogarh subdivision all the submersible villages come under C.D.Blocks Naikul, Reamal and Barkote. Naikul forms a separate stratum. Reamal and Barkote together form another stratum. The normal annual rates of yield of paddy for each stratum in respect of high, medium and low lands are furnished below:

It may be seen from the figures that Reamal and Barkote stratum has a higher rate of annual yield followed by Naikul and Pallahara. The natural corollary is that the lands in Reamal, Barkote block areas will fetch higher market price than the villages in Naikul and Pallahara block area. All the strata adjoin each other, the only dividing lines being river Brahamani. Geographical features and fertility are mostly similar. It is therefore reasonable to presume that the intrinsic worth of all the lands in these strata is the same. Therefore in fairness, there should not be any difference in market value for land in

different **villages under submersion. Table 3.9 shows the normal annual** yield rate of paddy as **furnished by** the District Statistical **Officer, Sambalpur.**

Table 3.9: Strata-wise Normal Annual Yield

Name of Stratum	Normal Annual Yield in Quintals per Acre		
	High	Medium	Low
Naikul	5.01	5.70	6.60
Reamal & Barkote	5.59	6.49	7.00
Pallahara	3.89	4.36	8.86

The market value of high, medium and low lands that will hold good for the submersible villages may be calculated by taking average of the above normal yield rates of paddy for all three strata in respect of the above principal types of land and to adopt the same as the normal yield of paddy for these villages in respect of the three principal types of land. The average annual yield of paddy in high, medium and low lands come to 4.83, 5.52 and 6.48 quintals per acre respectively. Based on this, the net annual income from one acre of land of high, medium and low categories, capitalised for a period of 16 years comes to Rs. 4030.08, Rs. 4605.92 and Rs. 5406.88 paisa respectively. So the market value of high, medium and low land for these villages may if approved be fixed at Rs. 4050, Rs. 4650 and Rs. 5450 per acre respectively. In working out the net annual income, the cost of paddy has been calculated at the rate of Rs. 119 per quintal according to the rate furnished by the DSO, Sambalpur. Cost of straw has been fixed at the rate of Rs. 20 per quintal. The weight of straw has been fixed as 1.5 times the weight of paddy per acre. 65% of the gross income has been deducted towards cost of cultivation rent and marketing expenditure etc. as the later rate has gone up. Table 3.10 shows the working out of market value for different types of land:

Table 3.10: Calculation of the Market Value of Annual Yield of Paddy

Type of land	Normal average annual yield of paddy in quintals per acre	Total cost of paddy @Rs. 119 per quintal	Weight of straw taking 1.5 times of the weight of paddy in quintals per acre	Total cost of straw @ Rs.20 per quintal	Gross annual income per acre (Rs)	Net annual income per acre after deduction of the gross annual income towards cost of agriculture rent (65%)	Net annual income per acre capitalised for 16 years (Rs)
High	4.83	574.77	7.245	144.90	719.67	251.88	4,030.08
Mediu m	5.52	556.88	8.28	165.60	822.48	287.87	4,605.92
Low	6.48	771.12	9.72	194.40	965.52	237.93	5,406.88

Source: Govt. of Orissa, 1983.

GODA Land

According to the above referred decision, the Goda lands in these villages fall under three principal categories- Goda Aul, Goda Doyam and Goda Soyam. In order of superiority, Goda Aul comes first followed by Goda Doyam and Soyam. No statistics as to the annual yield of crop grown in these types of land are available. Unlike paddy land no uniform crop is grown, in such lands. It is therefore difficult to fix up the present market value of such lands on the basis of annual produce or yield. In these circumstances there is no other alternative but to reduce the present market value of such lands with reference to the proposed market value of Jala lands (Paddy lands) stated above.

It is generally accepted that that Goda Aul is inferior to Jala Soyam type of land (Lowest type of paddy growing land). The market value of one acre of Goda Aul land is decided by less than the market value of one acre of Jala Soyam land proposed to be fixed at Rs.4050. The following rate per acre as the market value for each type of Goda land is proposed for these villages.

Table 3.11: Amount Fixed for the GODA Land

Sl.No	Land Type	Amount Fixed (Rs)
1	Goda Aul	3,000
2	Goda Doyam	2,500
3	Goda Soyam	2,000

Source: Govt. of Orissa, 1983.

GHARABARI Land

Gharabari Land is nothing but the homestead land. It is a well-acknowledged principle that the market value of Gharabari land is equal to the market value of best type of any sale instance for Gharabari land. Jala Aul type of land is the best type of agricultural land in these areas. The market value of per acre of Gharabari type of land was fixed at par with that of the value of per acre of Jala Aul land, which was Rs.5450 per acre.

PATITA

By its very definition this land is unfit for growing any crop. Rs. 500 has been fixed as market value for one acre of this type of land.

3.9.3 Valuation for House and other Immovable Assets

Apart from land, the immovable property also got submerged due to the construction of Rengali Dam were house, house site, wells, tanks and etc. The style of construction of a house generally differs from person to person as a result of which it is difficult to reach a fixed price for this. Government has fixed the price of per acre of Sarad (1) i.e. the best variety of land for house site. In this dam compensation for houses, wells and tanks have given at the following rates:

Table 3.12: Valuation for Houses

SLNo	**Type**	**ITEM**	**Rate per square meter**	
			Room rate	Varandh rate
l	Type-I	C.B.Brick in Cement mortar wall, Roof- Naria tile and Cement floor.	—	—
2	Type-II	Mud Wall and Thatched Roof	Rs. 54.96	Rs. 23.48
3	**Type-III**	Mud Wall and Naria tile	Rs. 62.30	Rs. 29.10
4	Type- IV	Wall- C.B.Brick in mud mortar, Roof- Thatched	Rs. 101.05	Rs. 26.90
5	Type-V	Wall- C.B.Brick in mud mortar, Roof- Naria tile	Rs. 107.00	Rs. 31.25
6	Type- VI	Wall- Wattle and doub, Roof- Thatched	Rs. 49.87	Rs. 19.43
7	Type- VII	No wall, Thatched roof over bullah post	Rs. 26.40 (total plinth)	Nil
8	Type-VIII	No wall, Naria tile roof over bullah post	Rs.31.70 (total plinth)	Nil
9	Type- IX	Wall- Spilt bullah and thatched roof	Rs. 28.22 (total plinth)	Nil
10	Type-X	Wall- Spilt bullah and naria tile	Rs. 32.50 (total plinth)	Nil
11	Type-Xl	Building with slab roof or A.C. Sheet roofing	Rs. 322.80 (total plinth)	Nil
12	Type- XII	Brick or stone compound wall with mud mortar	Rs. 24.78 (total plinth)	Nil

Source: Zone Office, Rengali Dam Site (I), Deogarh

For tanks and wells, the following rate was fixed:

1. Tank (acre): Rs. 12,623
2. Well (a) Kucha (made of clay) well: Rs. 106
   (b) Pucca (cement mortar) well: Rs. 1,053

As regards pucca wells, separate rates for stone masonry wells have been allowed at Rs. 51 per square metre where as for ordinary wells Rs. 5 per square metre has been approved for the convenience of the displaced families.

3.10 Arbitrary Valuation and Compensation

Thus, the entire process of arbitrary valuation resulted in low compensation, which is not even equal to $1/4^{th}$ of the property acquired by the government. In this situation the only alternative left to the people was to accept the compensation, however low it was. There is another point to be noted here. According to one of the provisions of the LA Act the interested party must accept the compensation under protest, even if the land is under valued by the LAO. If the compensation is accepted under protest then the case can be referred to the court by the LAO. And the court can enhance it if it feels that the value given by LAO is unjust. The fact is that the provisions of the Act are not known to the people. However, a few knowledgeable persons took their compensation under protest and sought relief as per the provision of the Act. This opened up a new chapter in the process of land acquisition and payment of compensation (Reddy, 1992).

Any compensation case will be referred to the court only when the compensation is accepted under protest and a request is made by the concerned party to refer it to the court within the stipulated time. As most of the displaced people of Rengali Dam project were ignorant of the law, they did not do so. Here in this project, one can count the number of persons took compensation under protest and requested the LAO to refer the case to the court. Some 887 cases have been referred to the sub-judge, Deogarh, out of which final judgment have been passed finally in 227 cases. 72 cases have been referred to the High Court, Orissa and 210 cases are before the Revenue Division Commissioner and the District Judge, Sambalpur in the form of appeal. 378 cases are with the Sub-judge in the form of final hearing after which the displaced families will proceed as they decide (Biswal, 1994). Here some examples are cited where the people had gone to court and got enhanced compensation.

This is a reference under section 18 of LAA for determination of proper compensation[8]. Land of the petitioners in village Kadalipal was compulsorily acquired

[8] The above case is out of the certified copy of judgment in L.A Case No. 13/94 passed by Civil Judge, Senior Division, Deogarh on 13-2-1995

for Rengali Dam Project. In absence of contemporaneous documents of sale transaction the Land Acquisition Collector computed the market value of the land by capitalizing 16 times multiple of the net annual yield. The valuation of the trees was also made as per guideline prescribed by the D.F.O., territorial, Deogarh. The Executive Engineer Rengali Dam Reservoir Division, Khamar had computed the market value of the house. The same was adopted by the Land Acquisition Collector. The Land Acquisition Collector tendered such amount along with the statutory benefit like solatium 12% extra to the petitioners. The petitioners were dissatisfied because of this.

The petitioners claimed that their land was fertile and they should have got compensation @ Rs.20,000, Rs. 15,000 and Rs. 8,000 per acre of Class- I, II, III land and Goda land respectively. Petitioner claimed Rs. 50,000 for their house. They claimed higher market value for the trees.

In order to substantiate the case petitioners had examined two witnesses and opposition party (government) did not line to adduce any evidence. These witnesses gave evidence that in rainy season the petitioners were getting 18 quintals, 15 quintals, 12 quintals, 7.5 quintals of paddy from their class- I, II, III land and Goda land respectively, and further producing 3 quintals of mung/ mustard per acre of jala land. The cost of cultivation was half and rate of paddy was Rs. 150 per quintals and the rate of mung/ mustard was Rs. 600 per quintals. On computation the net annual yield of such land comes to Rs. 2250, Rs. 2025 and Rs. 1800 in respect of class- I, II and class- III land respectively. Capitalizing with 16 times multiple the market value of class- I, II and III comes to Rs. 36,000, Rs.32,400 and Rs. 28,800 respectively though petitioners demanded Rs. 20,000, Rs. 15,000 and Rs. 10,000 respectively for such land. Similarly, the further evidence is that the petitioners were also raising potato and getting around 75 quintals per acre valued at Rs. 100 per quintals. On computation the market value of the Goda land comes to Rs. 85,000 though the demand was for Rs.8,000 per acre. It is more than ten fold.

Similarly they gave evidence of getting Rs. 600 per mahuwa tree, Rs.60 per banana tree, Rs.200 per guava. On capitalization the value of the trees appears to be disproportionate to their claim. During scrutiny of the valuation of the land, it is found that the Land Acquisition Collector had to compute the market value of the land basing

upon the data on net annual yield furnished by the D.S.O., Sambalpur. The D.S.O., Sambalpur had furnished the annual yield of the three strata namely Naikul, Reamal and Barkot and Pallahara. It is noted by the Land Acquisition Collector in his justification sheet that:

"In Deogarh Sub-Division all the submersible village comes under C.D.Block Naikul, Reamal and Barkot. Naikul forms a separate stratum, Reamal and Barkot together form another stratum".

It is further noted by the Land Acquisition Collector that:

"It may be seen that from the figures that Reamal and Barkot stratum has a higher rate of annual yield followed by Naikul and Paliahara. The natural corollary is that the lands in Reamal, Barkot blocks will fetch higher market price than the village in Naikul and Paliahara block area".

After mentioning such, the Land Acquisition Collector observed that

"All the strata adjoin each other, the only dividing line being river Brahamani. Geographical features and fertility are mostly similar. It is therefore reasonable to presume that the intrinsic worth of all the lands in these strata is the same and therefore, in fairness, there should not be any difference in market value for land in different village under submersion and the market value of high, medium and low lands that will hold good for the submersible villages may be calculated by taking average of the above normal yield of paddy for all three strata in respect of the above principal types of land and to adopt the same as the normal yield of paddy for this village in respect of the three principal types of land".

His view is absurd and unreasonable. The market value of the land varies from place to place. The market value of the land with higher yield is much more than the value of land having low yield. He should have computed the market value of the land basing upon the annual yield of paddy of the concerning stratum i.e. Reamal and Barkot stratum in which the acquired land was situated. By taking average the market value of land was low. Computing the market value of the land using normal yield of Reamal and Barkot stratum with cost of paddy @ Rs. 154 and rounding it to the fifties as done by the Land Acquisition Collector, the market value of Jala-1 (Low), Jala-2 (Medium) and Jala-3 (High) comes to Rs. 7250, Rs. 6800, Rs. 5800 respectively. Adopting similar principle the value of Goda- 1,2 and 3 lands is fixed at Rs. 4000, Rs. 3500 and Rs. 3000 respectively. The rate of Gharbari is equivalent to Jala-1 land.

Computing the market value of the acquired land in the revised rate it came to Rs. 28,054. The petitioner had received Rs. 3804 for the trees and Rs. 15,769 for the house.

Therefore the market value of the land and trees and house came to Rs. 47,627. The award had been computed in the following manner, which is presented in Table 3.13.

Table 3.13: Computation of Compensation

Sl No	Particulars	Amount (Rs)
1	Market Value	47,623
2	12% extra over market value	8,096
3.	30% solatium	14,288
4	Revised award	70,901
5	Original award	64,464
6	Extra amount to be paid	6,437

Hence the court had ordered to give the excess compensation of Rs. 6,437 to the petitioners along with interest U/s. 28, of L.A.Act.

In the following *another example*[9] is there where the petitioner got money for tress, apart from land and house from the court.

The case of the petitioners, in a nutshell, is that the government of Orissa acquired Ac.3.33 decimals of land from village Gothmada under Barkot police station for the purpose of Rengali Dam project under 4(1) notification dated, 16-8-1987 and Rs. 48,354 was awarded for their land, trees and house, which they received under protest. The amount of compensation was determined basing on the statistical report of the L.A.Zone Officer. The further case of the petitioner is that after receipt of 9 (3) of LAA they claimed higher compensation on the basis of net annual yield multiplied by 20. But the L.A.Zone Officer did not hold any independent enquiry and called upon them to receive the compensation. The petitioners further mentioned in their petition that they were growing paddy and thereafter mung on their acquired land and were getting 20 quintals of paddy and 4 quintals of mung per acre. So they claimed the valuation of the land per acre should have been Rs. 35,000. The petitioners further mentioned in their claim petition that their acquired house was highly under valued and the proper value should have been Rs. 1,50,000 and their standing acquired trees were also highly under valued and the proper valuation per mango tree was Rs. 5000, per mahul tree Rs.5000 and for other trees i.e. asan, sal, kendu, sajana, orange, lemon were Rs.1000 each. The compensation

9 This case is out of the certified copy of judgement in L.A.Case No. 52 of 1999 of the court of the Civil Judge, Senior Division, Deogarh, dated 4-5-1999.

awarded to them had no reasonable basis. Hence, they requested for higher compensation before the honorable court.

According to the witnesses, out of an area of Ac.3.33 decimals, 37 decimals were homestead land and rests were cultivable land. All the lands were class-I variety of lands having assured irrigation facilities from nearby the village KatalO and Pond. According to them in the year of acquisition the market value of the paddy per quintal was Rs. 250 and mung per quintal was Rs.1000. So on the basis of net annual yield they claimed compensation Rs. 35,000 per acre.

Anyway the government fixed Rs. 150 as the price of per quintal of paddy and Rs. 450 per quintal of mung. On that basis the petitioners got Rs. 2370 from Ac.2.96 in first crop and Rs.1332 from Ac.2.96 in the second crop. On the basis of the settled principles the petitioners were entitled to get compensation for their lands i.e. Rs.3708 multiplied by 16 times which was equal to Rs, 59,343.

So far as standing trees were concerned, the government took the tree statement submitted by the Land Acquisition Officer for consideration because the opposition party (government) who acquired had admitted the number of tree in the tree statement. So considering the importance and size of the tree, the court fixed the price of trees, which is given in Table 3.14.

Table 3.14: Valuation of Trees

Sl No	Variety of Tree	Compensation per Tree (Rs)	No. of Trees	Total Values (Rs)
1	Mango	2000	35	70,000
2	Dharua	200	01	200
3	Sal	1000	03	3,000
4	Mahul	2000	13	26,000
5	Sajana	500	04	2,000
6	Asan	200	01	200
7	Banana	200	97	19,400
8	Tava	200	02	400
9	Bamboo	100	13	1300
10	Lemon	1000	04	4000
11	Papeya	100	13	1300

[10] Kata means a place where rainwater is deposited. The basic difference between a pond and a kata is that man constructs pond but kata is a natural downward slopping place, where rainwater can be stored.

Sl No	Variety of Tree	Compensation per Tree (Rs)	No. of Trees	Total Values (Rs)
12	Kendu	1000	01	1000
13	Country Apple (Big)	200	02	400
14	Pijuli	200	02	400
15	Jack	2000	06	12,000
16	Tamorin	1000	03	3000
17	Country Apple (Small)	10	334	3400
18	Dat Palm	200	22	4400
19	Palm	200	03	600
20	Bhanara	200	08	1600

In total the petitioners were entitled to get Rs. 1,54,540 for their trees so acquired by the opposition party.

As of now, with regard to the acquired house, the petitioners claim that the material used for the construction of house, along with the expenditures stood at Rs. 1,50,000. At the same time the petitioners do not possess any document or other evidences pertaining to the purchase of materials and utilizing them for the construction of the house. Infact, the petitioners are of the view that Engineering personnel deputed by the government did not measure the house properly and also the zone officer failed to consider the cost of the materials while passing the award. Also, the petitioners have not filed any document in support of their claim in the court, regarding to the acquired house. Consequently, it was difficult on the part of the court to locate the area and the type of house in question. On perusal of the valuations statement filed by the zone officer, it was revealed that the government had acquired a house of the petitioners consisting of 10 rooms. Indeed, there is an assumption that, even if the acquired house was constructed 20 years ago, it would have cost minimum Rs.80,000. Besides this, the cost of the land of the house would not be less than Rs.50,000. In a paper valuations, premised on the evidences of the witness, the age and the type of the house, it would have cost atleast Rs.80,000 considering the present market value of the house building materials. In this context, petitioners were entitled to receive Rs. 1,30,000 (Rs.80,000 + Rs. 50,000) as compensation for their acquired house and homestead land.

So far total acquisition of the land and house of the petitioners is concerned, they forced to change of their place of residence and business, which caused severe loss to the

petitioners. Hence, as per the provision laid down in the LAA, 1894 the petitioners were entitled to get extra compensation for the change of their residence and their business to a new place. Considering this aspect, it needed to award further compensation of Rs. 15,000 to each petitioner to meet the ends of justice.

Hence, the petitioners were entitled to get compensation of Rs.59,343 for their acquired land measuring an area of Ac.2.96, Rs. 1,54,540 for their acquired trees, Rs. 1,30,000 for their acquired house and homestead land, Rs. 15,000 for the change of residence and business to a new place to each petitioners along with other statutory benefits. The LA Zone Officer cum Collector, Deogarh was directed to pay the dues after deducting the amount, which he had already paid to the petitioners.

3.11 Compensation and Pattern of Utilization by the Displaced

The displaced people generally spent their compensation money in two different ways, which may be categorized as (a) productive way; (b) un-productive way. Productive way means the people should invest their compensation money in such a way that, it will enhance further production but un-productive way of spending of compensation money is completely related to consumption.

The compensation received by the displaced people displaced by Rengali Dam have been utilized for various purposes, which may be summarized as under:

a) Purchase of land
b) Up gradation of land given by R & R
c) Consumption and purchase of household items
d) Marriages and other social functions
e) Health
f) Others

So far as land is concerned, it has two categories, namely the purchase of land and the up gradation of land given by R & R. The detailed about the spending of compensation in different ways is given in Table 3.15.

Table 3.15: Caste-wise Spending of the Compensation Money

Sl No	Type of Spending	Caste			
		OC	ST	SC	Total
1	Only on purchase of land	11 (11.82)	02 (4.0)	04 (11.42)	17 (9.55)
2	Up gradation of land given by R & R	21 (22.58)	05 (10.0)	05 (14.28)	31 (17.41)
3	Only on consumption and purchase of household items	37 (39.78)	36 (72.0)	22 (62.85)	95 (53.37)
4	Marriages and other social functions	18 (19.35)	02 (4.0)	01 (2.85)	21 (11.79)
5	Health	02 (2.15)	03 (6.0)	01 (2.85)	06 (3.37)
6	Others	04 (4.30)	02 (4.0)	02 (5.71)	08 (4.49)
7	Total	93 (100.0)	50 (100.0)	35 (100.0)	178 (100.0)

From the table above, it is understandable that 11.82% of the OC, 4% of the ST and 11.42% of the SC people have spent their money only in the purchase of land.

Land has been handed over to the resettlers after deforestation and construction of field boundaries at government cost (Govt. of Orissa, 1997). But leveling has not been done. It was never reclaimed and the land was not developed to make it suitable for proper cultivation, though government provided Rs.200 per acre as rehabilitation assistance in the first year of shifting for the purpose of first ploughing. Most of the amount has been misutilized for consumption purposes. People leveled at their own cost. Progress of reclamation is slow on account of poor financial condition of the people. Here, Gajarajan (1970) on the basis of his studies of rehabilitation programme under Tungabhadra River Project observes that the success of rehabilitation programme depends upon the locational advantage of the rehabilitation centers. If the rehabilitation centers are well developed or linked by communicational network, marketing facilities etc. and sufficient good lands are available, it can accelerate the pace of development.

From the table it is seen that 22.58% of the OC, 10% of the ST and 14.28% of the SC people have spent their money in up gradation of land given by R & R. Here the OC people are in a disadvantageous position because earlier they used to employ these landless and tribal people on their field but now due to equal distribution of land the tribal and landless people work on their own field. The progress of reclamation is faster in case of ST and landless people in the new settlement.

Another major factor, in which these people have spent their money, was through consumption and purchase of household items. Soon after the acquisition of the lands, most of them became unemployed. As a result, most of the cash compensation was spent on procuring daily necessities. Category wise maximum of the ST people (i.e. 72%) have spent their money on consumption followed by SC (62.85%) and OC (39.78%). Apart from consumption, they have misutilised the money in purchasing dresses. This is not only in the case of Rengali dam people have spent major portion of their compensation on consumption and purchasing of daily necessities, but also true in all most all of the development projects. Studies such as Economic and Political Weekly Report (1968), Gajarajan (1970), Muthayya and Mathur (1975), and Reddy and Chattopadhyay (1986) have reported that the compensation amount was mostly spent on domestic and living expenses, cleaning of debts, performance of religious and marriage ceremonies etc.

Das and Banerjee (1962) have found that displacement of tribes and their resettlement in new areas caused disruption in their socio-economic and cultural life. The authors also note that continuous contact with outsiders and availability of compensation money could make the displaced people aware of new wants. Even after they were rendered jobless due to completion of various construction works, the desire for newly acquired goods and things lingered, thus creating a void in their lives.

The OC households utilized a major portion of the compensation money in marriages and other social functions as if it is free money obtained from government without much struggle and hardship. It is observed from the study of sample villages under this dam, 19.35% of the OC, 4% of the ST and 2.85% of the SC spent their money in marriages and social functions.

From the above analysis, it is clear that substantial potion of the compensation was spent for consumption and purchase of household items, marriages and social

functions, up gradation of land and etc. Apart from this, they purchased bicycles, wristwatches, scooters and motorcycles and etc, which was not necessary at that time.

3.12 **Disparities Among People for Compensation**

Payment of cash compensation to the displaced people is one of the important aspects of rehabilitation. Studies such as Shatrugna (1981), Centre for Science and Environment (1985), Gandhy and Ajit Kumar (1986), Alvares and Billorey (1988) and Thukral (1988) have mentioned cases of inadequate compensation, disparities in fixation of compensation, scandals in payment especially to tribals and many instances of exploitation by land owners, money lenders and the lawyers.

The disparities for compensation among people can be done at two levels and those are:

a) Implementation level;

b) Sanction of enhanced money to a group of people by the court.

3.12.1 Implementation level

At present, only one law pertains to the regulation of displacement and rehabilitation of people displaced by development projects. The basic act, which has guided the resettlement and rehabilitation of displaced people in India, has been the Land Acquisition Act 1894, which was passed by the colonial government to make it possible for the state to acquire private land for 'public purpose'. Albeit this, the term ' public purpose' that figured in this act is not defined properly. In fact, the absence of an explicit and proper guideline, which defines the term public purpose, makes the application of the whole act an arbitrary one. The basic features of the act empower it to compensate a person who loses his source of living due to arbitrary acquisition of land through which he used to earn a living by working as a labour. Here, a clear distinction has been made by dividing the displaced people in to two different categories. First, those who lose land and the others who lose livelihood. Tribal and landless people fall into the second category. On the average these people depend largely on the village commons, forest, collection of MFP, shifting cultivation and etc to earn a living. Apart from this, the large landholders engage these landless in their agricultural operation on payment of wage. Thus, directly or indirectly the second category people derive their livelihood. The Land Acquisition Act 1894, completely silent so far as these people are concerned and

concentrates on those people who lose land. So, this act basically deals where Land acquisition has a legal standing. A person who has been deprived of his means of livelihood has no legal remedy for rehabilitation (Rao, 1995). In reality these projects have **destabilized the material base of the tribals, have dethroned them from their habitat** and **marginalised them. Thus, capital penetration for the matter, " development"** has **not** integrated the marginalised section into capitalistic framework but has alienated them from it (Nath, 1998).

The first Prime Minister of India, Pandit Jawaharlal Nehru, while laying foundation of the longest earthen dam of the World i.e. Hirakud Dam, in his speech he told the villagers that "You are to suffer, you should suffer in the interest of the country" (The Bombay Chronicle, 1948: 5th April). So whenever there is a development project which is social in nature, displacement for the above two categories of people is imminent. Here, one can say that development and displacement are two sides of the same coin. So far as compensation criteria is concerned, the so called Land Acquisition Act 1894 does not cater to the problems of the man power which loses its livelihood due to forceful acquisition of land in which he was making a living by lending his labour. Thus land acquisition has a legal standing but rehabilitation has no legal standing (Rao, 1995).

The implementation and functioning of land acquisition act can be better understood by taking the example of Hirakud Dam, which is the longest earthen dam in the World. The foundation stone of this dam was laid on 12th of April 1948. Pandit Jawaharlal Nehru, the then prime minister of India, in his speech promised to the people of the area that land for land and house for house would be given and nobody would be left as destitute. Acting on these words, the government of Orissa passed a special act (Act 18 of 1948) in 1948 in accordance with the Land Acquisition Act 1 of 1894 in order to expedite the process of acquisition of land from Hirakud Dam Project. This very law implies that if the fertile land of a person is acquired and he is not provided with land in lieu of the land acquired from him, gets the land where productivity is less, will be given some money over and above land (Proceeding of the Orissa Legislative Assembly, Dated 11.12.1948).

Nevertheless, the fact remained quite far from the promises made. This was substantiated by the fact that the incredible rate of payment of compensation attracted the

public attention when the first land acquisition started in the village 'Jamanda' for the Hirakud dam workshop on an area of 27.76 acres with a total amount of compensation amounted to Rs.519.50 (Question No.ll, Dated 11.10.1949, Proceeding of the Orissa Legislative Assembly). It was learnt that the possession of the land was taken on 2nd April 1948 and after one year the payment of compensation was made on 14.4.1949 at the above rate. Consequently, the government did not keep its promise of land for land and house for house. In another incident, 24 families were left with neither adequate compensation, nor land. As a matter of fact not a single square inch of land was reclaimed till February 1949 (Question No.690, Dated 16.12.1949, Constituent Assembly Proceeding, Orissa).

Indeed, by taking advantage of the land acquisition act 1948, in Orissa, the upper class people obtained whatever benefit was accruing to them. Most of these sections also dragged the state into the legal battle for some concessions. The vulnerable sections of the society, i.e. the tribal people became the net losers in this legal battle. This displacement brought tremendous impact on people's behaviour, rather than on the loss of property. They suddenly entered into a monetary economy. Consequently, there was dramatic increase in drinking and gambling. Some of the people who ventured into the business field, with their few experiences, ended up in a loss.

The Land Acquisition Act 1894 and its amendment are closely related with the doctrine of "Eminent Domain". The doctrine asserts that the state has absolute right over the land and related resources within its territory. The citizen's right to property is always subject the state's right to take it away. Basing and acting on the doctrine of eminent domain the state maximizes its profit only at the cost of a group of people i.e. the agrarian poor, the tribal, the landless euphemistically called people below poverty line. By doing this, the state itself creates the concept of "losers" and "gainers" in the process of development. Here holistic view of development idolized around the modern temples and the planning that surrounds these temples makes a peculiar mockery, namely maximization of social welfare (Rao, 1995). Here, there is a situation where the displaced people are asked to make sacrifices for the welfare of the nation, which is quite pathetic for them. These projects have destabilized the material base of these people, have dethroned them from their habits and marginalized them, because the rich and powerful section of the society availed maximum advantage of development cake while the poorer

sections of the society have been leading a life foil of utter penury and chaos (Barik, 1997).

In the case of Rengali dam project, the indigeneous people who did not possess any land had been staying in the forest for years together and depended upon the shifting cultivation for their living, did not get any compensation for that. The only cause for this was that they did not have legal document of the land and the government is very much silent on this issue.

The detail about the implementation of Land Acquisition Act has been explained by taking the examples of the old villages of the new six resettled villages under study which are cited as below:

Village-1 *(Siding)*

The old name of the village was Old- Siding. The details about the notification, award, and possession are given in Table 3.16.

Table 3.16: Land Acquisition Procedure in village Old- Siding

Sl No	Particular	Date
1	Date of 4 (1) notification	17-06-1980
2	Date of Award	22-3-1981
3	Date of Payment	14th and 15th of May 1981
4	Date of possession	11-10-1985

Government acquired 151.14 ac of rayati land out of the total of 502.79 ac. Hence the rest 351.65 ac were encroached land. So, for each acre of rayati land people had 2.32 ac of encroached land. Out of the total encroached land settle able encroachment land[11] was 7.66 ac and K-form was 2.86 ac. So total rayati land came to 161.66 ac. People got compensation out of 161.66 ac and did not get anything for 189.99 ac. Land Revenue[12]

[11] If a person has 6 acres of patta land and .7 acres of encroached land and he has 5 sons, at the time of land settlement the Land Acquisition Collector will put 5 acres of encroached land as settlement and rest as government land so that in every body's share 2 acres will fall as in order to live a sound life a person needs 2 acres of land. In another case if a person have 8 acres of patta land and 4 acres of encroached land and he has one son, then the government will take all the 4 acres of encroached land as government land. In the above case settle able encroachment is 5 acres only.

[12] Collection of Land Revenue (LR) was special feature of Rengali Dam. This collection was included in the compensation head. The Land Acquisition Officer had sent the estimate of revenue of the land for 25 years of the rayati land which got submerged due to the construction of Rengali dam, at the time of sending of 6 (1) estimate. After sanctioning of the amount the Land Acquisition Collector deducted the amount under Land Revenue head from the compensation and deposited the amount at the nearest Treasury in LR favor. Later on the amount was transferred to Department of Revenue.

for one year of 161.66 ac of land was Rs. 760. For 25 years it was Rs. 19,001. Total compensation (including 15% solatium, 12% of market value) of land, house, trees, wells and etc came to Rs. 12,70,183. There was no compensation for common property resource.

Village-2 (Chargachhia- B)

The old name of the village was Banar. Government acquired 345.30-ac rayati lands out of the total of 1925.69 ac from the people. The rest 1580.39 ac was encroached land. Hence, in this village per each acre of rayati land people had 4.57 ac of government encroached land. Out of the encroached land, settle able encroachment land was 98.03 ac. That means total rayati land came to 443.33 ac. People got compensation out of 443.33 ac of land and did not get anything for the rest 1482.36 ac. Land Revenue for 1 year of 443.33 ac = Rs. 1437. For 25 years = Rs. 35,947. Total compensation (including 15% solatium and 12% of market value) of land, house, trees, wells and etc = Rs. 18,22,195

Village- 3 (Pendrakhole)

In this settlement people have come from two villages namely, Ranjabahal and Gambhariposhi.

(i) Ranjabahal

The following are the details about the land acquisition with dates:

Table 3.17: Land Acquisition Procedure in Village Ranjabahal

Sl No	**Particular**	Date
1	Date of 4 (1) notification	2-5-1974
2	Date of Award	9-3-1979
3	Date of Payment	18-9-1984
4	Date of possession	9-7-1985

Government acquired 260.66 ac of rayati land from the people of this village. Settle able encroachment was 73.67 ac. Reclamation permit was 32.62 ac. Hence total rayati land came to 366.95 ac. So Land Revenue for 1 year = Rs. 807. For 25 years = 20,177. People got compensation of Rs. 23,13,489.00 for 366.95 ac of land, houses, trees, wells and etc.

(ii) Gambhariposhi

Details about the land acquisition with dates in this village are given **in Table** 3.18.

Table 3.18: Land Acquisition Procedure in Village Gambhariposhi

S No	Particular	Date
1	Date of 4(1) notification	10-5-1974
2	Date of Award	15-12-1977
3	Date of Payment	25-8-1984
4	Date of possession	27-3-1978

26.93 ac of rayati land was acquired by the government out of a total of 19334 ac. Hence in this village 166.41 acres were encroached land. So per acre of rayati land people had 6.17 ac of government encroached land. Out of the total encroached land, encroachment settled was 2.52 ac, reclamation permit issued by the forest department was 8.00 ac, new patta issued by the tahasildar was 4.27 ac, D.P. Canal rent paid was 1.60 ac. So total rayati land came into 43.32 ac. Out of this total land revenue for 25 years was Rs. 1626. Total compensation (including 15% solatium and 12% market value) of land, house, trees, wells and etc was Rs. 2,70,770.

Village-4 (Bad dangaghat)

The old name of the village was Kandsor. The details about the land acquisition in this village is given in Table 3.19.

Table 3.19: Land Acquisition Procedure in Village Kandsor

Sl No	Particular	Date
1	Date of 4 (1) notification	26-6-1975
2	Date of Award	17-5-1980
3	Date of Payment	31-10-1985
4	Date of possession	17-2-1988

Here the government acquired 273.12 ac of rayati land out of a total of 1258.45 ac, out of which 985.33 ac were government encroached land. Land revenue for 273.12 ac of land for one year was Rs. 457 and for 25 years it was Rs. 11,446. Total compensation (including the LR of 25 years, 15% solatium, 12% market value) of all land, trees, houses, wells etc was Rs.23, 26,049.00.

Here one thing very common is that in each and every old villages, besides rayati land, people enjoyed the benefit of ample amount of government encroached land. The share of common property was more in the old villages.

Village- 5 *(Barkotia)*

This is basically a cluster where the oustees are staying with the natives[13] of the village. The displaced people of this village have come from 3 villages namely, Bahadaposhi, Jharkilinda and Susulei. The details about these three villages individually are cited below:

(a) Bahadaposhi

The detailed about the Land Acquisition procedure of this village is shown in Table 3.20.

Table" 3.20: Land Acquisition Procedure in Village Bahadaposhi

Sl No	Particular	Date
1	Date of 4 (1) notification	22-11-1977
2	Date of Award	12-11-1987
3	Date of Payment	22,23,24-3-1979
4	Date of possession	22-8-1985

The government acquired 277.30 ac of rayati land from the people out of a total of 825.13-ac lands. This implies that rest 547.74 ac were government encroached land. From the total encroachment, settle able encroachment was 6.74 ac; K-form was 9.63 acres. Hence the total rayati land came in to 293.76 ac. The LR for 1 year of 293.76 ac of land was Rs. 1250. For 25 years it was Rs. 31,265. People got Rs. 17,32,116 as compensation towards land, trees, wells, houses and etc including the land revenue.

(b) Susulei

The detailed about the land acquisition procedure is shown in Table 3.21.

Table 3.21: Land Acquisition Procedure in Village Susulei

Sl No	Particular	Date
1	Date of 4 (1) notification	1-9-1983
2	Date of Award	15-2-1988
3	Date of Payment	24,25-4-1984
4	Date of possession	22-8-1985

The government acquired 164.64 ac of rayati land from the village Susulei. Apart from this, settle able government land was 57.73 ac, K-form was 1.60 ac. So total rayati

[13] The basic difference between an oustee and a native is that oustees are the displaced people and natives are the old villagers with whom the oustees generally stay after displacement.

land **came to 223.97 ac. LR for 1 year of 223.97 ac** of **land = Rs. 964. For 25 years = Rs. 24,106. People got total compensation out of land, trees, houses and etc were Rs.** 13,14,369.

(c) Jharkilinda

The **land** acquisition details of the village Jharkilinda is given in Table 3.22.

Table 3.22: Land Acquisition Procedure in Village Jharkilinda

Sl No	Particular	Date
1	Date of 4 (1) notification	25-3-1978
2	Date of Award	5-12-1987
3	Date of Payment	25-3-1978, 10-3-1980,30-5-1983
4	Date of possession	22-8-1985

256.01 acres of land was acquired by the government due to the construction of the government. Land Revenue for this land for 1 year was Rs. 899.59/-. Hence for 25 years it was 22,489. Total compensation people got for their land, houses, trees and etc was Rs. 16,86,347.

Village- 6 (Bahliadihi)

In this newly resettled village, people from four different old villages are staying. Those four villages are Kesala, Jharadihi, Kousalibahal and Jandadihi. The details about the land acquisition and compensation payment of the villages are discussed as follows:

(a) Kesala

Here the details about the land acquisition is given as follows in Table 3.23.

Table 3.23: Land Acquisition Procedure in Village Kesala

Sl No	Particular	Date
1	Date of 4 (1) notification	12-9-1977
2	Date of Award	24-3-1979
3	Date of Payment	24-1-1985
4	Date of possession	31-3-1987

The government acquired 301.64 acres of rayati land from the people, out of a total land of 821.95 acres. Hence it is clear that 520.31 acres were government encroached land. So for each acre of rayati land people had 1.72 acres of government encroached land. Out of this total encroachment, encroachment settled was 50.93 acre, reclamation permit issued by forest and revenue department was 29.24 acres, and new patta issued by tahasildar was 9.44 acres. Hence total rayati land came to 391.25 acres.

Land Revenue from these 391.25 acres for 25 years was Rs. 19,574. Total compensation including house, land, trees, wells and etc in this village was Rs. 25,26,921.

(b) Jharaihi

The land acquisition and compensation payment in this village is presented in Table 3.24.

Table 3.24: Land Acquisition Procedure in Village Jharadihi

Sl No	Particular	Date
1	Date of 4 (1) notification	10-9-1974
2	Date of Award	22-8-1978
3	Date of Payment	18-9-1984
4	Date of possession	29-2-1988

A total of 259.09 acres of rayati land had been acquired by the government out of a total of 752.38 acres. That means the government encroached land in the village was 493.29 acres. For each acre of rayati land there were 1.90 acres of government encroached land held by the villagers. Encroachment settled was 57.85 acres, new patta issued by tahasildar was 9.00 acres, and reclamation permit by the sub-collector was 8.80 acres. Hence, total rayati land came to 334.74 acres. Total Land Revenue for 25 years = 12,614. Total compensation = 13,86,617.

(c) Kousalibahal

The Land Acquisition details of this village is given as follows in Table 3.25.

Table 3.25: Land Acquisition Procedure in village Kousalibahal

Sl No	Particular	Date
1	Date of 4 (1) notification	10-9-1974
2	Date of Award	18-7-1980
3	Date of Payment	24-1-1985
4	Date of possession	30-7-1980

Government acquired 240.50 acres of land from this village. Here out of the total government encroachment, encroached settled plus reclamation permit was 140.01 acres. Hence the total rayati land came to 389.51 acres. Land Revenue for 25 years was Rs. 21,335. Total compensation paid to this village, including LR, for houses, land, trees, wells and etc was Rs. 28,50,667.

(d) Janda dihi

The details about land acquisition are given as follows:

i. Date of 4 (1) notification = 21-7-1974
ii. Date of Possession = 5-4-1981

The detailed data for this village is not available. The total area submerged (both rayati and government) was 325.75 acres. The compensation paid to this village was Rs. 5,64,715.

From the experiences of the above villages, one thing that can be noted is that there is a gap of at least one year between the 4 (1) notification with that of date of payment. In some cases it is 10 years also. According to law, after the 4 (1) notification people can't do any productive work on that land. Generally the gap period is very much miserable for the people. This is one of the major reasons, people of Rengali Dam have spent major portion of their income on consumption of food.

Now so far as valuation of trees, wells, houses were concerned, here the Land Acquisition Officer showed his discretion. In spite of the presence of some norms, the Land Acquisition Officer gave some arbitrary amount for this. Here the upper classes people especially the *Chasa* (land owning people) and others like " Brahmin" and " Karanas" could accomplish whatever benefit they could extract. Most of these sections also dragged state into the legal battle and got huge amount of money, in some cases 10 times of what they had got earlier[14]. The vulnerable section of the society, i.e. the tribal people became the net losers in this legal battle. This displacement brought tremendous impact on people's behavior, rather than on the loss of property. They suddenly entered into a monetary economy where money is the only medium of exchange. Apart from this, their production system has also displaced along with their displacement from a community-based economy to a modern economy where information is costlier than the community life.

Another thing called the Land Revenue had been collected from the government, as it was the rent of the rayati land for 25 years, which had been sanctioned under the

[14] Mr. P.K. Padhan, Mr. K.C.Padhan and Mr. B.C. Padhan of village Gothamanda of Naikul P.S. of Sambalpur district got Rs. 48,354.28/- as compensation for their lands, trees and house, which they received under protest. The compensation awarded to them was not having any reasonable basis. Hence they appealed the matter for higher compensation before the Court. One interesting thing is that, besides land and house, they got Rs. 1,30,000/- as compensation for trees only.

compensation head of the people. Here the Land Acquisition Officer subtracted the amount and deposited it in the treasury. Here there is a confusion i.e. why there was a collection of LR under the compensation head, not in some other head. The compensation with LR seems very sound and nice. On the other hand, there is a difference between the per capita compensation of a particular village and the actual compensation after withdrawal of the land revenue amount.

The other problem relating to land is that there has been discrimination in the allotment of land with regard to the quality of land. Agricultural land that has been allotted to the displaced people in these villages is not of one variety (Behura, 1989). There are 3- different varieties of land, viz Aul, Daima and Saima. Aul is the best variety amongst the available land types, Daima comes next and Saima is the third variety. All the three available varieties of the land were to be distributed equally among the displaced people. As a result of this formula each family was to allot 60 to 70 decimal of Aul variety, 2 to 2.5 acres of Daima and the rest of Saima variety. But in practice the formula has not been followed. The other prosperous group has skillfully outwitted oustees belonging to the weaker section. Thus the pattern of land allotment has been unequal. The weaker sections of the people have been deprived of their share of Aul variety of land. This has hampered village solidarity and harmonious community life.

3.12.2 Sanction of Enhanced Money to a Group of People by the Court

Economy particularly in the rural areas of Orissa is not fully monetised. Even today the services of barbers, washer men, drumbeaters and others are paid in kind at the time of harvest of paddy at the end of the Hindu calendar year. In backward areas, inhabited by tribals barter economy is prevalent not only in the villages but also in the local weekly markets. This barter economy is clearly visible among the tribals of the villages under submergence. Their contact with cash transaction is limited. Many people of these tribal areas do not know how to count beyond twenty.

So the literate people, generally from the upper class like "Brahmins", "Karanas" and "Chasa" caste derived whatever benefit they could accrue from the project. Because, maximum percentage of these people were literate and working in different offices. So the exposure for these people was definitely more than that of the other class of people. More or less they knew about the legal procedure also as a matter of fact they went to court also and could get enhanced money. Some examples of these kind of people, I have

given earlier in this chapter. In most of the cases in the court, they argued that they were getting the facility of irrigation from the Village River or **kata** and produced double crops. The court has also listened to their arguments and enhanced the compensation money to a large extent. Here, the argument is that, if the chasa people were getting the benefit of irrigation from a particular village and hence their money was enhanced by the court, then what happened to a tribal people from the same village. He might have also got the benefit of irrigation from the same river or kata. Because he lacks outside exposure and being illiterate, he could not go to the court and he did not get the enhanced money.

Here, it can be seen that the government action has been of a discriminatory nature between the advantageous section of the people and the disadvantageous section of the people. The government should remain impartial in this regard.

Chapter 4

Rehabilitation Policies and Programmes Under Rengali Dam

4.0 Introduction

In India, over 1500 major and medium irrigation schemes have been or being implemented to increase the area under irrigation and/ or to control floods, and/ or to generate electricity to meet the demand of the growing industrial sector. While the river valley projects have benefited the people living in the command area, they have eliminated huge hectares of forest and an almost equal area of cultivated land and have led to the ousting of large scale of people from their homes. The uprooted people include those whose land (and/ or house) have either been submerged in the reservoirs or have been acquired for the construction of dams and canals.

The disquieting factor in connection to the development and displacement is that there is an absence of a national rehabilitation policy in India (Nath, 1998). Several issues and problems are associated with the application of the Land Acquisition Act of 1894 for the river valley projects in the context of the rehabilitation policies of state governments. Neither in the national level nor in the state level there exists any legislation for the rehabilitation of the project oustees. The need for a uniform and reasonable rehabilitation policy in the country or atleast in each state for different projects is obvious (Gumber, 1992). Though rehabilitation policies are present in some states like Maharashtra, Gujurat and Madhya Pradesh, but these policies vary not only across states but also from project to project.

Two approaches have so far been adopted for the rehabilitation of people affected by construction of the river valley projects in India: (a) only cash compensation; and (b) alternative land for the land acquired by the government.

The government of Orissa did not have any well-formulated rehabilitation policy for quite some time even after independence (Patnaik, 1996) and also there is no law for payment of rehabilitation assistance in Orissa though such payments in Maharashtra, Madhya Pradesh and Gujurat are backed by law. Compensation for acquiring immovable assets of the oustees of multipurpose as well as irrigation projects is also governed by Land Acquisition Act. In recent past certain initiatives have been taken by few ministries in government of India towards a national policy on resettlement. The first one by Government of India, Ministry of Rural Development, second one by Government of India, Ministry of Water Resources, third and fourth one by NTPC and Coal India

Limited respectively. Here Prof. Nath (1998) has given four different reasons to show that the Indian states has taken up them out of compensation and not out of benevolence towards the plight of the oustees. These four reasons are given as follows:

(a) Growing controversies of agitations and resistance movement by the displaced persons. Due to the growing awareness among the people more and more social activists, academics and concerned persons and NGOs are drawn to the movement to educate person to agitate.

(b) Due to the adaption of the market friendly liberalized economic policy in India during recent years, more and more land is required for the public as well as private sector investment. International finance has made an in- road in to the country and government is welcoming them. Hence the state wants to quicken the process of land transfer by providing some sorts of rehabilitation policy.

(c) The World Bank has undertaken an independent review of what it calls the involuntary resettlement in the country of its operation. The Bank has recognized and acknowledged the unsatisfactory resettlement situation in the projects it is funding and has warned that unless and until there is better rehabilitation it is not going to finance any projects.

(d) In case of displacement and unsatisfactory rehabilitation the constitution of India is violated. Article 19 (i) (e) of the constitution of India, which states that all the citizens shall have the right to reside and resettle in any part of India. Article 21 provides for right to live with dignity and dignified human life. No development project can be undertaken that violates such constitutional right of the people.

Though it is difficult to say which of these above mentioned causes are instrumental in formulating a policy draft on the issue of rehabilitation. It is safe to assume that all of them have prevailed over the state in India to go for a policy initiative.

4.1 Background of the Rehabilitation Policy

In Orissa, the construction of Hirakud reservoir on the river Mahanadi, Machkund Hydro-electric Project and the construction of Hindustan Steel Limited at Rourkela led to the displacement of many families, out of which maximum were SC and ST. In 1988, the construction of Hirakud dam completed 32 years and even after the completion of 32 years of the dam, the compensation amounting to 15 crore rupees were to be paid to 9,913 persons, who lost their land. In the case of Machkund Hydro-Electric Project no rehabilitation provisions were made for 300 SC families and only 30% of tribal families

were rehabilitated (Patnaik, 1996) and HSL rehabilitated only 53.6% of its total displaced families. There was no clear-cut principle under which the land was allotted to each displaced family for the purpose of rehabilitation (Mahapatra, 1990). Because the Machkund Hydro- Electric Project allotted an average of 0.44 acre only to ST and 0.46 acre in average for each SC families.

Historically the problem of rehabilitation assumed importance in Orissa only when the construction of Hirakud Dam was taken up just before plan development through Five Year Plans commenced in the country. The seriousness of the problem can be seen by the fact that as many as 22,144 families in 249 villages in Orissa, besides affecting 36 villages in Madhya Pradesh were displaced. The reservoir submerged 1,23,303 acres of cultivable land. As per the policy followed then, displaced persons were paid full compensation for lands and properties acquired from them. They were free to resettle themselves in places of their choices or opt to resettle in Government sponsored colonies. In the latter case, reclaimed lands were allotted to them at a subsidized rate of Rs. 213 per acre. Cost of reclamation was Rs. 500 per acre, and it was borne by the project. There was no limit to the extent of land for allotment. House sites were given free in the reclaimed areas and timber was supplied at 60% of the normal royalty for the construction of houses. Manures and fertilizers were supplied free of cost and seed paddy was given on loan. "Katas" and "Mundas" for irrigation purposes, tanks and wells for drinking water purposes, school buildings, hospital, community center, "bhagbat ghar" etc. were provided in the settlement colonies. Transport was free of cost to the submerged area people for carrying all their movables excepting straw (Dalua, 1993).

The Hirakud Land Organization was in charge of the responsibility of orderly removal of the families from the reservoir area to their places of choice for resettlement. It was not an easy task. The complexity of the problem can be understood by the fact that even now complaints are received from some of the displaced persons about payment of compensation money.

Hirakud dam was followed by Balimela Project in the early seventies. Here rehabilitation of the people was taken up in the pattern of Hirakud. But Rengali Dam saw a new chapter in the history of irrigation development in Orissa. This policy specifically for the Rengali Project was later on elaborated and developed to be adopted as a uniform policy for all Major and Medium Irrigation Projects. This was approved by the government of Orissa in April 1977.

4.2 The Movement Against Rengali Dam

The decision for the construction of Rengali Dam dates back to 1971, following the unprecedented cyclones and floods particularly in the coastal district of Orissa. A committee had been set up to recommend measures to control floods, which suggested for the early completion of Rengali Dam Project. Initially local people did not welcome the construction of the dam; the obvious anger being against the manner in which problems of displacement were being tackled. There was great agitation, which was consequently delayed the construction of the dam. The agitation lasted for about 7 years. However the government of Orissa was compelled by this type of situations by the displaced persons from Rengali Dam Project to formulate the rehabilitation policy for the oustees for the first time in 1973 (Mahapatra, 1991). According to G.B.Nath and K.S.Agrawal (1987) the protest movement against the construction of the Rengali Dam Project had four stages.

The first stage extending from January 1971 to December 1972 had no clear-cut objectives, nor did it have any concrete work programme. The political forces of that area combined to form the " Bandha Pratikriya Samiti" with the aim to oppose the construction of the Dam. During this period, there was no clarity regarding the approval of dam by the Government as to what will be the size of the reservoir and how many villages were going to be submerged. This stage ended with the division of the Bandha Pratikriya Samiti into two organisations, namely, the "Bandha Nirodh Committee" (BNC) and the “Rengali Thaithan O Punarbasati Samiti" (or Rengali Rehabilitation and Resettlement Committee).

The Second Stage is marked by public meetings by the Bandha Nirodha Committee. As is clear from the name, this committee included leaders, mostly landlords, advocating the undesirability of the project and thus demanding its closure. It is during this period that the foundation stone of the project was laid by the Prime Minister of India. The leaders of the BNC held closed-door as well as public meetings, to stage protest against the inauguration of the dam. A work programme for the same was prepared. Plans to demonstrate black flags, wear black badges, and offer mass Dharana and courting arrest by violating 144 IPC orders were made. However on the day of the ceremony the police did not allow any of the important leaders of the BNC, to go to Rengali

The third stage is one of intense excitement among the people. With the progress in the construction work of the dam, the reaction among the people mounted. Some anti dam slogans came up and an under current of protest prevailed among the people. During emergency, however, the people and the leaders remained calm. In 1978, however when Janata Government did not listen to their appeals, things got worse. Finally, the people staged a 31 day long mass dharana on the dam site during this period.

4.2.1 First Stage

Reaction against the Rengali dam began when the provincial dailies published, about such a proposal. After the unprecedented cyclones and floods in Orissa in 1971, the Government of Orissa was thinking seriously about construction of big dams across the flooding rivers in the state. Experts on the subject were invited to visit the state to recommend measures of flood control. This phase witnessed the formation of the organisation called BPS (Bandha Pratikriya Samiti), which consisted of people from various political parties and from different classes. To the extent the members had diverse interests, no definite work programme existed for the organisation. Subsequently a public meeting was organized at " Gogua" on 30th August 1971, the biggest village in the submergible area and with a population of about 5000 had remained the political centre of the entire area. The Chairmen and members of different Panchayats of that region as well as some political leaders addressed the meeting. The speaker in general stressed for generating public opinions against the construction of the dam. At this stage, the leadership adopted the procedures of protest through the memoranda and appeals to the Government, Ministers, and Members of Parliament and Legislative Assemblies. Large number of meetings were organized in the villages to mobilize the villagers to protest against the construction of the Dam. However, the leaders at this stage were ignorant about the size of the proposed Dam and the extent of the area to be submerged.

The preliminary survey work started in 10th February 1972 for the construction of the dam. The leaders of the organisation contained their approach to the Government through memoranda, letters to the editors and organizing delegations to meet Ministers. However the subsequent programme to lay the foundation stone by the Government brought a disagree of view among the members of the organisation and the leadership. On the 30th of October 1972, in the emergency meeting of the organization two distinct viewpoints emerged, while discussing about the concrete work programme to be undertaken during the foundation laying ceremony. One group led by the supporters of

the Swatantra party firmly held the opinion that the construction of the Dam is entirely anti-people, undemocratic and uneconomic and hence advocated the stoppage of the construction. On the other hand, another group consisting of the supporters of Congress Party presented the view that it is not possible to stop the construction where government is determined. The approach should be to struggle for a better rehabilitation programme for the affected villagers. In view of conciliation of the two view it resulted in the breaking up of the organisation, the latter group forming a new organisation called " Punarbasati O thaithan Samiti" (Rehabilitation and Resettlement Committee). The other one was Rengali Bandha Nirodha Committee on 15th December 1972. Thus, the first phase ended with the division of Bandha Pratikriya Samiti into two.

4.2.2 Second Stage

Having eliminated the Pro-Congress, Pro-rehabilitation leaders, the leaders of BNC intensified their activities, which of course, was limited to contact the important or rather dominant persons of different villages and holding meeting at strategically important villages. Now the speeches of the leaders were more forceful, making the audience to fight against the dam sacrificing, if necessary, even their life and property. The demand for a separate province consisting of the Ex-Garjat states was presented more vehemently.

In the meeting at Rajabahal on 23rd December, 1972 Mr.Soubhagya Dwibedyi, Vice-President of BNC said, " we have to start an agitation against the construction of Rengali Dam with stronger determination. We will not accept the deceptive Rehabilitation Programme. To save ourselves, we will have to carry on a struggle of life and death".

In the mean time Mr. P.K.Deo, Ex-King of Kalahandi, carried on his own attempts to prevent the construction of the dam. He was a source of inspiration to the leaders in the submergible area and they had great hopes in him. On 13th April 1972, Mr.Deo delivered printed copies of a letter addressed to Mrs.Gandhi and circulated it among prospective allies among M.P.s. In the letter, he criticized the central government for approving the plan for RNP though letter and more effective measures for control of floods were available.

Public meetings protesting the construction of the dam were held at two villages namely, Bahadaposi and Bamara on 27th December and 28th December 1972 respectively.

Before any final decision on the project could be taken, rumours about Mrs. Gandhi's programme to lay foundation stone excited people greatly. Finally, meetings were held and the funds for the BNC were raised. People got confirmed that the Government was determined in its move and only a strong fight could inhibit the project. In a meeting at Khandam on 6th January 1973, Mr. Udhaba Pradhan, a landlord said, " The Government is interested to please the people of the eastern belt by displacing the families of the Garjat area. Now the touts have formed the Government. We will shed our blood to fight against this partial attitude of the Government. We will even go to jail as we did in the independence struggle. We will prefer drowning ourselves in water to accept this fraudulent rehabilitation program".

In the meeting at Bolita, an another village, on the same day, the same theme was repeated, " we will have to give blood and fight against the construction of the dam. The Eastern people are exploiting the poor people of Western Orissa for their benefits. Hirakud was constructed on our land. And now they are going to construct Rengali and Bhimkund on our soil. Garjat area will be turned into a sea. We will have to fight against this unjust Orissa Government".

People were excited while one section strongly believed that a strong agitation would definitely impress the Government to shelve the project, the larger section participated in the agitation, which until now was limited to offending meetings, arguing to resolutions and participation in processions, only with curiosity and fear. On the other hand, they were afraid not to co-operate because might lead to antagonizing the, leaders of the agitation who were at the same time lords in the villages.

Since meetings and press statements went futile, the leaders of BNC thought of organizing a mass procession. On the one hand, this would impress the government strongly and on the other, it would attract larger number of people to participate. Now two things came to be emphasized most in the meetings and processions. Firstly, if the government would not agree to stop the project work, the people of the sub-mergible area would have no option but to demand a separate province. Secondly, the leaders always asked the people to be non-violent. Since a good number of the people of the area were excited in either way, they could turn a miss at any movement. And none of the leaders in the BNC meant a violent agitation.

Ultimately the day of the foundation laying ceremony arrived and BNC had decided to stage a big protest and some leaders had opposed to court arrest at the

function. However, no protest could be displayed. The leaders were arrested in advance. Since all the leaders being arrested, none of the work programs of BNC could be implemented to organize agitation. The gathering at the ceremony was small too. And the foundation stone was laid without any disturbance whatsoever.

The leaders of Deogarh Local Congress Committee, however, presented a memorandum to Mrs. Gandhi on the ceremony pendal. Unlike the stand of BNC, the stand of these leaders was not to demand closure of the proposed dam work but for better compensation rates and better facilities of resettlement and rehabilitation. The major demands in the memoranda were as follows:

i. A person should get as much land in the rehabilitated village as he possessed in the submergible village.
ii. Every land lost family of the submergible area should get atleast five acres of irrigated or ten acres of unirrigated land.
iii. If a person is interested to reclaim land in the reserved forests outside the proposed villages for rehabilitation, he may be given permission to do so.
iv. The resettlement and rehabilitation work be expediated. Until this work is over, the construction work of the dam be postponed.
v. Ownership of land be granted to persons who have been cultivating encroached land.
vi. The people from the submergible area be given priority in employment under the state and central government.
vii. Industries be set up in the rehabilitation area.

4.2.3 Third Stage

After the foundation of the dam was laid down the agitation did not notice any change in the work programme of BNC. It exhibited a passive approach in organising the villagers for about 2 years. The declaration of the emergency further brought a slowing down of the agitation.

The reactivation for opposing the dam construction was initiated only after emergency was lifted and during the Janata Regime, which also did not listed to the appeals of the BNC. The agitators resorted to a 31 days long mass Dharana on the Dam site from 11th May 1978 and obstructed the construction of the dam by not allowing

engineers to move towards the dam site. The organizers of Satyagraha followed the methods of persuasion as well as threats in calling the people to participate in the mass Satyagraha. A committee was formed in each village to send the different families in turn to the dam site. Although it was met with resistance from some villagers while large number of, people participated only out of fear.

In the first week of June 1978, the Government persuaded the leadership to withdraw the mass Satyagraha. Subsequently when the agitators did not respond to the Government's call in withdrawing the Dharana and in allowing the construction work, force was applied in dealing with the agitators. This resulted in a confrontation between the state machinery and the Satyagrahis. Many of the agitators were victims of lathi charge and teargassing and large number of them were arrested. That marks the end of the agitation.

4.2.4 Fourth Stage

The agitation was withdrawn. People were disillusioned. They approached the judiciary. Cases were filed in the High Court, Orissa and Supreme Court. But the judiciary has got its own limitation. When people came to know that judiciary is not going to provide them with anything concrete some interested leaders formed "Basachuta Lok Surakhya Samiti (BLSS). This BLSS organised meetings in the rehabilitated villages and create public opinion for the fair and just compensation with other promised facilities by the project authority. On 20th May 1986 in a big meeting of the displaced persons 11-point chatter of demands were drawn which includes the better rehabilitation facilities. On 19th June 1986, a Chatter of demand was given to the government. But despite government commitment on 12th of September 1986 in the floor of the Orissa Assembly it did not show any interest in fulfilling the genuine demands of the public. Hence on 10th June 1987 the BLSS organized a roadblock (Rasta Roka) movement, where nearly 600 people were arrested. However only 21 partially submerged villages were declared fully submerged village and accordingly government committed for the payment of compensation for them according to the procedure followed for other submergible People. However the demand for re-survey of households, provision of irrigation, making the land cultivable, provision of schools, hospitals and drinking water, electrification of rehabilitated villages, declaring the village as revenue village, providing job to one from each households etc. have not fulfilled by the government. Till date the BLSS is organizing demonstration and mass Dharana and distribute chatter of demands to various

authorities. The success of the movement for better rehabilitation depends on the strength and weakness of the movement itself.

4.3 Evolution of the Rehabilitation Policy of Orissa

Construction of Rengali Multipurpose project created anger and ill will among the oustees. Government has formulated different policies from time to time to provide rehabilitation assistance in addition to compensation already paid against land, house and other immovable assets. Government has carefully considered the rehabilitation facilities allowed to the families displaced in other projects inside the state and in other states and keeping in view the human problem involved in displacing large number of families have finally decided to provide adequate facilities to the displaced families in the new resettlement colonies vide government resolution number 35054 dated 6-12-1973. These benefits are grouped as follows:

1. Provision of free house sites in model villages/ colonies
2. Agricultural Land
3. Assistance for House Construction
4. Provision of Common Facilities
5. Electrification
6. Minor Irrigation

There are two other government resolutions- Resolution Number 13169 dated 20-4-1977 and Resolution Number 318888 dated 21-8-1990, dealing with Rehabilitation Policies of Major and Medium Irrigation Projects in Orissa. These two resolutions gave some changes over the earlier one in the following ways:

1. Definition of displaced families
2. Provision of initial maintenance allowance
3. Provision of Employment Facilities
4. Afforestation of Compensatory Forest Land
5. Reconstruction of Deities and etc.

So the evolution of rehabilitation policy with a special reference to Rengali Multipurpose Project is discussed in the following section:

(1) Provision of Free House site

Displacement creates trauma for people and in the name of the nation the people suffer a lot. Resolution No 35054- FC- RL- 4/73, dated 6th December 1973, which was the first resolution of the government of Orissa regarding rehabilitation policy, provided homestead land to the extent of 0.30 acre free of cost depending on the availability of the land. Further the government told that the cost of development of the house site and village lay out would be borne by the government. This matter was modified in the resolution number 18473, dated 20th of May 1978 where the government raised the area of homestead land of house site to half-an-acre to each displaced family instead of 0.30 acre. This land is only meant for house site and as well as development of kitchen garden.

Due to restriction on use of forest land, the government in the Irrigation and Power department in their letter number 7213- RL-224/83, dated 11th February 1983, have decided that whenever land is not available, subject to the willingness of the displaced family, grant for the house site shall be paid at the rate of Rs. 2160 per acre so as to enable them to settle at the place of their choice. The issue of allotment of homestead land was further changed in resolution number Irr. III. UIP (R)- 8/ 90. 318888. Department of Irrigation, dated 21st August 1990 and it was decided to limit the distribution of homestead land to 0.10 acre.

(2) Agricultural Land

Land for land is the basic objective of Rengali Dam. The first resolution of Irrigation and Power Department No. 35054 Dated 6.12.1973 provides that each family whose land has been acquired for the project would be allotted either 3 acres of reclaimed irrigated land or 6 acres of reclaimed un-irrigated land in the ratio of 1:2. The cost of reclamation will be borne by the Government subject to a maximum of Rs. 600 per acre. The above land will be allotted free without any charge payable to Government; but 50 percent of the reclamation cost subject to a maximum of Rs.300 will be recovered from the oustees in whose favor the land has been allotted.

It is never possible for the oustees to bear the burden of reclamation since he is always the loser by sacrificing his fertile land. Secondly, forestland allotted in his favour cannot be equal in fertility to his original land.

The above resolution has been amended by another Resolution No. 4161-RL.9/75, dated 13.2.1975 as under:

No reclamation cost will be recovered from the **landless** people to be displaced from the submerged area. 50% of reclamation cost subject to **a** maximum of Rs.300 per acre will be recovered from others to the extent of their lands being submerged for which they get compensation in each case i.e. where the submerged land comes to 2 acres only, the person will be liable for paying reclamation cost for 2 acres only, even if he is allotted more than 2 acres of land for resettlement.

According to Resolution No. 38089-RL. 127/81, dated 8.11.81 the government have been pleased to approve the cost of reclamation to be paid to displaced families opting for self-reclamation for individual settlement in existing villages as well as in government colony to be Rs. 600.00 per acre for all areas excepting ayacut of Gohira and Samakoi Projects. Incase of areas coming within the ayacut of Gohira and Samakoi Projects the rate of payment shall be Rs. 1000 per acre. Further, in their order No. 6412-RL-211/82, dated 18.2.82 the Government of Orissa approved to distribute Rs. 200 per acre to the resettlers to take up self-ploughing on the land settled with them but not ploughed by Orissa Agro Industries Corporation. Resolution No. Irr.III. UIP (R)-8/90 318888, dated 21.8.1990 tried to restrict allotment of agricultural land by categorizing the displaced people into two different groups namely (a) those who have lost up to 4 acres and (b) those who have lost above 4 acres of land.

Allotment was restricted to 2 acres un-irrigated land and/or 1 acre of irrigated land in the first category but in the second category allotment was confined to 4 acres of un-irrigated land or 2 acres of irrigated land. Resolution No. 19898, dated 30.7.1991 assessed this issue again and came to the conclusion that each displaced family including landless families will receive 2.5 acres of un-irrigated land and 1.25 acres of irrigated land. The Government Order, dated 11.12.1991 provided for cash payment in the absence of land at the rate of Rs. 16,000 per acre of irrigated land and Rs.8,000 per acre of un-irrigated land.

(3) Assistance for House Construction

According to the Resolution Number 35054- FC- RL-4/73, dated 6th December 1973, the government in Irrigation and Power Department provided that the displaced families would be provided facilities of free transport of the house building materials, which they could salvage from their old houses for carriage to the new resettlement colonies. House building materials from the nearest forest would be made available at

concessional rate of 60% of normal royalty. Necessary guidance to build low cost houses with fire proof would be provided to the displaced persons. Facilities of loans under Low Income Group Housing/ Village Housing Scheme would also be, extended to the new resettlement colonies.

Due to the regular objection of the forest department, the government in Irrigation and Power Department in their order Number 7004-RL-37/77, dated 2-3-1977 ordered that house building materials would be supplied by the forest department to the displaced people from nearby Khesara or Reserved Forest at single royalty at tenants rate applicable for Khesara forests. Further government in Forest, Fisheries and A.H. Department in its circular number 7561- 10F (M) 131/78- FFAH, dated 29th of March 1980 have been pleased to supply the forest materials to each displaced family on payment of single royalty at tenant's rate. The forest materials supplied are as follows in Table 4.1

Table **4.1:** Scale of Supply of Forest Material

Sl No	Kind	Girth	Number
1	Poles	75 cm to 90 cm	10
2	Poles	Under 60 cm	05
3	Poles	30 cm to 45 cm	40
4	Bamboo or Poles	Under 30 cm	50
5	Brush Wood		2 Carts loads

Source: *Government of Orissa, 1980.*

In addition to this, the government, Forest, Fisheries and A.H. Dept, Circular No-5542- 10- E (M) 39/ 81- FFAH, dated 3rd March 1981, ordered that the displaced families could take one tree of 120 cm girth per family at the prescribed rate in addition to the sanctioned scale of supply.

(4) Provision of Common Facilities

According to the first government resolution number 35054- FC- RL- 4/73, dated 6th December 1973, the government, Irrigation and Power Department has been decided that common facilities like village roads, school drinking water wells, tanks for general purpose use, community building will be provided at project cost. For amenities like School, Public Health Centre, Veterinary Dispensary and Panchayat Ghar, respective administrative departments of government have to supplement the provisions made in the

rehabilitation estimates for their departmental budget. The compensation payable from the project funds towards common facilities existing in the submersible area would be shown as recovery against this item.

According to the circular number 40004, dated 14th of December 1977, the scale of common facilities like drinking water wells and tanks for general purpose use etc in a colony of 100 families was fixed. But it was found that according to option exercised by the displaced families, colonies of different size and numbers have been pleased to decide that drinking water wells and tanks will be provided in the following manner in modification to the earlier norm.

1.

a) Up to 44 families.....One well
b) 45 to 70 families.....Two wells
c) 75 to 100 families.....Three wells

2.

a) One tank for each village irrespective of number of families.
b) Where families were of smaller sizes, smaller type of tanks can be considered subject to technical feasibility.

3. The facility in respect of road as prescribed in this Department Letter Number 40004, dated the 14th of December 1977 will be applicable to such colonies.

In addition to the provisions indicated above Government of Orissa, Irrigation and Power Department in their circular number 19036- RL-95/ 81, dated 22nd of May 1981, ordered that in cases of individual resettlement in Revenue Village where the number of families for resettlement at least 15 in any village, one well should be provided at a convenient location. Where the numbers of such families exceed 30, depending on necessity, the Revenue Division Commissioner may sanction a two-roomed school building and a tank.

(5) Electrification

The government in its first resolution number 35054-FC-RL-41/73, dated 6-12-1973 ordered that the State Electricity Board would include these resettlement camps for provision of Electricity under their Rural Electrification Programme.

(6) Minor Irrigation

In the same letter number 35054-FC-RL-41/37, dated 6-12-1973, the government said " facilities for minor irrigation in the resettlement colonies will be provided to the extent possible. There will be a provision of Rs. 2 crores for this purpose in the project estimate. Priority will be given to the displaced people for resettlement with the ayacut of the Rengali Project to the extent possible or within the ayacut of the nearby medium projects subject to availability of land.

(7) Reconstruction of Deities

The literal meaning of deity is god or goddess or divine person. Generally in the rural areas, these deities play an important role in keeping the people together. One can say deities are a binding force of the community particularly in rural areas. All the categories of people have many socio- religious functions to be performed before the deities of their respective villages. This is obligatory in many occasions like marriage function, among all categories of people (Biswal, 1994). Nevertheless, the Irrigation and the Power Department is aware that dislocation of the places of worship might take place due to submergence of such places. Through the circular number 8792- RL- 213/ 82, dated 8th March 1982, the Governor has been pleased to extend the following rehabilitation facilities to the deities.

a) A Trust Board with the concerned Sub- Divisional Officer as the President and Ex-officio Executive Officer shall be constituted in respect of each deity by Commissioner of Endowment to look into the affairs of the deity.
b) Compensation as admissible under Land Acquisition Act will only be paid.
c) Compensation amount for pucca temples shall be deposited with the Rengali Rehabilitation Organization and the same Organization shall construct a similar temple on site to be demarcated by the Trust Board by meeting additional amount (for the temple) if any required, from the project. (The cost of the site if any should ordinarily be limited to corresponding compensation amount). For Kutcha temples compensation shall similarly be deposited with the Block Development Officer and additional amount if any required for construction of similar Kutcha structure shall, on approval of estimate by the Project Engineer, be paid by the Project to the Block Development Officer concerned, who shall construct a similar Kutcha structure at the place demarcated by the Trust Board.

d) Allotment of land shall be made for each deity as is applicable for a displaced family. Where this is not possible or where the Trust Board/ Villagers so opt, in place of land, approved reclamation cost of Rs. 6,000 (960 x6 = 5,760, round off to Rs. 6,000) shall be paid.

e) In case of deities installed in Pucca temples, 5% of compensation payable subject to a maximum of Rs. 2,500 may be paid for construction of temporary structure with Kutcha walls and G.C.I. roofing for temporary rehabilitation of the deity. This structure will be constructed by the rehabilitation organization subject to identification of site by the villagers/ Trusts Board. Similarly, where the temple is a Kutcha structure 5% of compensation subject to maximum of Rs. 500 may be paid for temporary structure. The structure may be completed by the Trust Board/ Rehabilitation Organization/ Block Development Officer concerned, as may be decided by the Revenue Divisional Commissioner.

f) 5% of the amount payable towards compensation for temples subject to a maximum of Rs. 1,000 may be paid towards removal and reconsecration of deities. Where necessary, the Revenue Division Commissioner may, subject to approval of Government, suitably increase the same.

g) To assist the Sub divisional Officer and Executive Officer of the Trust Board, one Senior Clerk (U. D. Clerk) will be sanctioned for the office of the Sub divisional Officer till the closure of the project and the expenditure in this regard shall be charged to the Project. A separate order in this regard will follow.

(8) Definition of Displaced Family

The first Resolution issued by the Government dated 6-12-1973 states that the families whose land has been taken for the Rengali Dam project are eligible to avail rehabilitation assistance provided by the Government. The Resolution number 4161 dated 13-2-1975 stated that any male married person, above the age of 18 years, whether son or brother, will be considered as a separate family unit concerned with the rehabilitation policy. Further, the Government Order Number 7004, dated 2-3-977 changed the earlier to include landless people above the age of 18 years and married as being eligible for the benefits of rehabilitation. Government Resolution Number 13169, dated 20-4-1977 reviewed the policy with regard to definition of family for the benefit of rehabilitation assistance and went out a step further to include homeless persons to the earlier definition, who are dependent for their livelihood as manual labour on agricultural land

immediately before the area comprising such lands, which were acquired by the project and who have been deprived of such livelihood on account of acquisition of those lands. Taking all these factors into consideration, a family in relation to a displaced person as defined on 20-4-1977 means such a person and his or spouse, minor sons, un-married daughters, minor brothers and/ or sisters, father and mother and other members residing with him and dependent on him for their livelihood. By this definition married sons and/ or brothers above the age of 18 years are automatically excluded to be treated as separate families. This is a landmark decision of the government on the basis of which the number of families eligible for rehabilitation assistance under Rengali Multipurpose Project has been prepared, amount assistance calculated and disbursement either in cash or kind has been made.

The above mentioned facilities shall be available to public deities having recognized public place of worship at the time the foundation stone was laid and are eligible for compensation as such under the Land Acquisition Act. The facilities are also applicable to all mosques, Gurudwaras and Churches.

4.4 Assessment of the Rehabilitation Policy

The Rehabilitation Policy of Rengali Dam is one of the best policies in India. Since it is called 'the best', it definitely means that it must have some superiority over other policies. The superiority and limitation of the Rehabilitation Policy of Rengali Dam discussed are as follows:

4.4.1 House site

First and foremost positive point of the policy is the provision of house site of 0.50 acre to all the people displaced due to the project. Here more or less on the average, the house site areas of all the people have increased to a large extent. People have built their houses on 5 to 10 decimals and other parts they are being used as kitchen garden. As per the government norms out of 0.50 acre, 2 decimals are tax-free. In some cases the homestead land are given in 3 to 4 different plots. In such situations people are suffering. Because, if one plot is available inside the village, then another is near the forest or near the hills. Hence the people do not concentrate on those lands.

4.4.2 Reclaimed Agricultural Land

The universal provision, as promised by the government, due to the construction of Rengali Dam is that each family where land has been acquired for the project could be provided with either 3 acres of reclaimed irrigated land or 6 acres of reclaimed unirrigated land. This provision, moreover, is based on the premise that all the displaced persons of the project are more or less equal with more or less preferences. It is already indicated that every family irrespective of the fact whether he has lost the land or not has been allotted with 6 acres of unirrigated or 3 acres of irrigated land for agricultural purposes under this project.

From the field survey, it has been observed that the land provided to them has a low productivity. As they are basically cultivators they have not been given adequate capitals and input for raising their yield rate on par with the condition that existed before displacement. Till date, after 20 years of displacement, they are not in a position to cultivate the whole land. Out of 6 acres 3 to 3.5 acres people cultivate. It was seen that a considerable number of displaced people are dissatisfied with the quality of the land.

There was a provision of giving Rs. 3960 as reclamation cost @ Rs. 660 per acre. If a person has 3 acres of land, then he will get the money of remaining 3 acres of land and Rs. 1980 as reclamation cost. Here in almost all the displaced people have received this amount but less than Rs. 3960, in some cases Rs. 1000 and in some cases Rs. 1100. The Land Acquisition Officer gave this money in the first year of the stay of the people in the resettlement villages. According to the LAO, they have disbursed the money in 3 equal installments. They have given the first installment in the first year. Depending upon the progress of reclamation they were supposed to give the remaining installments. But in some cases it was seen that people have spent the money on consumption, as marginal propensity to consume of the poor people is more. In some cases the LAOs have stopped disbursing the remaining installments to people because of the poor progress of the reclamation. In some cases the LAOs have done partiality to those people who were known to these LA officials, have received all the installments irrespective of the progress of reclamation of the land.

Another most important thing is that irrigated land compensation. Here irrigated lands are divided in to two broad categories and those are (i) irrigated head; (ii) irrigated tail. Irrigated head areas are situated very near to the canal but irrigated tail areas are far away from the canal, as it is in most cases end part of the canals. In the irrigated head

areas both rabi and kharif crops can be grown very well but in irrigated tail areas only rabi crop can be grown and some portion of the land nearer to the canal can be grown in kharif. But in classification of irrigated and un-irrigated land, both the types of villages are coming under irrigated village. Here there is a clear discrimination against the irrigated tail village, as these villages are more or less same as the villages, where people have got 6 acres of un-irrigated land as compensation. Hence on the average these people are loser of 3 acres of land.

The problem being faced by the displaced people regarding their agricultural land in new village is that of the distribution of scattered land. They have not got their land at one place. In some cases people have received land in 7 to 8 plots also in different villages. For example, in one of the study village (BHALIADIHI), the land of the people has been scattered in the following different villages, which is presented in Table 4.2.

Table 4.2: Distribution of Land in Different Patches

Sl No	Name of the Villages	Distance from the Resettlement Colony
1	Mahuldarh	1.5 km
2	Bhaliadihi	Okm
3	Talkundi	1.0 km
4	Rengal Nali	2.0 km
5	Deojharan	2.0 km
6	Arjun Pali	1.5 km

For a single person, to move around those villages of different distance is very much difficult.

Cheap agricultural labour available before displacement is no more available since equal agricultural land has been allotted in favor of all the families. Therefore, ladies and children of upper caste not used to manual work are forced to undertake the same for their survival. Village elders of upper caste, particularly those belonging to middle and high-income groups, were leaders before displacement. Now they feel it derogatory to go the field along with their wives and children in order to attend to agricultural operations.

4.4.3 Disputed Land

According to the Rehabilitation policy, all the people irrespective of their land status have got land as compensation in the new resettlement colonies. Those people, who did not take land, took money in lieu of land. Here, so many problems are arising in the resettlement colonies regarding the distribution of land. In some colonies like Pendrakhole, the same piece of land has been allotted to two different people as a result they are quarrelling among them selves regarding the ownership of the land. Another problem is that some people are of the opinion that groups of people have received all of their land very nearer to the canal and groups of people have received very far from the canal. Here, the Land Acquisition officials have done some favor to those people during the distribution of land holding.

4.4.4 Infrastructure Facilities

Under the programme of infrastructure facilities, it was proposed to construct 83 tanks, 142 wells, 91 tube wells, 66 primary schools and 67 clubs for the 61-resettlement villages and 26 tanks, 65 wells, 63 tube wells, 21 primary schools and 02 clubs in 95 clusters and 06 high schools, 19 M.E. schools in resettlement villages and clusters. All the work in the resettlement colonies has been completed as per the government record but in the clusters, as per the government record, 03 tanks, 02 wells, 01 tube well and M.E. school could not be completed in time. Those facilities, which are present at those villages, are not in good status. In almost all villages, basically the tube wells and wells are not in good condition. The people have given complaints several times to the concerned department to look after these things but the concerned departments of the government are silent regarding this. In some villages, the villagers are facing a drinking water problem, particularly during in the summer season.

4.4.5 Conflict in Families

In the old villages, in some cases, the properties were in the name of grandfather and also great grandfather. So all the compensation has been sanctioned in their names. As a result conflict arose in the resettlement village within families between father and elderly married sons and between brothers with regard to the distribution of compensation money. On receipt of this money several oustee families quickly performed marriage of their sons and daughters, which had been postponed for lack of funds. And, therefore, many oustee families quickly performed marriage of their sons and daughters,

which had been **postponed** for lack of funds. And the balance had been kept in the custody of the household head. After displacement, sons who were married by 1973, and as such have received homestead and agricultural land from the Project Authorities, and are now living independently demand their due share of the compensation money from their respective fathers/ elder brothers. In some cases former household heads have paid nominal amounts to the claimants and not full shares of the compensation money under the pretext that latter have received home stead and agricultural lands independently, and therefore this should only be shared by these sons who have not got this privilege.

The backbone of the resettlement plan anywhere should be a 'development package', that is, a set of provisions aimed at reconstructing the production base of the relocatees. This package must offer suitable opportunities and resources for their economic and social re-establishment as self-sustaining producers.

4.5 Status of Rehabilitation of Different Families in Rengali Dam

Rehabilitation of displaced persons due to submergence of villages is the duty of Resettlement and Rehabilitation Officer assisted by zone officer under the control of RDC (ND), Sambalpur. As per the latest estimate 11,289 families were affected due to submergence who were to be rehabilitated. Information on displacement of people due to construction of the Rengali dam project is given in Table 4.3.

Table 4.3: Status of Rehabilitation of Different Families

Status of Rehabilitation	Caste			
	SC	ST	GC	**Total**
A. Families identified for rehabilitation	2,100	1,328	7,861	11,289
B. Families rehabilitated till to-date	1,814	1,234	7,387	10,435
C. Balance families to be rehabilitated	286	94	474	854

For the displaced people, 61 number of resettlement colonies and 95 clusters villages were set up and 66% displaced families were provided with land, 22% were given cash and balance 11% families await rehabilitation both by land and cash. Civic

amenities provided in colonies and cluster-Tanks-109, Wells-207, Tube-wells-154, Club houses-69, Schools-87, M.E Schools-19, High Schools-6. Besides, approach roads also provided. Cost of land acquisition and rehabilitation is Rs 64.95 crore of which land acquisition costs is about Rs 30 crore.

The above infrastructure facilities are provided in 61 villages established by clearing reserve forests on Right and Left side of Brahmani river and also in the ayacut of Gohira and Samakoi rivers. 10,582 displaced families are rehabilitated by the government which includes 997 families shifted from hard-core villages out of total number of hard-core families to be shifted being 1,452. Arrangement which were made by people and, places of resettlement villages, individual clusters and families making their own arrangement for rehabilitation with cash compensation are given in Table 4.4.

Table 4.4: Status of Rehabilitation in Resettlement Colonies

Sl.No	Description of Resettlement Area	No. of Colonies	Families Resettled		Total
			Land	Cash	
1	Villages in Reserve forest colonies on Brahmani Right	22	1418	—	2157
2	Villages in Reserve forest colonies in Brahmani Left	08	739	—	
3	Villages in Gohira Ayacut	25	643	—	825
4	Villages in Samakoi Ayacut	06	182	—	
5	Individual Clusters	95	4792	—	4792
6	Existing villages by individual arrangement	—	—	2808	2808

Source: Behura, 1989

Name of the villages where 2808 families are resettled after receiving cash compensation only is not available in Government records. Therefore, the total number of families resettled by allotment of land is 7,774. It consists of 1418 families rehabilitated in 22 colonies on Brahamani Right, 739 families on Brahamani Left, 643 families in 25 colonies of Gohira Ayacut, 182 families in 6 colonies on Samakoi Ayacut and 4792 families in 95 individual clusters.

4.6 Rehabilitation Facilities in Rengali Dam

4.6.1 Land

As per the norms communicated by irrigation and power department, each family is to be provided with 0.50-acre homestead land and either 6 acres unirrigated or 3 acres irrigated land for agriculture purpose after reclamation. Reclamation includes jungles clearance, uprooting of stumps, field bunding and single ploughing but not levelling. Accordingly, each family has been provided with homestead land, agricultural land. The total area distributed to the resettlers comes around 18,850 acres, cash grant of Rs. 14,040 for the area has also been paid where people opted for resettlement by cash. The people were transported free of cost to new settlement and were allowed to take movable belongings with them.

4.6.2 Infrastructure Facilities

As per policy decision communicated by irrigation instructions, infrastructure facilities as detailed below are to be provided in each resettlement village:

a) Up to 44 families- 1 well
b) Up to 75 families- 2 wells
c) Up to 100 families- 3 wells
d) Tank for each village- one
e) Number of tanks where families exceed 100- one tank for each 100 families
f) Internal roads are to be provided
g) One two roomed Primary school for each village
h) One more school if families exceed 100
i) Atleast one club in each village and one club for each 100 families were to be provided in bigger villages

Besides, one well or tube well is to be provided for each school. Location where atleast 15 families or more resettled by reclaiming land themselves was treated as cluster village. As per norm, 95 locations were identified as 95 cluster villages. Infrastructure facilities at the rate of one well for 15 families and one tank and one primary school for 30 families to be provided in each of the above 95 cluster villages depending on the number of families resettled. Accordingly, almost all the infrastructure works in the resettlement villages and cluster villages have already been completed as detailed in Table 4.5.

Table 4.5: Infrastructure Facilities Available in the New Colonies

Location	Works	No. Required	No. Completed
61- Resettlement villages	(i) Tanks (ii) Wells (iii) Tube wells (iv) Primary Schools (v) Club	(i)83 (ii) 142 (iii) 91 (iv) 66 (v) 67	(i) 83 (ii) 142 (iii) 91 (iv) 66 (v)67
95- Clusters	(i) Tanks (ii) Wells (iii) Tube wells (iv) Primary Schools (v) Club	(i) 26 (ii)65 (iii) 63 (iv)21 (v)02	0)23 (ii)63 (iii) 62 (iv)21 (v)02
Resettlement villages and clusters	(i) High Schools (ii) M.E. Schools	0)06 (ii) 19	0)06 (ii) 18

Source: Govt of Orissa, 1997

4.63 Communication Facilities

Originally there was no Government decision to provide communication facilities to either resettlement villages or cluster villages. Subsequently it was decided in High Level Commission to provide roads to resettlement villages, which had no other means of communication. Accordingly out of 61 resettlement villages, 16 such villages were identified and road works were taken up. The approach roads to cluster villages are to be constructed utilizing RLEGP funds as decided in the 7th meeting of the High Level Committee held on 26.6.1986. So the project is not executing the projects.

The total expenditure on resettlement excluding infrastructure work will come to around Rs.7 crores. Generally people have been resettled in locations of their choice but the lands mostly consist of forest, which are high-undulated table land. People as a matter of habit generally go in for paddy cultivation in these lands. Rice being their staple food of people, they are inclined to grow paddy. These lands except few valleys are not generally suitable for paddy cultivation due to poor water retention capacity of soil. So crop diversification has to be done. Crops such as mustard, bajra, groundnut, till etc can be grown in these lands economically. So agriculture extension activity through Government agency is absolutely necessary.

4.6.4 Cost of Land Acquisition

Due to the construction of the dam the government acquired 34,335.67 acres of rayati land from the people apart from acquiring 65,382.10 acres of government and forestland. Rs. 5433 crores have been spent on Land Acquisition and Rehabilitation by the end of March, 1990. A further amount of Rs. 3.29 crores is likely to be spent to complete some left over works. Thus total expenditure comes around Rs. 55.33 crores. Break up of the expenditure is furnished below in Table 4.6.

Table 4.6: Cost of Land Acquisition and Rehabilitation in Rengali Dam

Sl No	Particulars	Amount Spent (Rs in crores)
1	Land Acquisition	28.67
2	Rehabilitation including infrastructure works and replacement of submerged structures	25.66
3	Total	54.33

Source; Govt of Orissa, 1997

The total amount spent towards land acquisition was Rs. 28.67. Due to rehabilitation including infrastructure works and replacement of submerged structures, 25.66 crores has been spent. The total amount spent was Rs. 54.33.

Chapter 5

impact off Resettlement and Rehabilitation under Rengali Dam

Part-I

Socio-Economic Survey of the Sampled Villages

5.1.0 Introduction

Large-scale development activities involve displacement of populations on **a** massive scale. Often, such displacement is involuntary. In this process of displacement, many villages and their socio-economic structures are destroyed. Further, involuntary displacement disturbs and at times completely dismantles the productive base, inducing impoverishment among affected populations. Sometimes, the magnitude of displacement is so massive that the regional economies are adversely affected.

An attempt is made in this chapter to assess the impact of resettlement and rehabilitation (R & R) measures on the displaced people with specific reference to Rengali Dam of the RRVDP, It is divided in to two parts viz (i) Socio-Economic Survey of the Sampled Villages and (ii) Impact Assessment. The first part analyses the profiles of the six sample villages surveyed and the performance of the resettlement operations in those villages. The second part, on the basis of data collected from the sample villages discusses the impact of R & R on the displaced people. In other words it analyses the upward or downward mobility of the displaced people due to the dam construction.

5.1.1 The Sample Households

The sample households drawn from 6-resettled villages are classified on the basis of land compensation, which may be grouped in to two categories:

1) Villages with allotment of irrigated land;
2) Villages with the allotment of un-irrigated land.

Of 178 households covered under this study, 81 households are from the villages, with the allotment of un-irrigated land and 97 households are from those villages with the allotment of irrigated land. The households are again classified into two major categories. They are

1. Castes-wise;
2. Economic class wise.

In the first category, the households are classified in to 3-major categories, which may be grouped in to

a) Scheduled Tribe (ST);
b) Scheduled Caste (SC);
c) Other Caste (OC).

And in the later categories the 178 households are classified in to five distinct categories on the basis of their landholdings in standard acres. They are

a) Large farmers (having land holding 10.01 acres and above);
b) Medium farmers (having landholding of 5.01 acre to 10.0 acres);
c) Small farmers (having land holding of 2.01 acres to 5.0 acres);
d) Marginal farmers (having landholding up to 2.0 acres);
e) Landless (No land).

The detailed about the households in the six resettled sample villages are discussed in Table 5.1.

Table 5.1: Sample Households for the Six Resettled Villages

Types of Villages	Caste of **Households**							
	ST		SC		**OC**		**All**	
	Total HH	**Sample HH**	**Total HH**	**Sample HH**	**Total HH**	**Sample HH**	**Total HH**	**Sample HH**
A. Villages with allotment of irrigated land								
1. Bada- dangaghat	09	**09**	**05**	**05**	**49**	**19**	**63**	**33**
2.Pendrakhole	**11**	**09**	**13**	**06**	**28**	**17**	**52**	**32**
3. Bhaliadihi	**11**	**11**	**09**	**07**	20	**14**	**40**	**32**
Sub-Total	**31**	**29**	**27**	**18**	**97**	**50**	155	**97**
B. Villages with allotment of un-irrigated land								
1. New- Siding	**05**	**05**	**06**	**06**	**23**	**11**	**34**	**22**
2. Banar	**22**	**10**	**03**	**03**	**51**	**22**	**76**	**35**
3. Barkotia	**06**	**06**	**09**	**08**	**17**	10	**32**	**24**
Sub-Total	**33**	**21**	**18**	**17**	**91**	**43**	142	**81**
TOTAL	**64**	**50**	**45**	**35**	188	**93**	297	178

The study depended on complete enumeration of all families in these displaced areas. In these six resettled villages lived a total of 297 households, out of which 155 households lived in those villages with allotment of irrigated land and remaining 297 households in the villages with allotment of un-irrigated land. Sampling was resorted to, for selection of families in these resettled areas to the extent of 50% to 60% from amongst six settlements affected directly from Rengali Dam. For this purpose, a list of households for each village was obtained from the Zone Office, Deogarh and also from the Tehasildar and a random sampling method was followed in selecting samples to the extent of 50 to 60% for each village. Table 5.1 gives information regarding names of the villages, their types and number of households covered under the villages.

The break up of the total number of households in both types of village as per the classification scheme mentioned above is given in Table 5.2.

Table 5.2: Design of Sample Household

Sl No	Household category	Caste							
		ST		SC		OC		Total	
		Before	After	Before	After	Before	**After**	Before	**After**
1	Large (10.01 ac & above)	Nil	Nil	Nil	Nil	07 (7.52)	01 (1.07)	07 (3.93)	01 (0.56)
2	Medium (5.01 ac to 10 ac)	Nil	11 (22.0)	01 (2.85)	12 (34.28)	16 (17.20)	45 (48.38)	17 (9.55)	68 (38.20)
3	Small (2.10 ac to Sac)	14 (28.0)	34 (68.0)	09 (25.71)	18 (51.42)	35 (37.63)	41 (44.08)	58 (32.58)	93 (52.24)
4	Marginal (Up to 2 ac)	18 (36.0)	03 (6.0)	12 (34.28)	02 (5.71)	24 (25.80)	03 (3.22)	54 (30.33)	08 (4.49)
5	Landless (No land)	18 (36.0)	02 (4.0)	13 (37.14)	03 (8.57)	11 **(11.8)**	03 (3.22)	42 (23.59)	08 (4.49)
6	Total	50 (100.0)	50 (100.0)	35 (100.0)	35 (100.0)	93 (100.0)	93 (100.0)	178 (100.0)	178 (100.0)

As it can be seen from Table 5.2, 23.54% of the total numbers of sample households were landless before displacement. Out of the total of 42 landless households, 18 households were ST, 13 households were SC and remaining 11 were OC. These people are those, who own neither land nor implements and make their living by selling their labour.

Out of the total households surveyed, 7.52% were large farmers and they were from the OC category. These large farmers generally cultivate their land by the help of

permanent labours and casual labours and they directly participate in the physical production process. They do not sell their labour to other peasants.

Prior to displacement, most of the ST and SC households were small and marginal farmers but the OC people had better economic position in comparison to the former groups. From this it is clear that there was disparity among the OC people and other two groups (i.e. ST and SC).

5.1.2 Demographic Details

The demographic details of the six- resettled villages, surveyed are discussed in Table 5.3.

Table 5.3: Distribution of Total Households and Population

Sl No	Caste	No of Households	Male	Female	Total
1	ST	64 (21.54)	278 (23.36)	259 (23.63)	537 (23.49)
2	SC	45 (15.15)	121 (23.63)	118 (10.76)	239 (10.45)
3	OC	188 (63.29)	791 (66.47)	719 (65.60)	1510 (66.05)
4	Total	297 (100.0)	1190 (100.0)	1096 (100.0)	2286 (100.0)

Out of the total population of 2286 population in the six resettled surveyed villages, 23.49% of the people are ST, 10.45% are SC and remaining 66.05% are OC. 52.05% of the total population are male and remaining 47.94% are female (Table 5.3). The distribution of households and population in both the types of sample villages i.e. irrigated and un-irrigated villages are given in Table 5.4.

Table 5.4: Distribution of Households and Population in the Six- Resettled Villages

Types of Villages	Caste	No. of HH	Male	Female	Total
A. *Villages with allotment of irrigated land*	ST	31	196	182	378
	SC	27	105	94	199
	OC	97	541	477	1018
Sub-Total		155	842	753	1595
B. *Villages with allotment of un-irrigated land*	ST	33	82	77	159
	SC	18	16	24	40
	OC	91	250	242	492
Sub- Total		142	348	343	691
TOTAL		297	1190	1096	2186

All the 178 households studied, have a total population of 1206 persons, which gives an average of 6.8 per family. Caste- wise the average number of members per family is 7.0, 6.4 and 6.8 for ST, SC and OC people respectively.

Table 5.5: Sample Households, Size of Households and Age-wise Distribution of Population

Types of Villages	Caste	No. of HH	Average size of HH	Age wise Distribution of Population				
				1-15	16-50	51-60	60+	Total
A. *Villages with allotment of irrigated land*	ST	29	5.93	49 (28.48)	86 (50.0)	23 (13.37)	14 (8.13)	172 (100)
	SC	18	5.00	50 (55.55)	24 (26.66)	10 (11.11)	06 (6.66)	90 (100)
	OC	50	6.28	95 (30.25)	159 (50.63)	23 (7.32)	37 (11.78)	314 (100)
Sub-Total		97	5.93	194 (33.68)	269 (46.70)	56 (9.72)	57 (9.89)	576 (100)
B. *Villages with allotment of un-irrigated land*	ST	21	8.42	73 (41.24)	76 (42.93)	08 (4.51)	20 (11.29)	177 (100)
	SC	17	7.94	38 (28.14)	71 (52.59)	15 (11.11)	11 **(8.14)**	135 (100)
	OC	43	7.39	82 (25.78)	163 (51.25)	30 **(9.43)**	43 (13.52)	318 (100)
Sub-Total		81	7.77	193 (30.63)	310 (49.20)	53 (8.41)	74 (11.74)	630 (100)
TOTAL		178	6.77	387 (32.08)	579 (48.00)	109 (9.03)	131 (10.86)	1206 (100)

The disgusting factor in the composition of family members is that the members of female are less than that of the males in the households. This may be due to widespread poverty and all round marginalization after the displacement; the project oustees do not take care of the female child during illness. Hence there must be premature female child mortality in the area reducing the number of female (Nath, 1998).

The presentation of the various age groups shows that only 387 out of a total of 1206 persons are between the age group of 1-15 and 579 people are within 16-50 age groups, where as 109 households are between 51-60 age group and 131 people are +60 (Table 5.5). Thus 48% of the people are between 16-50 years of age, which means that during the notification of the project maximum of them were minors. Hence, they have not understood the implication of the project and the way it would affect them in the long

run. However, another 20% of the people who are more than 51 years of age have seen the trauma of displacement.

Another purpose of age group analysis is that for the purpose of rehabilitation, family irrespective of the size was taken as the unit and whosoever was major and married by December 1973 was to be considered as constituting a separate family. Each family so defined was provided with a house site of 0.50 acres homestead land and either 6 acres of un-irrigated land or 3 acres of irrigated land free of cost. There arc so many demerits of this type of land distribution. From the field survey it can be seen that, a father having two major sons has received only two leases[1]- one in his name and another one in the name of one son. As a result one son has taken one lease of entire 6 acres of land and out of the father's lease of 6 acres of land, there will be share for other sons. Hence it is a major cause of conflict within the families.

Another thing reported by some of the respondents that the high caste people were able to influence the bureaucracy to get included in to the separate family list for the purpose of getting compensation. But the lower caste people (mostly uneducated and illiterate) were unable to follow the implication of the enumeration of household. Hence they could not get the desired benefit. For example, a displaced person from Bhaliadihi Village went to court and was awarded some land but till date he has not received the land. That is why until now people are agitating for re-survey of the family to include them as separate entity.

5.1.3 Occupational Pattern

Primary occupation means this is the occupation in the sense that people derive major income from this and spend considerable period of their time in it. Table 5.6 shows the primary occupation of the people before and after displacement.

Table 5.6: Primary Occupation of the People

SI No	Caste	No of HH	Primary Occupation							
			Agriculture		Wage Labor		Service		Others	
			Before	After	Before	After	Before	After	Before	After
1	OC	93	77	54	13	21	02	12	01	06
2	SC	35	22	23	13	10	Nil	01	nil	01
3	ST	50	22	25	28	25	Nil	nil	nil	Nil
4	TOTAL	178	121	102	54	56	02	13	01	07

[1] **Lease means the compensation package where agricultural lands of either 6 acres of un-irrigated land or 3 acres of irrigated land with 0.50 acre of homestead land are included.**

In all the six old settlements, 67.97% of the people were having agriculture as the primary occupation. After displacement less number i.e. 5730% of the households have chosen agriculture as the primary occupation. Among the OC people, there is a drastic reduction in the number having agriculture as the primary occupation, which has been reduced from 77 to 54 after dam construction. This is because after expropriating the land from the people, the project authority provided them 6 acres of either un-irrigated land or 3 acres of irrigated land, as a result their land holding has been reduced to a large extent.

So far as ST and SC households are concerned, in both the cases, the numbers of people having agriculture as their primary occupation has increased (i.e. 22 to 23 in SC and 22 to 25 in case of ST respectively).

Wage labor was the primary occupation for 54 households (i.e. 30.33%). In OC caste the number has increased from 13 to 21 but in case of SC and ST, it has reduced from 13 to 10 and 28 to 25 respectively.

It is very interesting to note that 13 households (7.30%) of the total households reported service as their primary occupation. Among the jobs, the jobs doing by the people are primary school teacher, forest guard and Rengali Dam employees. Employees in Rengali Dam have not got the job according to the job compensation. At the time of dam construction they were working as temporary workers. The government has regularized their jobs. Out of the 13 households, 12 are from OC caste and 01 from SC caste. No ST people are doing any government job. The details about the primary occupation of the households of irrigated and un-irrigated villages are given as below in Table 5.7.

Table 5.7: Primary Occupation of the Households in Both the Types of Villages

Types of Villages	Caste	No. of HH	Primary Occupation							
			Agriculture		Wage Labor		Service		Others	
			Before	After	Before	After	Before	After	Before	After
A. Villages with allotment of Irrigated Land	ST	29	08	14	**21**	**15**	Nil	Nil	**Nil**	Nil
	SC	18	08	12	**10**	**06**	Nil	Nil	**Nil**	Nil
	OC	50	35	23	**12**	**17**	02	04	**01**	06
Sub- Total		97	51	49	**43**	38	02	05	01	06
B. Villages with allotment of Un-irrigated land	ST	21	14	11	**07**	10	Nil	Nil	Nil	Nil
	SC	17	14	11	**03**	04	Nil	01	Nil	01
	OC	43	42	31	**01**	04	Nil	**08**	Nil	**Nil**
Sub-Total		81	70	53	**11**	18	Nil	**9**	Nil	01
TOTAL		**178**	121	**102**	**54**	56	02	**14**	01	**07**

In the irrigated villages, out of the total of 97 households 51 were having agriculture as their primary occupation, which has decreased to 49 after displacement. The decrease is more among the OC households. Among ST and SC the number of households practicing agriculture as their primary occupation has increased from 8 to 14 in case of ST and 8 to 12 in case SC. So far as wage labor is concerned, the number of households working as wage labor has also decreased from 43 to 38 but the number of households working as wage labor in case of OC households have increased considerably from 12 to 17. In case of other two castes it has decreased as they started cultivation in the new resettled colonies after the land distribution.

In the un-irrigated villages, out of the total of 81 households 70 were having agriculture as their primary occupation, which has decreased to 53 after displacement. The number of households practicing wage labor as their primary occupation has increased from 1 to 4 in case OC, 3 to 4 in case of SC and 7 to 10 in case of ST households. In these villages the number of people doing government jobs after displacement are 9.

5.1.4 Land Ownership: Before and After

It is revealed from the Table 5.8, 5.9 and 5.10, that 74 households out of a total of 81 households from the village with allotment of un-irrigated land and 97 households out of 97 households from the villages with the allotment of irrigated land have received land at the rate of either 6 acres of un-irrigated land or 3 acres of irrigated land and 0.50 acre of homestead land. As a result, the landholding capacity of the people in the resettled colonies have increased to an large extent i.e. 331.5 acres to 428.94 acres in case of villages with un-irrigated land and 200.41 acres to 344.98 acres in case of the villages with allotment of irrigated land

Table 5.8: Land Holding Pattern ɾrfAll the Six Villages

Household Category	Caste															
	ST				SC				OC				Total			
	Before		After		Before		After		Before		After		Before		After	
	No	Area	No	Area	No	Area	No	Area	No	Area	No	Area	No	Area	No	Area
(i) Landless	18	Nil	02	Nil	13	Nil	03	Nil	11	Nil	03	Nil	42	Nil	08	Nil
(ii) Marginal	18 (56.3)	16.25 (24.5)	03 (6.25)	8.6 (4.73)	12 (54.5)	18.75 (33.0)	02 (6.25)	04 (3.07)	24 (29.2)	30.55 (7.60)	03 (3.33)	05 (1.17)	54 (39.7)	65.55 (12.49)	08 (4.70)	17.6 (2.38)
(iii) Small	14 (43.7)	50 (75.5)	34 (70.8)	107 (58.9)	09 (40.9)	32 (56.4)	18 (56.2)	54 (41.5)	35 (42.6)	124.2 (30.9)	41 (45.4)	125.5 (29.4)	58 (42.6)	206.17 (39.29)	93 (54.7)	286.5 (38.7)
(iv) Medium	Nil	Nil	11 (22.9)	66 (36.3)	01 (4.5)	06 (10.6)	12 (37.5)	72 (55.3)	16 (19.5)	115.1 (28.6)	45 (500)	283.8 (66.4)	17 (12.5)	121.07 (23.07)	68 (40.0)	422 (57.0)
(v) Large	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	07 (8.5)	132.1 (32.8)	01 (1.11)	13 (3.04)	07 (514)	131.85 (25.13)	01 (0.58)	13 (1-75)
Total HH with Land	32 (100)	66.25 (100)	48 (100)	181.6 (100)	22 (100)	56.75 (100)	32 (100)	130 (100)	82 (100)	401.9 (100)	90 (100)	427.3 (100)	136 (100)	524.65 (100)	170 (100)	739.1 (100)
Total Sample HH	50	---	50	---	35	---	35	—	93	—	93	---	178		178	
Average size of Holding	2.07		3.78		2.57		406		4.<		4.'74		3.85		434	

Table 5.9: Land Holding Pattern of Villages with Allotment of Un-irrigated Land

Household Category	Caste															
	ST				SC				OC				Total			
	Before		After		Before		After		Before		After		Before		After	
	No	Area	No	Area	No	Area	No	Area	No	Area	No	Area	No	Area	No	Area
(i) Landless	03	Nil	Nil	Nil	03	Nil	Nil	Nil	01	Nil	Nil	Nil	07	Nil	01	Nil
(ii) Marginal	07	7.5	02	3.10	09	13.75	Nil	Nil	06	09	Nil	Nil	22	30.25	02	3.1
	(39)	(16)	(10)	(3)	(64)	(43)			(14)	(4)			(30)	(9)	(2.5)	(0.72)
(iii) Small	11	39.5	08	29	05	185	06	18	21	78.8	04	13	37	136.8	18	60
	(61)	(84)	(38)	(30)	(36)	(57)	(35)	(21)	(50)	(31)	(10)	(5)	(50)	(41)	(22.5)	(14)
(iv) Medium	Nil	Nil	11	66	Nil	Nil	11	66	10	71.2	38	233.8	10	71.2	60	366
			(52)	(67)			(65)	(79)	(24)	(28)	(90)	(95)	(14)	(21)	(75)	(85)
(v) Large	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	05	93.5	Nil	Nil	05	93,24	Nil	Nil
									(12)	(37)			(7)	(28)		
Total HH with Land	18	47	21	98 1	14	32.25	17	84	42	252.5	42	246.8	74	331.5	80	429 I
	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100 0)	(100)	(100)
Total Sample HH	21	---	21		17	—	17	—	43	---	43	---	81	—	81	—
Average size ofHolding	2 61		4.67		2.30		4.94		601		5. 37		4.47		536	

Table 5.10: Land Holding Pattern of Villages with Allotment of Irrigated Land

Household Category	Caste															
	ST				SC				OC				Total			
	Before		After		Before		After		Before		After		Before		After	
	No	Area	No	Area	No	Area	No	Area	No	Area	No	Area	No	Area	No	Area
(i) Landless	15	Nil	02	Nil	10	Nil	03	Nil	10	Nil	02	Nil	35	Nil	07	Nil
(ii) Marginal	11	8.75	01	5.5	03	5	02	4	18	21.55	03	5	32	35.3	06	14.5
	(79)	(45)	(4)	(7)	(37.5)	(20)	(13)		(45)	(14)	(6)	(3)	(52)	(18)	(7)	(5)
(iii) Small	03	10.5	26	78	04	13.5	12	36	14	45.37	37	112.5	21	69.37	75	226.5
	(21)	(55)	(96)	(93)	(50)	(55)	(80)	(78)	(35)	(30)	(77)	(62)	(34)	(36)	(83)	(73)
(iv) Medium	Nil	Nil	Nil	Nil	01	6	01	6	06	43.87	07	30	07	49.87	08	56
					(12.5)	(24)	(7)	(13)	(15)	(29)	(15)	(28)	(11)	(26)	(9)	(18)
(v) Large	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	02	38.61	01	13	02	38.61	01	13
									(5)	(26)	(2)	(7)	(3)	(20)	(1)	(4)
Total HH with Land	14	19.25	27	83.5	08	24.5	15	46	40	149.4	48	180.5	62	193.15	90	310
	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100.0)	(100)	(100)
Total Sample HH	29	---	29	---	18	---	18	—	50		50	---	97	—	97	
Average Size of Holding	1.37		3.09		3.06		3.06		3.73		3.76		3.11		3.44	

5.1.5 Household Ownership of Farm Implements: Before and After

Due to shift in the highly productive land to unfertile land, its effect on other assets like farm implements and livestock is unmistakable. The natures of the implements possessed by the people are carts, tractors, ploughs, iron bars and etc. The changes in farm equipment has presented in Table 5.11.

Table 5.11: Household Ownership of Farm Implements: Before **and After**

Category of HH	No. of HH	Total Number Owned							
		Carts		Tractors		Ploughs		Iron bar	
		Before	After	Before	After	Before	After	Before	After
ST	50	27	16	Nil	Nil	59	61	24	28
SC	35	16	09	Nil	Nil	36	29	19	19
OC	93	59	51	03	02	241	178	134	137
TOTAL	178	102	76	03	02	336	268	177	184
% Change		-25.49		-33.33		-20.23		+3.95	

It is seen from the Table 5.11 that carts, ploughs and iron bars are important equipment among the households. However, for each caste, the farm equipments have declined to a larger extent i.e. 25.49% decline of carts, 20.23% decline of ploughs and 1.69% decline in case of iron bars. If use of improved agricultural implements would be taken as a sign of prosperity, then neither in the pre-submergence nor in the post submergence period there was use of any improved implements. The household ownership of farm implements before and after displacement in both the kinds of villages are given in Table 5.12.

Table 5.12: Household Ownership of Farm Implements in Irrigated and

Types of Villages	Caste	No. of HH	Total Number Owned							
			Carts		Tractors		Ploughs		Iron Bars	
			Before	After	Before	After	Before	After	Before	After
A. Villages with allotment of Irrigated Land	ST	29	11	10	Nil	Nil	27	33	11	15
	SC	18	06	06	Nil	Nil	14	16	07	11
	OC	50	27	31	02	02	118	93	63	76
Sub- Total		97	44	47	02	02	159	142	81	102
% Change			+6.81		No Change		-10.69		+25.92	
B. Villages with allotment of Un-irrigated land	ST	21	16	06	Nil	Nil	32	28	13	13
	SC	17	10	03	Nil	Nil	22	13	12	08
	OC	43	32	20	01	Nil	123	85	71	61
Sub-Total		81	58	29	01	Nil	177	126	96	82

Types of Villages	Caste	No. of HH	Total Number Owned							
			Carts		Tractors		Ploughs		Iron Bars	
			Before	After	Before	After	Before	After	Before	After
% Change			-50		-100		-28.81		-14.58	
TOTAL		178	102	76	03	02	336	268	177	184
% Change			-25.49		-33.33		-20.23		+3.95	

In the Irrigated villages, there is an improvement of carts and iron bars of 6.81% and 25.92% respectively in the post-displaced situation. Incase of plough, there is a decline of 10.69% in the new resettled villages.

For each caste, the farm equipments have declined to a larger extent i.e. 50% decline of carts, 28.81% decline of ploughs and 14.58% decline in case of iron bars.

5.1.6 Livestock Owned by Various Castes

Livestock is next important asset. A corresponding decline is observed in case of livestock. The following table shows the household ownership of livestock both for the pre-submergence period as well as for post-submergence period.

Table 5.13: Household Ownership of Livestock: Before and After

Category of HH	No. of HH	Number of Livestock Owned							
		Bullocks		Cows		Hens		Goats	
		Before	After	Before	After	Before	After	Before	After
ST	50	70	77	120	47	167	96	149	61
SC	35	54	51	61	33	98	64	79	31
OC	93	303	200	331	149	237	146	128	51
TOTAL	178	427	333	512	229	502	306	356	143

Table 5.13 gives the distribution of livestock viz. bullocks, cows, goats and hens. Each household possesses some sort of livestock though the possession is with varying intensities. The most important features in the livestock ownership is that all most for all caste the livestock ownership has been reduced except in case of ST. In the case of ST, the ownership of bullocks have been increased from 70 to 77. The change in the ownership of livestock is because shifting has caused enormous problems for the peasantry for which they do not have means to maintain the livestock. Mainly there was the problem of fodder and space for animals. Hence the livestock are less number in the new resettlement colonies. The increase in the number of bullocks in case of ST people is

started cultivation in their land as result they have purchased bullocks for their land. Table 5.14 shows the household ownership of livestock in both the set of villages individually. Except ST and SC category in the villages with allotment of irrigated land so far as ownership of bullock is concerned, the ownership of other livestock has decreased to a large extent. In the villages with the distribution of irrigated land, the ownership bullock in case of ST has increased from 30 to 44 and that of SC from 20 to 26. In total, the ownership of bullock has also decreased.

Table 5.14: Household Ownership of Livestock in the Irrigated and Un-irrigated Villages: Before and After

Types of Villages	Caste	No. of HH	Primary Occupation							
			Bullocks		Cows		Hens		Coats	
			Before	After	Before	After	Before	After	Before	After
A, Villages with allotment of Irrigated Land	ST	29	30	44	63	24	102	58	69	27
	SC	18	20	26	36	19	56	40	41	17
	OC	50	135	92	141	71	138	95	63	28
Sub- Total		97	185	162	240	114	296	193	173	72
B. Villages with allotment of Un-irrigated land	ST	21	40	33	57	23	65	38	80	34
	SC	17	34	30	36	21	42	24	38	14
	OC	43	168	108	105	59	99	51	65	23
Sub-Total		81	242	171	198	103	206	113	183	71
TOTAL		178	427	333	438	217	502	306	356	143

5.1.7 Average Annual Income of the People: Before and After

Income of a household depends upon the structure of land holding, resource position, size of the household, ratio of earners and dependent, wage rates etc.However any **precise** calculation of income and earnings are difficult on account of the diversified nature of income. The details about the income of the people has been explained in Table 5.15.

able 5.15: Average Annual Income of the reopie; Before and After

Category of HH	No of HH	Total number of family members		Total Income		Average Income per HH			Per Capita Income	
		Before	After	Before	After	Before	After	Change	Before	After
ST	50	234	349	545174	286681	10903	5733	-47.41	2329	821
SC	35	193	225	407103	282060	11631	8058	-30.71	2109	1253
OC	93	442	632	2419765	1213668	26018	13050	-49.84	5474	1920
Total	178	869	1206	3372042	1782409	18944	10013	-47.14	3880	1477

Income is estimated at 1980-81 constant prices

Table 5.16: **Average** Annual Income of the **Displaced Households of Irrigated Villages: B**

Category **of HH**	No **of** HH	Total number of family members		Total Income		Average Income per HH			Per Capita Income	
		Before	After	Before	After	Before	After	% Change	Before	After
ST	29	137	171	238747	158734	8232	5473	-33.51	1742	928
SC	18	98	135	161124	146163	8951	8120	-9.28	1644	1082
OC	50	231	348	1079770	758511	21595	15170	-29.75	4674	2179
Total	97	466	654	1479641	1063408	15254	10962	-28.13	3175	1626

Income is estimated at 1980-81 constant prices

Table 5.17: Average Annual Income of the Displaced Households of **Un-irrigated** Villages: Before and After

Category **of HH**	No **of** HH	Total number of family members		Total Income		Average Income per HH			Per Capita Income	
		Before	After	Before	After	Before	After	% Change	Before	After
ST	21	97	167	306427	127947	14591	6092	-58.24	3159	766
SC	17	95	130	245979	135897	14469	7993	-44.75	2589	1045
OC	43	211	312	1339995	455157	31162	10585	-66.03	6350	1458
Total	81	403	609	1892401	719001	23362	8876	-62.00	4695	1180

Income is estimated at 1980-81 constant prices

Table 5.15 presents the average annual income of the different households before and after displacement. The table clearly reveals that the annual average income of the OC households is found to be much higher than the ST and SC households. Before displacement, the average income per household of the OC people is more than twofold than that of the average income per household of the ST people. So there were many disparities among the various categories of people in the average annual income. Table 5.16 and Table 5.17 represent annual average income of different categories of households of villages with allotment of irrigated land and villages with un-irrigated villages respectively. Here also in both the sets of villages, the income of the OC household is much more than that of the other two categories of people. After displacement the decrease in income is found to be more than SC and ST households.

Tables 5.18, 5.19, 5.20, 5.21, 5.22 and 5.23 show the income of the various categories of households source wise

Table 5.18: Sources of Income of the OC Households in the Villages with the Allotment of Irrigated Land

		Primary Occupation											
		Agriculture		**Wage Labor**		**Business**		**Service**		**Others**		**Total**	
		Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
No of HH / Income (Rs)		35	23	12	17	Nil	Nil	02	04	01	06	50	50
Agriculture	Before	7,95,020 (89.55)		9561 (6.95)		Nil		12,384 (2859)		Ni		8,16,965 (75 66)	
	After	4,83,218 (86.98)		19,560 (13.56)		Nil		6,413 (18.28)		6,066 **(25.65)**		5,15,257 (67.93)	
Wage Labor	Before	19,379 (116)		1,06,017 (77.15)		Nil		Nil		Nil		1,25,396 (1161)	
	After	26,918 (4.84)		1,00,102 (69.39)		Nil		Nil		Nil		1,27,020 (1674)	
Forest	Before	34,117 (3.84)		11,153 (8.11)		Nil		Nil		1,514 (13.33)		46,784 (4.33)	
	After	14,423 (2.59)		20,045 (13.89)		Nil		1,418 (403)		4,248 (17.96)		40,134 (529)	
Business	Before	Nil		Nil		Nil		Nil		Nil		Nil	
	After	Nil		Nil		Nil		Nil		Nil		Ni	
Others	Before	23,164 (2.60)		10,673 (7.76)		Nil		1,256 (289)		9,840 (86,66)		44,933 **(416)**	
	After	Nil		1702 (1.17)		Nil		Nil		13,333 (56.38)		15,035 (1.98)	
Service	Before	16,018 (1.80)		Nil		Nil		29,674 (68.50)		Nil		45,692 (423)	
	After	30,987 (5.57)		2837 (1.96)		Nil		27,241 (77.67)		Ni		61,065 (8.05)	
TOTAL	Before	8,87,698 (100.0)		1,37,404 (100.0)		Nil		43,314 (100.0)		11,354 (100.0)		10,79,770 (100 0)	
	After	5,55,546 (100.0)		1,44,246 (100.0)		Nil		35,072 (100.0)		23,647 (100.0)		7,58,511 (100 0)	

Table 5.19: Sources of Income of the SC Households in the Villages with the Allotment of Irrigated Land

		Primary **Occupation**											
		Agriculture		Wage **Labor**		Business		**Service**		Others		Total	
		Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
No of HH / Income (Rs)		08	12	10	06	Nil	Nil	Nil	Nil	Nil	Nil	18	18
Agriculture	**Before**	1,02,875 (93.2)		3,406 (6.70)		Nil		Nil		Nil		1,06,281 (65 96)	
	After	86,320 (80.93)		3,490 (8.83)		Ni		Nil		Nil		89,810 (61.44)	
Wage Labor	Before	Nil		41,104 (80.96)		Nil		Nil		Nil		41,104 (25.51)	

		Primary Occupation											
		Agriculture		**Wage** Labor		**Business**		**Service**		**Others**		**Total**	
		Before	After	Before	After	Before	**After**	Before	After	Before	After	Before	**After**
[H Income (		08	12	10	06	Nil	Nil	Nil	Nil	Nil	Nil	18	18
	After	8,002 (7.50)		30,533 (77.26)		Nil		Nil		Nil		38,535 (26.36)	
Forest	Before	7,479 (6.77)		6,260 (1233)		Nil		Nil		Nil		13,739 **(8.52)**	
	After	12,325 (11.55)		5,493 (13.90)		Nil		Nil		Ni		17,818 (1219)	
Business	Before	Nil		Nil		Nil		Nil		Nil		Nil	
	After	Nil		Nil		Nil		Nil		Nil		**Nil**	
Others	Before	Nil		Ni		Nil		Nil		Nil		Nil	
	After	Nil		Nil		Nil		Ni)		Nil		**Nil**	
Service	Before	Nil		Nil		Nil		Nil		Nil		**Nil**	
	After	Nil		Nil		Nil		Nil		Nil		Nil	
TOTAL	Before	1,10,354 (100.0)		50,770 (100.0)		Nil		Nil		Nil		1,61,124 (100 0)	
	After	1,06,647 (100.0)		39,516 (100.0)		Nil		Nil		Ni		1,46,163 (100.0)	

Table 5.20: Sources of Income of the ST Households in the Villages with the Allotment of Irrigated Land

		Primary Occupation											
		Agriculture		Wage Labor		Business		**Service**		Others		**Total**	
		Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
No of HH Income (Rs)		08	14	21	15	Nil	Nil	Nil	Nil	Nil	Nil	29	29
Agriculture	**Before**	62679 (80.27)		Nil		Nil		Nil		Nil		62,679 (26.25)	
	After	86902 (89.54)		9528 (15.44)		Nil		Nil		Nil		96,430 (6074)	
Wage Labor	**Before**	6661 (8.53)		1,43,564 (89.35)		Nil		Nil		Nil		1,50,225 (6292)	
	After	4767 (4.81)		4,00,65 (64.95)		Nil		Nil		Ni		44,832 (2824)	
Forest	**Before**	8743 (11.19)		1,71,00 (10.64)		Nil		Nil		Nil		25,843 (10.82)	
	After	5384 (5.54)		Nil		Ni		Nil		Nil		5384 (339)	
Business	**Before**	Nil		Nil		Nil		Nil		Nil		Ni	
	After	Nil		Nil		Nil		Nil		Nil		Nil	
Others	**Before**	Nil		Nil		Ni		Nil		N		Nil	

		Primary Occupation											
		Agriculture		Wage Labor		Business		Service		Others		Total	
		Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
Income (Rs)		08	14	21	15	Nil	Nil	Nil	Nil	Nil	Nil	29	29
	After	Nil		Nil		Nil		Nil		Nil		Nil	
Service	Before	Nil		Nil		Ni		Nil		Nil		Nil	
	After	Nil		Nil		Nil		Nil		Nil		Nil	
TOTAL	Before	78,083 (100.0)		1,60,664 (100.0)		Nil		Nil		Nil		2,38,747 (1000)	
	After	97,053 (100.0)		61,681 (100.0)		Nil		Ni		Nil		1,58,734 (100 0)	

Table 5.21: Sources of Income of the OC Households in the Villages with the Allotment of Un-Irrigated Land

		Primary Occupation											
		Agriculture		Wage Labor		Business		Service		Others		Total	
		Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
No of HH / Income (Rs)		42	31	01	04	Nil	Nil	Nil	08	Nil	Nil	43	43
Agriculture	Before	12,00,364 (90.96)		Nil		Nil		Ni		Nil		12,00,364 (81 09)	
	After	2,21,793 (80.17)		9528 (15.44)		Nil		47,871 (3280)		Nil		2,79,192 (57,65)	
Wage Labor	Before	26,305 (2.0)		1,43,564 (89.35)		Nil		Nil		Nil		1,69,869 (11.47)	
	After	14,883 (5.37)		4,00,65 (64.95)		Nil		2,014 (1.37)		Nil		56,962 (11.76)	
Forest	Before	40,505 (3.06)		1,71,00 (10.64)		Nil		Nil		Nil		57,605 (3.89)	
	After	23,860 (8.62)		Nil		Nil		3,268 (223)		Nil		27,128 (560)	
Business	Before	Nil		Nil		Nil		Nil		Nil		Nil	
	After	2724 (10)		Nil		Nil		Nil		Nil		2,724 (0 56)	
Others	Before	Nil		Nil		Nil		Nil		Nil		Nil	
	After	Nil		Nil		Ni		Nil		Nil		Nil	
Service	Before	52,384 (3.96)		Nil		Nil		Nil		N		52,384 (353)	
	After	13,393 (4.84)		Nil		Nil		92,791 (63.57)		Nil		1,06,184 (21 92)	
TOTAL	Before	13,19,558 (100.0)		1,60,664 (100.0)		Nil		Nil		Nil		14,80,222 (100 0)	
	After	2,76,653 (100.0)		61,681 (100.0)		Nil		1,45,944 (100)		Nil		4,84,278 (100 0)	

Table 5.22: Sources of Income of the SC Households in the Villages with the Allotment of Un-Irrigated Land

		Primary Occupation											
		Agriculture		Wage Labor		Business		Service		Others		Total	
		Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
Income (Rs)		14	11	03	04	Nil	Nil	Nil	01	Nil	01	17	17
Agriculture	Before	1,83,014 (78.47)		Nil		Nil		Nil		Nil		1,83,014 (74.40)	
	After	54,321 (62.57)		4,880 (29.67)		Nil		Nil		Nil		59,201 (43.56)	
Wage Labor	Before	30,673 (13.15)		10,900 (85.30)		Ni		Nil		Nil		41,573 (16.90)	
	After	17,877 (20.59)		9,363 (56.94)		Nil		6,351 (35.94)		4,769 (31.85)		38,360 (28.22)	
Forest	Before	19,515 (8.36)		1,877 (14.69)		Nil		Nil		Nil		21,392 (869)	
	After	11,297 (13.01)		2,200 (13.37)		Nil		1,101 (6.23)		1,120 (7.48)		15,718 (11.56)	
Business	Before	Nil		Nil		Nil		Nil		Nil		Nil	
	After	Nil		Nil		Nil		Nil		Nil		Nil	
Others	Before	Nil		Nil		Nil		Ni		Nil		Nil	
	After	3,320 (3.82)		Nil		Nil		Nil		9,083 (60.66)		12,403 (9.12)	
Service	Before	Nil		Nil		Nil		Nil		Nil		Nil	
	After	Nil		Nil		Nil		10,215 (57.81)		Nil		10,215 (7.51)	
TOTAL	Before	2,33,202 (100.0)		12,777 (100.0)		Nil		Nil		Nil		2,45,979 (100.0)	
	After	86,815 (100.0)		16,443 (100.0)		Nil		17,667 (100.0)		14,972 (100.0)		1,35,897 (100.0)	

Table 5.23: Sources **of Income of the** ST **Households in the** Villages **with the Allotment of Un-Irrigated Land**

						Primary Occupation							
		Agriculture		Wage Labor		Business		Service		Others		Total	
		Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
No of HH / Income (Rs)		14	11	07	10	Nil	Nil	Nil	Nil	Nil	Nil	21	21
Agriculture	Before	1,69,332 (77.42)		17,032 (19.41)		Nil		Nil		Nil		1,86,364 (60 81)	
	After	39,643 (62.21)		12,292 (19.13)		Nil		Nil		Nil		51,935 (40.59)	
Wage Labor	Before	36,522 (16.69)		61,468 (70.07)		Nil		Nil		Nil		97,990 (31.97)	
	After	13,626 (21.38)		42,905 (66.80)		Nil		Nil		N		56,531 (44.18)	
Forest	Before	12,853 (5.87)		9,220 (10.51)		Nil		Nil		Nil		22,073 (7.20)	

		Primary Occupation											
		Agriculture		Wage Labor		Business		Service		Others		Total	
		Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
No of HH / Income (		14	11	07	10	Nil	Nil	Nil	Nil	Nil	Nil	21	21
	After	6,628 (10.40)		7,328 (11.40)		Nil		Nil		Nil		13,956 (10 90)	
Business	Before	Nil		Nil		Nil		Nil		Nil		Nil	
	After	1,349 (2.11)		Nil		Nil		Nil		Nil		1,349 (1.05)	
Others	Before	Nil		Nil		Nil		Nil		Nil		Nil	
	After	2,474 (3.88)		Nil		Nil		Nil		Nil		2,474 (1.93)	
Service	Before	Nil		Nil		Nil		Nil		Nil		Nil	
	After	Nil		1,702 (2.64)		Nil		Nil		Nil		1,702 (1.33)	
TOTAL	Before	2,18,707 (100.0)		87,720 (100.0)		Nil		Nil		Nil		3,06,427 (100.0)	
	After	63,720 (100.0)		64,227 (100.0)		Nil		Nil		Nil		1,27,947 (100 0)	

From the above all tables it has been seen that, there is a decline in the income of displaced families in the post displacement period. Household income is the most important variable in examining the dimension of change. Here the income of each household in the pre-displaced period has calculated by using the per acre yield. Real incomes of the pre-displaced period of the households from different activities have been calculated by using wholesale price index of all commodities with 1980-81 as the base year. Income from the various sources, which is shown in the above table, has explained in the following broad heads which are as follows:

Agriculture

In the pre-displaced period, out of the total income, the OC people, who had agriculture as their primary occupation, derived 89.55% of the income from agriculture in the villages with allotment of irrigated land and 90.96% of the total income in the villages with allotment of un-irrigated land. But in the post- displacement period, the percentage of income of agriculture has decreased to 86.98% incase of villages with allotment of irrigated land and 80.17% in villages with distribution of un-irrigated land. Incase of SC households also the percentage share of income from agriculture has decreased from 93.2% to 80.93% in case of villages with irrigated land and 78.47% to 62.57% in those

villages with distribution of un-irrigated land. So far as ST households are concerned, the share of income from agriculture out of the total income has increased from 80.27% to 89.54% in the villages with allotment of irrigated land but in the other category of villages the income from agriculture has decreased from 77.42% to 62.21%.

Forestry

So far as income from forestry is concerned, in all the villages with allotment of un-irrigated land, the share of income from forest has increased from 3.06% to 8.62% incase of OC, 8.36% to 13.01% incase of SC and 5.87% to 10.40% incase of ST households. This is only because of the poor quality of land distribution, people's dependence of forest has increased.

Sale of Labor

As the total of 178 households surveyed, 42 households were landless and 54 were marginal farmers (i.e. having land holding up to 2 ac). The major sources of income earned by these people were by selling of their labour. Hence as can be seen from the above tables, the share of income from selling of labour has decreased in case of all the households. The basic reason behind this is that the SC and ST households are cultivating their own land and some of the OC households are doing government jobs. Another interesting thing is that before displacement, maximum of the households, who were primarily working as wage labour, did not earn anything from agriculture but in the present scenario, apart from wage, they are earning from agriculture also.

Service

In the case of Rengali Dam, nobody has got any kind of job in the project. At the time of construction of the dam, some people were working there as temporary worker. But over a period of time, the nature of work is permanent. Apart from this, some other people are there who are working as teachers, forest guards, railway carpenter, peon and etc.

Other

In this category work like temporary business (like selling of ice cream, bread and etc), jajmani and etc are included.

Part-II

Impact Assessment

5.2.0 Introduction

Displacement brings about profound changes in the life process of displaced persons (Swain, 2001). In numerous case studies the economic, social and cultural impacts of displacement have been vividly depicted (Asthana, 1996; Thukral, 1992; Reddy, 1992). It is very difficult to quantify social and cultural loss due to displacement. But the economic impact of displacement can be quantified. In this part an attempt has made to measure the economic gain and loss of the displaced people.

There is visible differentiation among various castes of households in accordance with the annual income (Table 5.15). Prior to displacement the annual average income of the OC households is found to be much higher than the ST and SC households. Even after displacement also the per capita income of the OC people are still more than that of the other two categories of people but the inequality among them has decreased to a larger extent. To test the variability of income of different categories of people due to dam construction is another objective of the study. To analyze this objective four different statistical methods are used which are (i) Coefficient of variation; (ii) Pareto distribution; (iii) Lorenz curve; (iv) Ginni's coefficient.

5.2.1 Inequality Among the Displaced People Due to Dam Construction

(i) Coefficient of variation

As has been stated earlier, Coefficient of Variation (CV) is a measure of inequality, it is applied here to study income differential of different categories of households before and after displacement. The detail of the result is given in Table 5.24.

Table 5.24: Income Differential Of Different Categories of Households

Types of Villages	Caste	No. of Households	Coefficient of Variation	
			Before	After
A. *Villages with allotment of Irrigated Land*	ST	29	44	63
	SC	18	63	85
	OC	50	79	122
B. Villages with allotment of Un-irrigated Land	ST	21	62	35
	SC	17	43	37
	OC	43	63	68
Total	ST	50	63	54
	SC	35	56	72
	OC	93	71	111

From the Table 5.24, it is seen that CV of ST people has decreased from 62 to 35 incase of villages with allotment un-irrigated land and 43 to 37 incase of SC in the villages with allotment of un-irrigated land. CV has increased incase of OC households in both the types of villages. So far as villages with allotment of irrigated land is concerned, CV of all the types of households has increased i.e. 44 to 63 for ST, 63 to 85 for SC and 63 to 68 incase of OC households. The only reason behind this increase in CV in the irrigated villages is that these sets of villages are a combination of three villages where two villages are situated in tail area of the canal and one is in the head area. The income of the households of the villages situated in the head area of the canal is much more than that of the income of other two villages situated in the tail area of the canal. Hence there is a disparity of income among the people of these three villages as a result the CV of all the categories of people has increased. From this, it is concluded that the distribution of income of the ST people after displacement is less variable than the other two communities (OC and SC).

This is because in Rengali dam, agricultural land and homestead land has been provided even to those who were landless (maximum of them are ST), there could be a net positive impact. Also, where the marginal farmer was given land in excess of his/ her original holdings; there could be a net positive impact.

From this it is concluded a structural change has been taken place among people i.e. the earlier land system favored the OC people but not to the ST people but the present land system favors the ST people.

(ii) Pareto distribution

Here to get the Pareto coefficient a log- linear regression is done in both pre-displaced period as well as in the post-displaced period. The following results are obtained from the regression, which is presented in Table 5.25.

Table 5.25: Regression Result of Pareto Distribution in AH the Six Villages

Variable	Coefficient		t-statistics		R-square	
	Before	After	Before	After	Before	After
Constant	5.878	8.352	12.899*	53.526*	0.930	0.983
Log (Income range)	-1.832	-1.781	-9.454*	-43.081*		
	* Represents significance level at 1%					

From Table 5.25, we have got the Pareto coefficients for both the periods (i.e. for pre-displaced and for post-displaced) and those are (-1.832) for pre-displaced period and (-1.781) for post-displaced period. Here the post-displaced coefficient is greater than the pre-displaced coefficient. . . Hence from this, it is concluded that the larger the value of Pareto coefficient, the less unequal the distribution is. That means the post-displaced income distribution is less unequal compared to the pre-displaced income distribution.

The regression results *of pareto* distribution for irrigated villages and un-irrigated villages has been also done separately and the result has been presented in Table 5.26 and Table 5.27.

Table 5.26: Regression Result of Pareto Distribution of Irrigated Villages

Variable	Coefficient		t-statistics		R-square	
	Before	After	Before	After	Before	After
Constant	2.389	2.312	6.419*	9.004*	0.43	0.37
Log (Income range)	-0.34	-0.23	-3.053*	-3.367*		
* Represents significance level at %						

Table 5.27: Regression Result of Pareto Distribution in Un-irrigated Villages

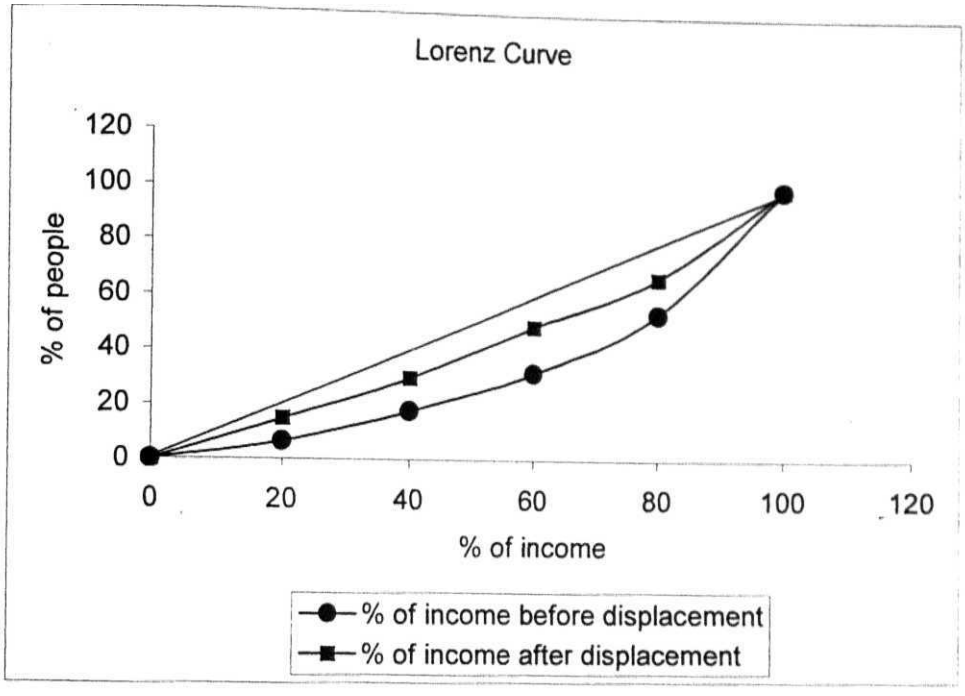
Variable	Coefficient		t-statistics		R-squarc	
	Before	After	Before	After	Before	After
Constant	2.597	2.452	6.13*	5.92*	0.40	0.34
Log (Income range)	-0.445	-0.371	-3.84*	-3.36*		
* Represents significance level at %						

The Pareto coefficient has increased in both the type of villages. For the villages with allotment of irrigated land the coefficient has increased from (-0.34) to (-0.23) and (-0.445) to (-0.371) for the villages with allotment un-irrigated land. From these above tests, it can be concluded that the post-displacement income distribution has less fluctuation.

(iii) Lorenz Curve

By taking income distributions of pre-displaced period and post-displaced period, the Lorenz curve is drawn. The figure is presented below:

Figure 5.1: Lorenz Curve for All the Six Villages



Here in the Figure 5.1, percentage of income has been taken in X-axis and percentage of people has been taken in Y-axis.

From the figure it is seen that, the Lorenz curve has been shifted towards the line of equality, after displacement. Hence the post displacement income distribution is approaching towards equality, which means that inequality has decreased. The individual Lorenz Curve for the two types of villages are given in the following Figure 5.2 and Figure 5.3 as below:

Figure 5.2: Lorenz Curve for the Irrigated Village

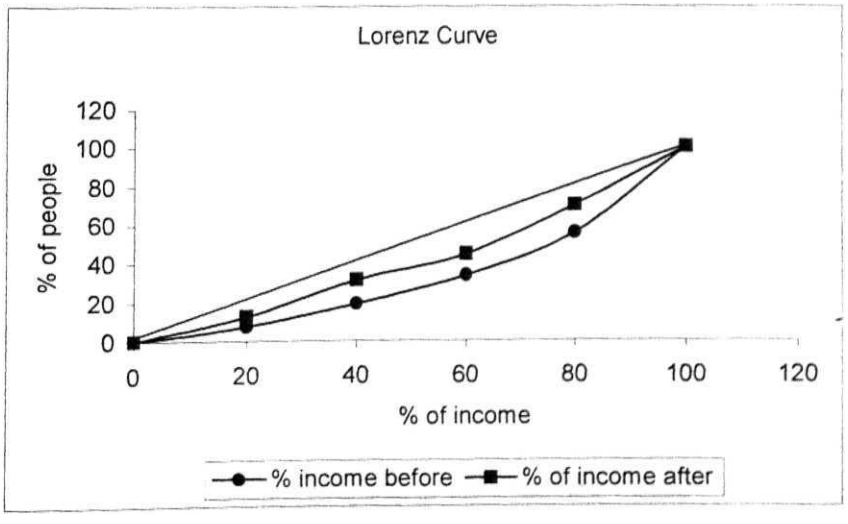
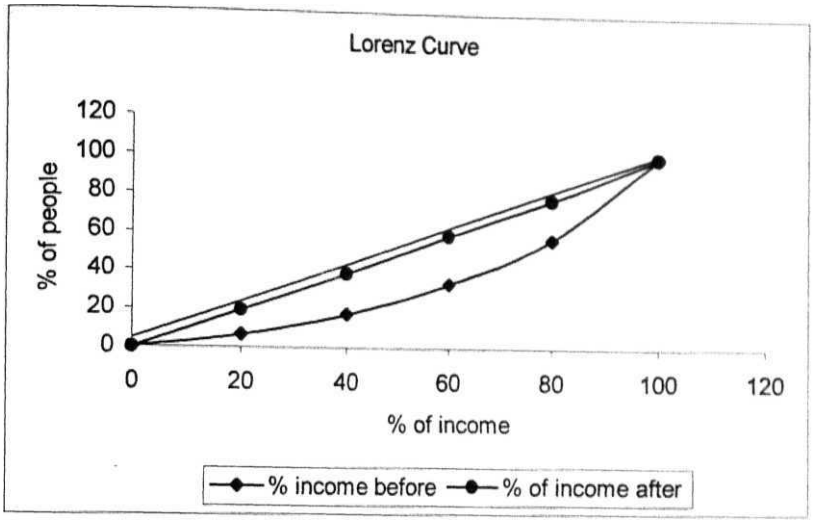


Figure 5.3: Lorenz Curve for the Un-irrigated Village



In both the cases the Lorenz curve has shifted towards the line of equality. This is only because here agricultural and homestead land was provided even to landless people also as a result there could be a net positive impact. In so far as the allotment of land was restricted to a maximum limit and people who owned more than the limit was only given land up to the prescribed limit, the impact on the large landholders was negative,

(iv) Ginni's Coefficient

To support the above test, Ginni'e coefficient has found out in the formula cited in the methodology section of Chapter-I. Ginni's coefficient (G) is equal to zero in equal distribution and its value goes up with increase in inequality.

Table 5.28: Ginni's Coefficient for ST, SC and OC Households of Rengali Dam

SI	Ginni's Coefficient	ST		SC		OC	
No		Before	After	Before	After	Before	After
1	Irrigated Villages	0.33	0.51	0.31	0.38	0.22	0.29
2	Un-irrigated Villages	0.32	0.31	0.25	0.21	0.19	0.30
3	Total	0.30	0.25	0.29	0.32	0.06	0.15

Here in the study, in the case of ST households G has increased from 0.33 to 0.51 in the villages with irrigated land and decreased from 0.32 to 0.31 in the villages with allotment of un-irrigated land. In case of SC, the G has increased in irrigated villages but

decreased from 0.25 to 0.21 in villages with un-irrigated land. So far as OC households are concerned, the G has increased from 0.22 to 0.29 and 0.19 to 030 respectively. The main reason behind more value of G in irrigated villages is same as discussed above i.e. these three villages are different in nature so far as getting irrigation facility is concerned. The villages situated in the head area of the canal get more water than that of the other two villages situated in tail area of the canal as a result the income of that village more than that of the later two villages. From all those tests, it is concluded that the post-displaced income is less unequal than that of the pre-displaced income.

5.2.2 Impact of the Dam Construction on the People

To analyze the implementation of rehabilitation policy measures and their impact on the economic and social life of the displaced people, M.M Cernea's Risk model is used here. The model is tested on the basis of data from the six village case studies. The following part explains the model.

5.2.2.1 Cernea 's Risk Model

One of the most commonly used approaches to displacement- related problem is the 'risk-modeP propounded by Cenrea (1990, 1995, 1996b, 1997b). The main concepts used in the formulation of this theoretical model are 'risk', poverty or 'impoverishment' and 'reconstruction' and each of it receives and explanation.

Risks

Risks are seen as " probabilities of physical harm due to given technological or development or other processes". In other words, risk as a concept refers to a potentiality, to something that may occur, but has not yet happened (Cernea, 1996). The literature on the conceptual definition of "risk" is vast, and the modern society itself is more and more defined as the "risk society" (Beck, 1990), Frequently the terms "risk", "danger" or "hazard" are used as interchangeable and overlapping. Gidden (1990) explicitly rejects the distinction between risk and danger. Other researchers, however, argue that in some situations a difference exists, and define risk as the probability of an injurious effect resulting from a hazard (Kalpan and Garrick, 1981). Consonant with most of the risk literature, risk may be defined as the possibility embedded in a certain course of social action to trigger adverse effects. The notion of risk contains room for vast amounts of information about both current circumstances and emerging trend.

Impoverishment

It implies situation in which people's livelihood worsen as a result of a specific intervention. Development programmes are not supposed to induce poverty or impoverishment. Yet under some circumstances such impoverishment processes do occur, conflicting with the very essence and stated goals of development programmes. Under new infrastructure programmes in developing countries such impoverishment processes, unfortunately, are frequent and large. This is why preventing impoverishment must be regarded as the central issue in development induced displacements and relocations. Displacement in developing countries mostly affect people who are already below the poverty line. Rendering poor people even more impoverished is unacceptable. Even those who are above poverty line, when forcibly displaced, may end up chronically worse off, marginalized, victimized and impoverished. Therefore targeted measures- economic, technical, legal and cultural must be undertaken to orient from the outset to plan for resettlement that incorporates reconstruction of livelihood of those affected. Historical experience shows that the risks of impoverishment and social disruption turn into painful reality. In India, some researchers found that as many as 75% of the 20 million people displaced by development programmes have been only physically relocated but have not been rehabilitated in a socio- economic sense (Fernandes, 1991).

The problem is that when officials and developers decide to launch a programme entailing displacement, they inflict impoverishment risks not on themselves, but on the people who will be displaced. These people are subjected to huge risks, typically without their knowledge, participation or consent about the project affecting them. This is why it is incumbent upon the programme sponsors- the states, officials or private developers- to counteract the risks and provide full socio-economic protection to the people they put at risk

Reconstruction

The risk and reconstruction model for resettling displaced population derives its strength from complementing risk diagnosis with the concepts for reconstruction. The model is not just a predictor of inescapable pauperization; it is a guide toward counteracting the risks and resolving the problems that displacement creates.

The primary objective of any induced involuntary resettlement process should be to prevent impoverishment and to reconstruct and improve the livelihood of resettles.

Cernea has suggested different possible ways for the reconstruction of the livelihood of the displaced people due to involuntary resettlement and those are (i) from landlessness to land-based re-establishment; (ii) from joblessness to re-employment; (iii) from homelessness to house construction; (iv) from disarticulation to community reconstruction; (v) from marginalization to social inclusion; (vi) from expropriation to restoration of community assets; (vii) from food insecurity to adequate nutrition; and (viii) from morbidity to better health care.

5.2.2.2 Risks and Reconstruction Model

The occurrence of impoverishment and its prevention i.e. how can the livelihoods of displaced people be reconstructed, is the basic question that confronted social researchers, policy makers and planners. Relying on much of worldwide displacement research and his own field experience, Cernea (1996) has proposed a conceptual model for analyzing the socio-economic content of displacement. The model anticipates displacement's major risks, explains the behavioral responses of displaced people and can guide the reconstruction of resettlers' livelihoods. This conceptual framework could be named "the risks and reconstruction model" for resettling displaced people.

The four distinct but interrelated functions, which the risks and reconstruction model can perform, are best described according to Cernea as:

i. A diagnostic- explanatory and cognitive- function;
ii. A predictive- warning and planning- function;
iii. A problem- resolution function for guiding and measuring resettled reestablishment; and
iv. A research function for forming hypotheses and conducting theory-led field investigation.

A brief characterization of each function of the model is given as follows:

(i) The diagnostic- explanatory and cognitive- capacity of the model rests on the mountain of analytical evidence gathered through research on past resettlements. As a cognitive and explanatory tool, the model diagnoses the recurrent pathologies of forced displacement. Beyond the enormous diversity in individual country and project- specific situations, the comparison revealed a number of basic regularities. On the basis of these observations Cernea identifies eight general sub processes or trends, whose convergent and cumulative effect trigger rapid onset of impoverishment (Cernea, 1995, Cernea, 1995b). Before the displacement operation actually begins, these processes are only

impending social hazards. But if appropriate counteractions ate not initiated, these social hazards become actually impoverishment disasters. The main assumption in the model is that displacement (with no or poorly- handled resettlement) results in eight main risks of impoverishment: landlessness; joblessness; homelessness; marginalisation; increased morbidity and mortality; food insecurity; loss of access to common property and services; and social disarticulation. Cernea (1995) observes that these are high-probability risks and 'will undoubtedly become real if unheeded, or can be avoided if anticipated and purposively counteracted'. If this warning is acted upon to reverse the consequences through proper policy measures, Cernea claims that the risk-model becomes a 'self-destroying prophecy'. In fact, the reversal of the risk model- i.e. countering landlessness through land-based resettlement or homelessness through sound shelter programmes- helps in identifying exactly what needs to be done to avoid the risks of impoverishment.

By considering these risks in their totality and interconnection, we have in essence the model of impoverishment and social disruption that characterizes so many forced displacements and their effects on the affected populations. But these potential risks need not a reality. The path of a 'risk' becoming 'reality' can be broken. It can be interrupted through responsible policy, through good planning and targeted preventive measures, through adequate resource allocation and through the mobilization of resettlers' and hosts' participation and energies. When such policies and measures are not adopted, however, the path from 'risks' to 'reality' goes unbroken, the risks becoming the reality.

(ii) The model's predictive capacity rests on converting the diagnosis into a prognosis for better planning. By incorporating information about the outcomes of many prior displacements, the model predicts further outcomes certain to occur if its warnings are ignored. Without counteraction, these potential impoverishment risks will turn into real and hard deprivation. It provides early warnings about adverse effects long before the decision to displace is made. It equips the planners with better understanding and anticipation power. The practical utility of this function is that it enables planners, as well as would- be displaced, to recognize the impoverishment risks in advance, search for alternatives to avoid displacement, and/or respond with effective mitigatory or coping strategies.

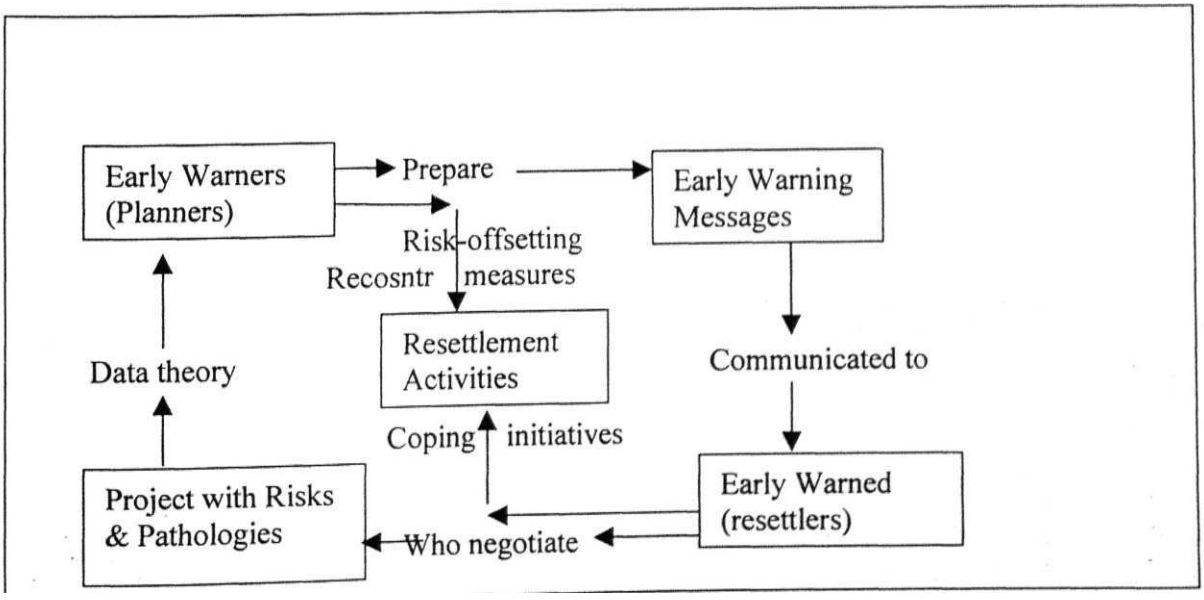
Communication between planners and resettlers is instrumental for effective early warning and for making possible joint preventive activities. Here Cernea (1996) uses the

term "communication" in its broad sense, which means transparent information (regarding the causes of displacement and its likely impact); **consultation** between planners **and** affected groups of resettles, hosts and their organizations; and genuine participation in finding acceptable solutions.

Dysfunctional relationships between planners and groups affected by displacement are one of the roots of resettlement failure. It should not be surprising that absence of, or breakdowns in communication processes tend to result in 'reversed participation', i.e. in active opposition movements against development programmes, as analyzed pertinently by Oliver Smith (1994). To reinforce the argument, good communication is indispensable for actualizing the preventive potential of the 'risk and reconstruction model'. Cernea used a representation of warning communication adapted with modifications from a study on early warning mechanisms by Galtung (1994). The opportunity for counteraction and mitigation is much larger in the case of social risks than in natural disasters and the benefits from advance warning can be vast.

Galtung's key point is that situations that require "early warnings" and "preventive therapies" are basically similar for different categories of disorders. They imply interaction between four elements: "the situation" (which in our case is the project), "the warners", "the warning" and "the warned". Further the warning process should function rapidly, moving as fast as possible the information about the "situation pathology" from the warners to the "early warned", which are the population at risk. This is shown in Figure-5.2

Figure-5.2: Risk warning, Offsetting and Coping: Communication and Action



In this case, a displacement risk situation, the loop is more complex but also requires quick and full warning and communication. The warners (the displacement planners in this case), must not only issue warnings, but also prepare actual risk-offsetting reconstructive programmes. In the above figure, the population at risk has two strategy loops and they are (i) to negotiate with the source of risks and (ii) a parallel one to develop its own actual coping responses.

The crucial point that Cernea wants to emphasize, using the analogy with Galtung's argument, is the enormous importance of early systematic warning through transparent communication: only such warning gives full advance time to the resettlers, both to negotiate with the project, and to initiate their own coping activities.

Lastly, the model's predictive capacity to warn early, trigger action, and inform the adoption of targeted counter-risk measures is exceptionally important and can greatly influence the final outcome of resettling displaced people.

(iii) The Problem- Resolution Function: The problem- resolution capacity results from the model's analytical incisiveness and its explict action orientation. The model is formulated with awareness of the social actors in resettlement, their interaction, communication, and ability to contribute to resolution. To achieve problem resolution, the part of the model that identifies pauperization risks must be fully reversed, "stood on its head", as will be shown further. As a result, the practical utility of the model increases greatly by moving from prediction and diagnosis to prescription for action. The model becomes a compass for strategies to reconstruct resettlers' livelihoods, 'pushing' beyond immediate relief mechanisms and making possible a redevelopment orientation.

(iv) The Research Function: For social researchers, the impoverishment and risk model provides conceptual scaffolding for conducting and organizing their theory- led fieldwork. The model stimulates the generation of hypotheses about relations between key variables in both displacement and relocation between key variables in both displacement and relocation. It facilitates the exploration of mutual linkages of and the reciprocal reinforcement on weakening effects between related works.

The research utility of the model comes from its ability to guide data collection in the field and coherently aggregate disparate empirical findings along the model's key variables. It also makes possible comparisons of responses to risks across cultures, countries and time periods.

5.2.23 Ex post-facto Application of the Risk Model in Rengali Dam

Although Cernea developed his model as an ex ante devise to plan for resettlement and rehabilitation, it is adopted here as an ex-post- facto application to the Rengali Dam. The justification is that Cernea's systematic analysis of the components of risks and the strategies to counter them also helps to identify the failures and successes of a project already implemented as well. Thus, Cernea's model is used here as a tool of evaluation resettlement record of the Rengali Dam.

As discussed earlier, the eight risks, which contribute to the impoverishment of the displaced people in a development project are: (i) landlessness; (ii) marginalisation; (iii) loss of access to common property resources; (iv) social disarticulation; (v) food insecurity; (vi) increased morbidity; (vii) homelessness; and (viii) joblessness. Based on the information from the six affected villages under the Rengali Dam, the magnitude of these eight risk factors are set out here. The risks factors in the context of Rengali Dam by taking the 6-resettled villages have been tested and has also finally focused on the basis of its findings how the risks factors can be guided from projects formulation stage till implementation stage in future projects to overcome impoverishment and make Resettlement and Rehabilitation successful. The details are given as follows:

(i) Landlessness

Expropriation of land removes the main foundation upon which people's productive systems; commercial activities and livelihoods are constructed. This is the principal form of decapitalization and pauperization of displaced people, through loss of both physical and man-made capital (Cernea, 1997).

For analyzing landlessness in the present study legal land holding has been taken as the sole variable.

Table 5.29: Land Holding (Acre) of Different Categories of People in the Six Villages

HH category	Total no of HH	Number of HH with Land				Average Area		% Change in	
		Before		After		Before	After	Total Area	Average size
		Number	Area	Number	Area				
ST	50 (28.08)	32 (23.52)	66.25 (12.62)	47 (27.64)	181.6 (24.57)	2.07	3.86	174	86.47
SC	35 (19.66)	22 (16.17)	56.75 (10.81)	32 (18.82)	130.0 (17.59)	2.57	4.06	129	57.97
OC	93 (52.24)	82 (60.29)	401.9 (76.56)	91 (53.52)	427.3 (57.82)	4.90	4.69	6.31	-4.28
Total	178 (100)	136 (100)	524.9 (100)	170 (100)	739.0 (100)	3.85	4.34	40.78	12.72

Table 5.30: Land Holding (Acre) of Different Categories of people in both Irrigated and Un-irrigatcd villages

Type of villages	Caste	Total no. of HH	No. of HH with Land				Average Area		% Change in	
			Before		After		Before	After	Total Area	Average Area
			No	Area	No	Area				
A. Households with allotment of Irrigated Land	ST	29	14	19.25	27	83.5	1.37	3.09	333	125.5
	SC	18	08	24.5	15	46.0	3.06	3.06	87.75	**0**
	OC	50	40	149.4	48	180.5	3.73	3.76	20.8	0.80
Sub-Total		97	62	193.15	90	310.0	3.11	3.44	60.49	10.61
B. Households with allotment of Un-Irrigated Land	ST	21	18	47.0	21	98.1	2.61	4.67	108.72	78.92
	SC	17	14	32.25	17	84.0	2.30	4.94	160.46	114.78
	OC	43	42	252.5	42	246.8	6.01	5.87	-2.25	-2.32
Sub-Total		81	74	331.75	80	429.1	4.48	5.36	29.34	19.64
Grand Total		178	136	524.9	170	739.0	3.85	4.34	40.78	12.72

It is revealed from Table 5.29 that the average legal land holding of the displaced people in the new relocated site has increased from 3.85 ac to 4.34 ac. The share of SC and ST households in the holding has increased from 12.62% to 24.57% in case of ST, 10.81% to 17.59% respectively. But in case of others (OC), the percentage share has decreased from 76.56% to 57.82%. There is a negative percentage change in the average land holding so far as OC households are concerned. In terms of land holding the STs and SCs are the gainers, with the STs registering a gain of 86.47% over their earlier holdings. The losers are the OCs.

Table 5.30 gives the average land holdings of the displaced households in both the types of villages. The average landholding of the people with allotment of irrigated land has increased from 3.11 ac to 3.44 ac and from 4.48 ac to 5.36 ac incase of villages with allotment of un-irrigated land. In both the types of villages, in landholding the ST and SC households are the gainers where as the net losers are the OC households.

This idea can be further supported by another two explanations by taking the changes in land of different size-class households. Here all the households are classified into 5-different economic class based completely on their landholding. Those are landless, marginal farmers (up to 2 ac), small farmer (2.01 ac to 5 ac), medium farmer

(5.01 ac to 10 ac) and large farmer (10.01 ac & above). A detailed analysis of changes in land of different size-class households are given in Table 5.31.

Table 5.31: Changes in Land of Different Size-Class Household in the Six Villages

SI No	Household Category	Before				After			
		No. Of Household	% share to total	Area (Acre)	% share to total	No. of household	% share to total	Area (Acre)	% share to total
1	2	3	4	5	6	7	8	9	10
(i)	Landless	42 (23.59)	-	-	-	08 (4.49)	-	.	-
(ii)	Marginal farmers	54 (30.33)	39.70	65.55	12.49	08 (4.49)	4.70	17.5	2.36
(iii)	Small farmers	58 (32.58)	42.64	206.17	39.29	93 (52.24)	54.70	286.5	38.76
(iv)	Medium farmers	17 (9.55)	12.50	121.07	23.07	68 (38.20)	40.00	422.0	57.10
(v)	Large farmers	07 (3.93)	5.14	131.85	25.13	01 (0.56)	0.58	13.0	1.75
Total	Household with land	136 (76.40)	100.0	524.64	100.0	170 (95.50)	100.0	739.0	100.0
Grand Total		178 (100.0)	-	-		178 (100.0)	-	-	-

Table 5.31 shows the total land within the village, possessed by the various categories of household before and after the displacement. The land possessed by the households, regardless of the category to which they belong, is more over the land they had earlier. It is noticed that there is an increase in land holdings of the people. In case of the large farmers there is a decline of land holdings but in case of medium, small, marginal farmers the landholdings have increased tremendously. This may be due to the land for land policy, which is the main objective of the rehabilitation policy. The following two Tables (5.32 and 5.33) show the changes in land of different class- size households separately in both the kinds of villages.

It is noticed that there is an increase in land holdings of the people in both types of villages. In case of the large farmers there is a decline of land holdings from 38.61 acres to 13 acres as the number have also decreased from 3 to 1 in the villages with allotment of irrigated land and the numbers of large farmers have decreased from 5 to nil in the villages with allotment of un-irrigated land but in case of small farmers and marginal farmers, the landholdings have increased tremendously.

Table 5.32: Changes in Land of different Size-Class Households with Allotment of Irrigated Land

SI No	Household Category	Before				After			
		No. of Household	% share to total	Area (Acre)	% share to total	No. of household	% share to total	Area (Acre)	% share to total
1	2	3	4	5	6	7	8	9	10
(0	Landless	35 (36.08)	—	…	…	07 (7.21)		…	…
(ii)	Marginal farmers	32 (32.98)	52	35.3	18	06 (6.18)	07	14.5	05
(iii)	Small farmers	21 (21.64)	34	69.37	36	75 (77.31)	83	226.5	73
(iv)	Medium farmers	07 (7.24)	11	49.87	26	08 (8.24)	09	56	18
(v)	Large farmers	02 (2.06)	03	38.61	20	01 (1.03)	01	13	04
Total	Household with land	62 (63.91)	100	193.15	100	90 (92.78)	100	310	100
Grand Total		97 (100)	—	…	—	97 (100)	—	…	…

Table 5.33: Changes in land of different size-class households with allotment of Un-Irrigated Land

SI No	Household Category	Before				After			
		No. of Household	% share to total	Area (Acre)	% share to total	No. of household	% share to total	Area (Acre)	% share to total
1	2	3	4	5	6	7	8	9	10
(i)	Landless	07 (8.64)	—	—	—	01 (1.23)	—	…	
(ii)	Marginal farmers	22 (27.16)	30	30.25	9.11	02 (2.46)	2.5	3.1	0.72
(iii)	Small farmers	37 (45.67)	50	136.8	41.23	18 (22.22)	22.5	60.0	14.0
(iv)	Medium farmers	10 (12.34)	14	71.46	21.54	60 (74.07)	7.5	366.0	85.0
(v)	Large farmers	05 (6.17)	07	93.24	28.0	Nil	Nil	Nil	Nil
Total	Household with land	74 (91.35)	100	331.75	100	80 (98.76)	100	429.0	100
Grand Total		81 (100)	…	—	…	81 (100)	…	…	…

Although the average legal landholding family has increased to a large extent as compared to the pre-displaced situation, yet because of the its highly infertile the

displaced households have not been able to fully overcome this risk factor. Hence, the project authorities to overcome this risk can follow the following factors:

(a) The land allotted in favour of the displaced should be fully reclaimed and leveled solely by the government before their shifting.
(b) The distributed in their favour should be in one or two patches in one village.
(c) Cultivable land should be allotted in the command area.
(d) The land distributed should be free from all the litigations.

(ii) Marginalisation

Marginalisation occurs when families lose economic power and slide on a 'downward morbidity' path. Many individuals cannot use their previously acquired skills at the new location and human capital is lost or rendered inactive, useless. The coerciveness of displacement also depreciates the image itself. Marginalisation materializes also in a drop in social status and in a psychological downward slide of resettlers' confidence in society and self, a sense of injustice, a premise of anomic behaviour. Relative economic marginalisation begins long before actual displacement, because of disinvestments and no investment in infrastructure and services in condemned areas (Cernea, 1997).

In the wake of displacement, change in status is inevitable (Reddy, 1992). This change is expressed in terms of the landholdings. Size of the holding is used to classify the farm households into large, medium, small and marginal farmers. The status of a household is thus directly related to the land it possesses. In the post displacement situation, status of the displaced has changed with the change in the size of their landholding, as seen in the following land mobility matrix in Table 534.

Table 5.34: Land Mobility Matrix of the Six Villages

(No. of Household)

SI No	Household category	After					TOTAL Before
		Large farmer	Medium farmer	Small farmer	Marginal farmer	Landless	
1	2	3	4	5	6	7	8
0)	Before Large farmer	01 (14.0)	05 (71.0)	01 (14.0)	Nil	Nil	07 (100)
(ii)	Medium farmer	Nil	11 (65.0)	05 (29.0)	01 (6.0)	Nil	17 (100)

SI No	Household category	After					TOTAL Before
		Large farmer	Medium farmer	Small farmer	Marginal farmer	Landless	
(iii)	**Small farmer**	**Nil**	**34 (59.0)**	**24 (41.0)**	**Nil**	**Nil**	**58 (100)**
(iv)	**Marginal farmer**	Nil	**16 (31.0)**	**34 (63.0)**	**03 (6.0)**	**Nil**	**54 (100)**
(v)	**Landless**	Nil	**02 (5.0)**	**29** (69.0)	**04 (10.0)**	**07 (17.0)**	**42 (100)**
TOTAL After		**01** (0.56)	**68** (39.0)	**93 (52.0)**	**08 (4.0)**	**07 (4.0)**	**178 (100)**

*Figure **in the parenthesis** indicates percentage of each category of household to the total*

From Table 5.34, it is seen that, the large farmers have lost their status except 1. Because after displacement 5 became medium farmer and 1 became small farmer, where as the number of medium farmers increased from 17 to 68. The number of small farmers increased from 58 to 93. Interestingly, the landless households have come down from 42 to just seven while five large farmers have become medium farmers. As can be from the above Table 5.34, deterioration in the status of large farmers is observed but in case of small fanners, marginal farmers and landless categories there is an improvement in the landholding. Table 5.35 and 5.36 show the status of land holding of the displaced households due to the construction of Rengali Dam in the case of two different sets of villages, one with distribution of land with irrigation facility and the other group of villages with allotment of land without irrigation.

Table 5.35: Land Mobility Matrix of the Households with Allotment of Irrigated Land

(No. of Household)

SI No	Household category	After					TOTAL Before
		Large farmer	Medium farmer	Small farmer	Marginal farmer	Landless	
1	2	3	4	5	6	7	8
(i)	Before Large farmer.	01 (50.0)	Nil	01 (50.0)	Nil	Nil	02 (100)
(ii)	Medium farmer	Nil	02 (28.57)	04 (57.14)	01 (14.28)	Nil	07 (100)
(iii)	Small farmer	Nil	05 (23.80)	16 (76.19)	Nil	Nil	21 (100)
(iv)	Marginal farmer	Nil	01 (3.12)	27 (84.37)	01 (3.12)	03 (9.37)	32 (100)

(v) Landless	Nil	Nil	27 (77.14)	04 (11,42)	04 (11.42)	35 (100)
TOTAL After	01 (1.03)	08 (8.24)	75 (77.31)	06 (6.18)	07 (7.21)	97 (100)

Figure in the parenthesis indicates percentage of each category of household to the total

Table 5.36: Land Mobility Matrix of the households with allotment of Un-Irrigated Land

(No. of Household)

SI No	Household category	After					TOTAL Before
		Large farmer	Medium farmer	Small farmer	Marginal farmer	Landless	
1	2	3	4	5	6	7	8
0)	Before Large farmer	Nil	05 (100.0)	Nil	Nil	Nil	05 (100.0)
	Medium farmer	Nil	09 (90.0)	01 (10.0)	Nil	Nil	10 (100.0)
(iii)	Small farmer	Nil	29 (78.37)	08 (21.62)	Nil	Nil	37 (100.0)
(iv)	Marginal farmer	Nil	15 (68.18)	07 (31.81)	Nil	Nil	22 (100.0)
(v)	Landless	Nil	02 (28.57)	02 (28.57)	02 (28.57)	01 (14.281	07 (100.0)
TOTAL After		Nil	60 (74.07)	18 (22.22)	02 (2.46)	01 (1.23)	81 (100)

Figure in the parenthesis indicates percentage of each category of household to the total

One limitation of this table is that it does not trace the individual households but only different groups of households. For instance the seven landless households **even** after land allotment under resettlement may include those who had land earlier but sold their land that was allotted to them or those who did not have land earlier but again sold the land allotted to them. To overcome this, another grouping, tracing the deterioration or improvement in land possession is prepared, which is given in Table 5.37.

Table 5.37: Changes in the Landholding Position in the Six Villages

SI No	HH category	Improvement	No Change	Deterioration	Total
1	Landless	35 (83.33)	07 (16.66)	Nil	42 (100.0)
2	Marginal farmer	51 (94.44)	03 (5.55)	Nil	54 (100.0)
3	Small farmer	34 (58.62)	24 (41.37)	Nil	58 (100.0)
4	Medium farmer	Nil	11 (64.70)	06 (35.29)	17 (100.0)

5	Large farmer	**Nil**	**01** **(14.28)**	06 (85.71)	07 (100.0)
Total		127 **(71.34)**	**39** **(21.91)**	12 (6.74)	178 (100.0)

*Figure in the parenthesis shows the percentage **out** of **total***

Table 5.38: Changes in the Landholding Position of the Households of Both the Types of Villages

Types of Villages	HH Category	Improvement	No Change	Deterioration	Total No of HH
A. Villages with allotment of Irrigated Land	Landless	31 (88.57)	04 (11.42)	Nil	**35** (100)
	Marginal Farmer	28 (87.50)	01	03	**32** (100)
	Small Farmer	05 (23.80)	16 (76.19)	Nil	**21** (100)
	Medium Farmer	Nil	02 (28.57)	05	07 (100)
	Large Fanner	Nil	01 (50.0)	**01** (50.0)	**02** (100)
Sub-Total		64 (65.97)	24 (24.74)	09 (9.27)	97 (100)
B. Villages with allotment of Un-Irrigated Land	Landless	06 (85.71)	01 (14.28)	Nil	07 (100)
	Marginal Farmer	22 (100.0)	Nil	Nil	22 (100)
	Small Farmer	29 (78.37)	08 (21.62)	Nil	**37** (100)
	Medium Farmer	Nil	09 **(90.0)**	01 **(10.0)**	**10** (100)
	Large Farmer	Nil	Nil	05 (100.0)	05 (100)
Sub-Total		57 (70.37)	18 (22.22)	06 (7.40)	**81** (100)
Grand Total		121 (67.97)	42 (23.59)	15 (8.42)	178 (100)

Figure in the** parenthesis shows the percentage **to** the **total

As can be seen from Table 5.38, a higher deterioration in the status of large farmers when compared to other is observed (85.71%) as against 35.29% in case of middle farmer. In the case of small and marginal categories, there is no deterioration at

all. In these cases there is improvement in the status of the farmers like 58.62% for small and **94.44%** for marginal farmers. Another interesting thing observed in this case is **that** all the landless, except 7 became landed. This is all because of the positive impact of land for land policy in Rengali Dam project.

In this study, the OC households are the worse affected people due to displacement because they are not getting the agricultural labour to work on their fields due to equal distribution of land. As a result they have to depend upon their female members and children who are highly unskilled for the land. So the only way to get away **from** this impoverishment trap is that of distribution of reclaimed and leveled land so that after the shift all the people start cultivation easily.

(iii) Loss of Access to Common Property Resources

For the poor people, particularly for the landless and otherwise asset-less, loss of access to non-individual, common property assets belonging to communities that are relocated represents a cause of income and livelihood deterioration and usually overlooked and not properly compensated in government projects (Cernea, 1997).

Table 5.39: Common Property Resources

Category of household	No. of house hold	% of families having "encroached" forest/ govt. land		% of families having access to grazing land		Families having access to forest		Families having access to burial ground	
		Before	**After**	Before	After	Before	After	Before	After
(i)OC	**93**	**61.17**	—	**100**	29.3	Easily accessible	Accessibility has been restricted	There was common burial ground	There is not a specific place for this.
(ii)SC	**35**	48.39	—	**100**	37.6				
(iii) ST	**50**	**71.33**		100	39.4				
TOTAL	**178**	**61.79**	—	**100**	33.70				

The "encroachment" here could be seen as traditional possession without any legal or formal alienable right.

Table 5.39 indicates that indicates that there has been a substantial loss of common property as compared to the pre-displaced situation. In the pre-displaced situation, 61.17% of OC, 48.39% of SC and 71.33% of ST families had "encroached" forest/ government land but here in the relocated site nobody has this type of land. Similarly, while before displacement every household has access to grazing land, in the relocated site only 29.3% of OC, 37.6% of SC and 39.4% of ST families have got access to grazing land. Earlier there was a particular place for burial ground in the old villages but in the relocated site there is no specific place for this. People cremate the dead body on their

own land. Further, accessibility to forest was free in the old village but it has been restricted in the relocated site. This is explained in Table 5.40.

Accessibility to Forest

Forest plays a significant role in providing livelihood to so many people especially the forest dwellers i.e. the ST and also to the rural poor. Not only these people but all other people were also dependent either directly or indirectly on forest. In the old villages all the people were dependent on forest basically for fuel wood. Besides these, the rural poor, the ST and the SC people were deriving their livelihood by the collection of MFP and the collection *of kendu leaves.*

Table 5.40: Accessibility to Forest

Types of Villages	Category	Income Earned from Forest							
		Income from Firewood		Income from collection of MFP		Selling of Kendu leave		Total	
		Before	After	Before	After	Before	After	Before	After
A. Villages with Allotment of Irrigated Land	ST	11,649 (45.07)	4687 (87.05)	12683 (49.07)	487 (9.04)	1510 (5.84)	210 (3.90)	25843 (100.0)	5384 (100.0)
	SC	6474 (47.12)	14933 (83.80)	5779 (42.06)	1282 (7.19)	1486 (10.81)	1603 (8.99)	13739 (100.0)	17818 (100.0)
	OC	29031 (62.05)	35207 (87.72)	14514 (31.02)	3989 (9.94)	3239 (6.92)	938 (2.33)	46784 (100.0)	40134 (100.0)
Sub- Total		47154 (54.59)	54827 (86.56)	32976 (38.18)	5758 (9.09)	6235 (7.21)	2751 (4.54)	86366 (100.0)	63336 (100.0)
B. Villages with Allotment of Un-irrigated Land	ST	11617 (52.62)	9286 (66.53)	9193 (41.65)	3391 (24.29)	1264 (5.73)	1279 (9.16)	22073 (100.0)	13956 (100.0)
	SC	10627 (49.68)	9916 (63.09)	8629 (40.34)	4212 (26.8)	2135 (9.98)	1590 (10.11)	21392 (100.0)	15718 (100.0)
	OC	36862 (63.99)	21578 (79.54)	16976 (29.47)	2794 (10.30)	3767 (6.54)	2756 (10.16)	57605 (100.0)	27128 (100.0)
Sub- Total		59106 (58.48)	40780 (71.79)	34798 (34.42)	10397 (18.30)	7166 (7.09)	5625 (9.90)	101070 (100.0)	56802 (100.0)
Total		106260 (56.69)	95607 (79.58)	67774 (36.15)	16155 (13,44)	13401 (7.14)	8376 (6.97)	187436 (100.0)	120138 (100.0)

Income has estimated at 1977-78 constant prices

Figure in the parenthesis shows the percentage out of the total.

From the field survey, it is seen that people from the old villages as well as in the new settlements use firewood for their consumption only. They generally don't sell it. The major things from the forest, they generally sell is kendu leaves and MFP. As can be

seen from the table, the income from selling kendu leaves has decreased from 7.34% to 4.40% and there is a drastic decline in the income from collection of MFP i.e. 38.99% to 9.01%. This is all due to the various laws and acts implemented by the forest department.

Here, the following suggested strategies have been evolved which if meticulously followed will reduce the problem caused by loss of access to common property in any development intervention to a large extent.

(a) Space for burial ground and grazing land to be earmarked for the displaced households in each relocated site.
(b) To establish the people in the similar eco-zone to the extent possible.
(c) Accessibility to the forest in case of collection of MFP should not be restricted to the displaced households.

(iv) Homelessness

According to the Rehabilitation policy, all the people displaced due to the construction of this dam have got 0.50 acre homestead land.

Table 5.41: Dwelling Condition in the Six Villages

Category of HH	Number of Household	Structure of the House				Average Numbers of Rooms		Number of Houses with Electricity	
		Katcha		Pucca					
		Before	After	Before	After	Before	After	Before	After
1	2	3	4	5	6	7	8	9	10
(i) OC	93 (100)	79 (84.94)	52 (55.91)	14 (15.05)	41 (44.08)	4.36	4.87	Nil	31 (33.33)
(ii) SC	35 (100)	32 (91.42)	24 (68.57)	03 (8.57)	11 (31.42)	2.46	2.71	Nil	09 (25.71)
(iii) ST	50 (100)	50 (100)	42 (84.0)	Nil	08 (16.0)	1.93	2.63	Nil	08 (16.0)
TOTAL	178 (100)	161 (90.44)	118 (66.29)	17 (9.55)	60 (33.70)	3.30	3.81	Nil	48 (26.96)

Figure in the parenthesis show the percentage to the total

Table S.42: Dwelling Condition of the Households of Both the Types of Villages

Types of Villages	Caste	No of HH	Structure of Houses				Average Number of Rooms		No of Houses with electricity	
			Katcha		Pucca		Before	After	Before	After
			Before	After	Before	After				
A. Households with allotment of Irrigated Land	ST	29 (100)	29 (100)	23 (79.31)	Nil	06 (20.68)	1.84	2.58	Nil	05 (17.24)
	SC	18 (100)	17 (94.44)	11 (61.11)	01 (5.55)	07 (38.88)	2.22	2.83	Nil	06 (33.33)
	OC	50 (100)	47 (94.0)	30 (60.0)	03 (6.0)	20 (40.0)	3.97	4.62	Nil	20 (40.0)
Sub-Total		97 (100)	93 (95.87)	64 (65.97)	04 (4.12)	33 (34.02)	3.00	3.67	Nil	31 (31.95)
B. Households with allotment of Un-irrigated Land	ST	21 (100)	21 (100.0)	19 (90.47)	Nil	02 (9.52)	1.89	2.53	Nil	03 (14.28)
	SC	17 (100)	15 (88.23)	13 (76.47)	02 (11.76)	04 (23.52)	2.33	2.68	Nil	03 (17.64)
	OC	43 (100)	32 (74.41)	22 (51.16)	11 (25.58)	21 (48.83)	4.12	4.59	Nil	11 (25.58)
Sub-Total		81 (100)	68 (83.95)	54 (66.66)	13 (16.04)	27 (33.33)	3.16	3.65	Nil	17 (20.98)
Grand Total		178 (100)	161 (90.44)	118 (66.29)	17 (9.55)	60 (33.70)	3.08	3.66	Nil	48 (26.96)

Figure in the parenthesis show the percentage to the total

One can see from Table 5.41 that, 161 out of 178 households had katcha houses and only 17 households had pucca houses during the predisplaced stage where as now 118 households have katcha houses and the number of households with pucca houses have increased from 17 to 60. Category wise all the OC, SC and ST households have improved in their housing condition with more pucca houses and more number of rooms in comparison to their pre-displacement situation. This shows that people have not been homeless to a large extent. Except three families, there are no houses in the resettlement colony with running water and toilet facility inside the house. In the new settlements 48 households have electricity connection in their houses. Housing goes with the social position one occupies in the society (Nath, 1998).

Table 5.42 presents the dwelling conditions of the displaced households of both the sets of villages. Here in both the types of villages the average numbers of rooms have increased from 3.00 to 3.67 in the villages with allotment of irrigated land and from 3.16 to 3.65 incase of villages without irrigation. Also the share of having pucca houses has increased from 4.12% to 34.02% in the villages with irrigation facility and 16.04% to 3333% in the villages without irrigation facility.

The study finds that the displaced households have built their houses out of their own cost with house building materials supplied by the government at concessional rate. However, the quality of the house can be improved greatly in the new colonies if the rehabilitation authorities give house construction allowances from the project cost to all the displaced households, which should be released in phased manner looking at the progress of the house construction that will ensure a house for each household.

(v) Social Disarticulation

Forced displacement tears apart the existing social fabric by dismantling the patterns of social organization and interpersonal ties (Cernea, 1997). The eviction of people from their habitats is the most serious aspect of displacement from the point of removing them from their natural surroundings. These natural surroundings are not provided in the new settlement colonies, which in turn weaken the physical and social links. Nayak (1986)'s studies on Rengali dam found various manifestations of social disarticulation within the kinship system such as the loosening of intimate bonds, growing alienation and anomie, the weakening of control on interpersonal behavior, and lower cohesion in family structures. Participation in group activities decreased and also leaders became conspicuously absent from settlements. Table 5.43 shows the nature of families before and after displacement of the study village:

Table 5.43: Structure of the Family in the Six Villages

Sl No	Caste	Total HH	Nuclear Families		Joint Families		% of Joint families	
			Before	After	Before	After	Before	After
1	OC	93	21	74	72	19	77	20
2	SC	35	19	31	16	04	46	11
3	ST	50	28	48	22	02	44	04
Total		178	68	153	110	25	62	14

Table 5.44: Structure of the Households in Both the Types of Villages

Type of Villages	Caste	Total No of HH	Nuclear Families		Joint Families		% of Joint Families	
			Before	After	Before	After	Before	After
A. Households with allotment of Irrigated Land	ST	29	12	27	17	02	58.62	6.89
	SC	18	10	15	r 08	03	44.44	16.66
	OC	50	10	32	40	18	80.0	36.0
Sub-Total		97	32	74	65	23	67.01	23.71

B. Households with allotment of Un-Irrigated Land	**ST**	**21**	**16**	**21**	**05**	**Nil**	**23.80**	**Nil**
	SC	**17**	**09**	**16**	**08**	**01**	**47.05**	**5.88**
	OC	**43**	**11**	**42**	**32**	**01**	**74.41**	**2.32**
Sub-Total		**81**	**36**	**79**	**45**	**02**	**55.55**	**2.46**
Grand Total		**178**	**68**	**153**	**110**	**25**	**62.0**	**14.0**

From Table 5.43, it is seen that 77% of the OC, 44% of the ST and 46% of the SC families were joint before dam construction but after displacement only 20% of the OC families are joint and among SC and ST, joint family system are very negligible i.e. 11% SC families and 4% ST families are joint in the new settlement. Hence it clearly shows that the social cohesion between the members of the families has been shattered due to displacement.

It can be seen from the Table 5.44, 67.01% households were joint in the villages with irrigation facilities, which has decreased to 23.71% but incase of villages with distribution of un-irrigated land are concerned, the percentage of joint families have decreased from 55.55% to 2.46%. this shows that the social relation between the people has weakened.

Another interesting thing observed in this village is that, due to unavailability of work, relocatees became idle and dependent on the salaried income of the family members. Before relocation family members were dependent on the entire family, which in turn was dependent on the patrons. But after relocation, families became more dependent on salaried persons. So there is a shift of status among families' members with salaried workers assuming more importance and non-working members losing status.

The intra-family relationship among the resettles of this project had improved because of the agricultural and house building activities requiring division of labour and cooperation among the family members in carrying out the work. In most of the families the relationship were said to be cordial and without any strain.

To overcome the impoverishment caused by social disarticulation, the strategy, which can be followed, is that the project displaced households of one village and one community should be resettled in one relocation site.

(vi) Food Insecurity

Sudden drops in food crop availability and/ or incomes are predictable during physical relocation, and hunger and undernourishment tend to become lingering long-

term effects. Forced uprooting increases the risk that people will fall into chronic food insecurity, as rebuilding regular food production capacity at the relocation site may take years.

Prior to displacement, in the old villages, the oustees were growing paddy in kahrif season as well as in rabi season. Presently in the villages with the allotment of un-irrigated land are completely dependent upon the rainfall and some time they face drought also. But in the other way the villages with the allotment of irrigated land (tail area) cultivate their land in the kharif season without any problem and the villages in the head areas cultivate their land to its optimum level both in the kharif as well as in the rabi season. The yield rate has decreased in each and every crop drastically which is shown in Table 5.45.

Table 5.45: Crop Yield in the Resettlement Colonies

SI No	Crops	Crop Yield (Kg/ Acre)	
		Before	After
1	Paddy	1280	640
2	Sesame Seed	200	150
3	Green Gram	100	40
4	Black Gram	50	20
5	Groundnut	400	Nil
6	Molasses	1000	Nil
7	Ginger	Nil	1000 (in irrigated area)
8	Horse Gram	320	190

In the irrigated village (head), the crop yield has increased from 1280 kg/ acre for paddy to 1520 kg/ acre. These people of this village have started an improved variety of paddy i.e. culture (I). They are producing paddy in 90 days on goda land. But so far as villages with allotment un-irrigated land are concerned, the extension service in the area is found to be poor. When asked about the reason for low crop yield, most of the oustees said that the quality of land allotted to them was inferior. Moreover, their land was not receiving irrigation water and it had not been leveled.

On the basis of the empirical findings, some strategies have been evolved which can be used in future or ongoing projects to overcome the most serious risk factor food security, and those are given as follows:

(a) Reclamation and leveling of the land before handling over land to the displaced households.

(b) Wasteland near the relocation site should be allotted to the displaced households for mixed plantation and horticulture to supplement food requirement.

(c) High yielding paddy seeds, farm equipments, pesticides and chemical fertilizers should be provided at concessional rate.

(vii) Increased Morbidity and Mortality

Serious declines in health result from displacement-caused social stress, insecurity, psychological trauma and the outbreak of relocation-related illnesses, particularly parasitic and vector-born diseases, such as malaria aad schistosomiasis. Unsafe water supply and poor sewerage systems increase vulnerability to epidemics and chronic diarrhea, dysentery, etc.

After the acquisition of land the displaced people came to the new settlements and from that day onwards they have been facing so many problems in the new village. Table 5.46 shows the main problems faced by the relocatees in the new settlement

Table S.46: Problems Faced by the People

SI No	Problems*	Number of Households N = 178	Percent
1	Drinking water	133	**74.71**
2	Health facility	**82**	**46,06**
3	Wild animals	**47**	**26.40**
4	Transport & communication	**62**	**34.83**
5	Employment	**44**	**24.71**
6	**Electricity**	**23**	**12.92**
7	Lack of marketing facilities	**17**	9.55

* Multiple responses

N- ***Total number of households***

One can notice from Table 5.46 that, the single most important problem just after displacement was the health problem next to drinking water. Because this areas are basically malaria prone area and these villages have been constructed by cutting reserve forest. In the beginning some people did not cope up with the environment and died of malaria. Apart from this problem, 39 households complained for lack of marketing

facilities. For 44 households employment is a problem. There are some 47 households in two villages staying in very much interior place i.e. almost nearer to the forest. They complained about menace created by wild animals, mostly elephant and these elephants generally caused much damage to the paddy fields. People fear to kill the wild animals due to the Forest and Wild life Conservation Act 1980. In those villages beers are also a problems because they enter to the village very frequently in the evening.

The study finds from the field survey that the medical centers are located at far off place from the habitational site of the displaced households and the I.C.D.S services are not delivered regularly. Hence the following strategies are suggested to over the risk.

(a) Each resettlement colonies should be selected in a manner, which will be nearer to a health center.

(b) I.C.D.S services should be delivered regularly in the relocated sites.

(c) Provisions to be made for maintenance of the tube wells by the government at regular interval.

(viii) Joblessness

Joblessness is one of the major factors, which has been heavily responsible for the impoverishment of the displaced people because due to acquisition of land and displacement of people there is tremendous loss of employment opportunities (Ota, 1996). In this study, to assess as to what extent joblessness has been overcome and affected the Impoverishment of the displaced people in the relocated sites have been examined by taking 3- indicators. The detail is given in Table 5.47

Table 5.47 indicates that there has been an increase in the percentage of ST and SC households cultivating their own land in the relocated sites. Incase of OC, households cultivating their own land have decreased from 64.51% to 53.33% in the villages with allotment of irrigated land and 56.75% to 52.5% incase of villages with allotment of un-irrigated land. So far as farm wage earning is concerned, incase of ST and SC households, it has decreased as they have started cultivation on their own land after the land allotment but among the OC households, it has decreased as they are the net losers due to equal distribution land to all the people. Likewise, the average number of days a year a displaced household getting work has also reduced significantly in the resettlement colonies from 300 days to 190 days incase of villages with allotment of un-irrigated land and from 300 days to 280 days incase of villages with distribution if irrigated land.

Table 5.47: Joblessness

Types of **villages**	**Parameters**	Status							
		ST		**SC**		**OC**		Total	
		Before	**After**	Before	After	Before	After	Before	**After**
A. Villages with allotment of Irrigated Land	%ofhh cultivating their own land	14 22.58	27 30.0	08 12.90	15 16.66	40 64.51	48 53.33	62 (100)	90 **(100)**
	Farm Wage Earners	21 (48.83)	15 (40.54)	10 (23.25)	05 (13.51)	12 (27.90)	17 (45.94)	43 (100)	37 (100)
	Average No. of days a year getting work	300	280	300	280	300	280	300	280
B. Villages with allotment of Un-irrigated Land	%ofhh cultivating their own land	18 (24.32)	21 (26.25)	14 (18.91)	17 (21.25)	42 (56.75)	42 (52.5)	74 (100)	80 (100)
	Farm Wage Earners	27 (63.63)	19 (52.63)	12 (27.27)	10 (26.31)	12 (27.90)	17 (45.90)	43 (100.0)	37 (100.0)
	Average No. of days a year getting work	300	190	300	190	300	190	300	190

Figure in the parenthesis shows the percentage to the total

Joblessness among resettlers often surfaces after a time delay, rather than immediately, because in the short run resettlers may receive employment in project-related jobs. Such employment, however, is short-lived and not sustainable. Experiences compiled from the study villages of Rengali Dam shows that the 'employment boom' created by new construction temporarily absorbed some resettlers, but severely dropped towards the end of the project. This compounded the incidence of chronic or temporary joblessness among the displaced.

From the above facts testifies that "Joblessness" has very critically affected the impoverishment of the displaced people in the new resettlement colonies. To overcome the vital risk factor "joblessness" the following strategies can be followed by the R & R authorities.

(a) All the government work should be done in the area involving the displaced households.

(b) All the displaced households without having substantial source of livelihood should be economically rehabilitated by helping them with different anti-poverty programmes and income generating schemes.

Apart from this above analysis of risk, there are so many changes observed among the relocatees, which has been discussed in the following section:

5.2.3 Shift from Subsistence Economy

Before displacement, the old villages were subsistence economics but more or less self-sufficient, given their limited needs. The mode of exchange was in terms of barter and the economic rewards for the services rendered by the traditional artisans like blacksmiths, goldsmiths, barbers, washermen etc were paid in terms of paddy. AH those payments were done immediately just after the harvest. Thus, there was a self-sufficient economy in the old villages, which was completely based on mutual help and inter-dependence. In the new villages all those things have under gone a complete change. After displacement the original artisans and service castes no longer practiced their traditional occupation, because they have started cultivating lands or began working as wage earners and had given up their traditional occupation. As a result, they started depending on markets for all their needs and services and cash payment became gradually became their mode of transactions.

5.2.4 Changes in Availability of Amenities and Infrastructural Facilities

Provision of basic amenities is very important for the overall development of villages. No rehabilitation programme would be complete unless minimum basic facilities and amenities like education, health care, communication are provided (Reddy, 1992). One method of examining the functional gap in the availability of amenities is to compare the present situation with that they enjoyed before displacement. Table 5.48 shows the status of the amenities and facilities in the new settlements.

Table 5.48: Status of Amenities/ Facilities in the Resettlement Colonies

SI No	Amenities/ Facilities	Status of the HH(N= 178)		
		Improved	Same as before	Deteriorated
1	Drinking water	32 (17.97)	63 (35.39)	83 (46.62)
2	School	160 (89.88)	18 (10.11)	Nil
3	Medical Facilities	146 (82.02)	16 (8.98)	16 (8.98)
4	Market Facilities	68 (38.20)	93 (52.24)	17 (9.55)
5	Bus stop	100 (56.17)	07 (3.93)	71 (39.88)

N = Total no of households

Figure in the parenthesis show the percentage out of the total no of households

An attempt has been made here to understand changes in important amenities and facilities by seeking the opinions of the households on five indicators as mentioned above

in the table. From the table it is significant to note that an overwhelming majority of households rated the availability of various amenities and facilities in the colonies except drinking water. A total of 83 households out of 178 have opined that the status of drinking water has deteriorated. Especially during the summer season, people suffer a lot Out of the tube wells given by R & R authorities, maximum are not working properly and after giving so many complaints, no body is taking care of this.

So far as other facilities are concerned, like schools, marketing facilities and bus stops are concerned the improvements are satisfactory. 146 households told the medical facilities have improved but the charges for the doctors and medicines are not affordable. Sometimes in the government hospitals also the doctors charge money.

Chapter 6

Summary and Conclusions

6.1 The Scope

The Rengali Multipurpose Project is one of the largest multipurpose river valley projects in Orissa. Around 11,289 families were displaced due to the Rengali Dam Project. Out of the total families displaced, 7861 families belong to Other Castes, 1328 families belong to Scheduled Tribes and the rest, 2100 families are Scheduled Castes. These 11,289 families together constitute a population of 46,570. The total area, which submerged due to Rengali dam project, was 99,717.77 acres. Out of it, 34,335.67 acres are rayati land and the rest of 65,717.77 acres government and forest land. In the context of a general backwardness of the region, the plan for the construction of the dam in 1972 was met with agitation, which lasted till 1980. The agitation was finally suppressed and the rehabilitation of people of the affected villages started.

6.2 The Objectives

The main objectives of the study are:

1. To make an in depth analysis of the process of evolution of the rehabilitation policy;
2. To analyze the implementation of rehabilitation policy measures and their impact on the economic and social life of the displaced people; and
3. To study the income and equity aspects of different categories (ST, SC and OC) of the displaced people with special reference to Rengali Dam in Orissa (India).

6.3 The Methodology

The study involved a three- pronged approach to collection of information: (a) conducting a field survey; (b) collection of data from secondary sources; and (c) discussion with officials in government, non-officials and local leaders in the area. For intensive field study, which was empirical in nature, two structured questionnaires were used. The first one was for the individual households, and the second one was the village schedule, where all the information regarding the villages was collected. The data thus collected were used for assessment of the impact on the socio-economic condition of the people who were displaced and for the assessment of income and equity aspect of the displaced households. For this, the following statistical measures were used:

1. Coefficient of Variation;
2. Pareto Distribution;
3. Lorenz Curve;
4. Ginni's Coefficient.

6.4 The Policy

The first and foremost objective of the study is to make an in depth analysis of the process of evolution of the rehabilitation policy. In spite of several efforts made, till date, India does not have a national rehabilitation policy. All the policies are project specific. It not only varies from project to project within the same state but also from state to state. The government of Orissa did not have any well-formulated rehabilitation policy for quite some time, even after independence. Historically, the problem of rehabilitation assumed importance in Orissa only when the construction of Hirakud Dam was taken up just before plan development through Five Year Plans commenced in the country. The seriousness of the problem can be seen by the fact that as many as 22,144 families in 249 villages of Hirakud Dam in Orissa, besides affecting 36 villages in Madhya Pradesh, were displaced. Hirakud Dam was followed by Balimela Project in the early seventies. Here, rehabilitation of the people was taken up on the pattern of Hirakud. But Rengali Dam saw a new chapter in the history of irrigation development in Orissa. Initially local people did not welcome the construction of the dam. The obvious anger was against the manner in which problems of displacement were being tackled. There was great agitation, which consequently delayed the construction of the dam. However, considering the concerns for the large number displaced by the dam, the Government of Orissa was compelled to formulate a rehabilitation policy for the oustees of the Rengali Project for the first time in 1973. This policy specifically for the Rengali Project was later on elaborated and developed to be adopted as a uniform policy for all Major and Medium Irrigation Projects in the State. The Government of Orissa, in April 1977, approved this. Various government reports regarding the policy, methods of valuation of compensation, and the various legal documents of the land acquisition cases from the civil court, Deogarh have been collected to analyze the extent to which this policy was implemented (Chapter- IV).

The rehabilitation policy thus evolved by the government has a number of positive impacts on the people. In the first place, due to its homogeneous nature, it treats all the displaced households equally. This policy is an improvement over earlier policies,

in the sense that it includes the landless and also the assess, who generally derive their livelihood by their labour, also as eligible for the allotment of land. However, the weakness of this policy is the distribution of highly unproductive land. Because of the infertile nature of the land, the crop yield has decreased to a large extent. Next weakness of this policy is distribution of land into different patches. In some cases distribution of disputed land has added more miseries in the lives of the displaced people. Hence, the government has to look at these matters and modify these demerits in future projects.

6.5 The Performance

Land for this dam was taken from the people according to the Land Acquisition Act 1894, which was passed by the colonial government. According to this act, government can take any private land for 'public purpose'. The basic objective of this act is to compensate a person who loses land during the process of acquisition of land. The LA Act, 1894 says that land can be compensated according to its market value, which is purely based on the sale deed of the land. In case of Rengali dam oustees, sale deed was not available. Hence for this purpose annual yield of paddy was taken as the market value of land.

The entire process of valuation of all the land and houses were purely arbitrary. This has resulted in low compensation, which is not even equal to $1/4^{lh}$ of the property acquired by the government. The only alternative left to the people was to accept the compensation, however low it was. There is another point to be noted here. According to one of the provisions of the LA Act the interested party must accept the compensation under protest, even if the land is under valued by the LAO. If the compensation is accepted under protest then the case can be referred to the court by the LAO. The court can enhance it if it feels that the value given by LAO is unjust. The fact is that the provisions of the Act are not known to the people. However, a few knowledgeable persons took their compensation under protest and sought relief as per the provision of the Act. Some people (See the two examples in Chapter- III) got enhanced money from the court but in the same village the poor people, having the same kind of in the old village did not get any thing because they were unable to go to the court.

6.6 The Findings

The study has revealed that just immediately after displacement the oustees do not have anything with them to cope with the changing situations. Starting from a shelter to food, they needed money for the fulfillment of every minor need, but almost all of them spent their compensation money before they moved out. Hence they did not have anything to fall back upon even during the initial period of settlement. This meant enormous suffering of the displaced people. To avoid such situations the State must ensure as a part of the policy to take care of the livelihood needs of the displaced people during the period transition from the place of displacement to the new settlement.

Further, it has been noticed that the displaced people had a lot of problem during shifting and after shifting to the new place of settlement regarding the compensation of amount, valuation of compensation and etc. Due to lack of exposure and of course lack of education, these people did not complain about this matter. Hence there should be a Rehabilitation Tribunal to look after the cases relating to displacement and resettlement.

Yet an other problem is the indifferent attitude towards the location of resettlement and land allotment. The displaced are resettled upstream and allotted land, which will not have the benefit of irrigation either from the dam or from any other source. While the displaced end up with dry land, those non- displaced with dry land down- stream will have all the benefits of irrigation. This shows gross indifference to the principle of equity and fair distribution. Because the canal system of Rengali Dam, which is under construction would provide 2,00,000 hectares of land under irrigation in Cuttack, Jajpur and Dhenkanal districts of Orissa. Here some body is paying the cost and some body is deriving the benefit, which is really unjust. Hence there is a need to resettle the oustees in the Rengali command areas in the old cluster villages so that they can get the benefit of power and irrigation for which they are sacrificing so much.

The second problem is concerning the implementation of the rehabilitation policy and their impact on the economic and social life of the displaced people. For this the results of socio- economic survey of the sampled villages are discussed in Chapter-V. It is observed that the land ownership of the households has improved substantially. It is only because of the land for land policy adopted in Rengali Dam, where all the oustees received either six acres of un-irrigated land or three acres of irrigated land, irrespective

of his earlier land holding position. In the process of land distribution the ST and SC households are the gainers but the net losers are the OC households as could be seen from the decline in the average land holding size of these communities. Therefore it is concluded that there is a structural change from earlier land system, which favoured the OC households, to the present land system favouring the ST and SC households. Further, some of the major limitations of the land policy is that (i) the cultivable land allotted to each households are in several patches; (ii) some cases the land, which has been allotted to the displaced people are forcibly encroached and cultivated by the other people; (iii) the land allotted is highly unproductive and infertile.

Some of the major findings include that those households who got dry land experience deterioration in their livelihood, where as those who got wet land improved. There are, of course, inter-community differences too. The STs and SCs have improved through access to land but the OCs have experienced a decline in their earnings.

6.7 The Conclusions

It is observed from the yield pattern of the land is that those households who have land in the un-irrigated villages have reduced the produce to half. Because of the dry nature of the land and less moisture capacity of the land in the new settlements the crop yield has decreased. In villages with allotment of 3 acres of irrigated land in the head area, crop yield has increased and people have got a better deal in these places.

There is visible differentiation among households of various castes as could be seen from the annual income. Prior to displacement the annual average income of the OC households is found to be much higher than the ST and SC households. Even after displacement the per capita income of the OC households is more than that of the other two categories of people but the inequality among them has decreased to an extent because of not only an increase of SC and ST households but also because of decrease in the level of income of the OC households. From the Table 5.24, it is seen that CV of ST people has decreased from 62 to 35 incase of villages with allotment un-irrigated land and 43 to 37 incase of SC in the villages with allotment of un-irrigated land. CV has increased incase of OC households in both the types of villages. So far as villages with allotment of irrigated land is concerned, CV of all the types of households has increased i.e. 44 to 63 for ST, 63 to 85 for SC and 63 to 68 incase of OC households. The only reason behind this increase in CV in the irrigated villages is that these sets of villages are

a combination of three villages where two villages are situated in tail area of the canal and one is in the head area. The income of the households of the villages situated in the head area of the canal is much more than that of the income of other two villages situated in the tail area of the canal. Hence there is a disparity of income among the people of these three villages as a result the CV of all the categories of people has increased. From this, it is concluded that the distribution of income of the ST people after displacement is less variable than the other two communities (OC and SC). From the Table 5.28, it is seen from the Ginni's Coefficient that in case of SC and ST households in the villages with un-irrigated land has decreased from 0.32 to 031 in case of ST, and 0.25 to 0.21 in case of SC households.

Hence, it is concluded that the post- displacement incomes of the households are more equal than that of the pre-displaced scenario but not entirely to the liking of the OC households.

To analyze the impact of dam construction on the displaced people of Rengali Dam, Cernea's Risk Model has been tested by analyzing the data collected from the six resettled villages. Eight different risks defined by Cernea, were also analyzed. From this analysis, it is concluded that the landholding of the people has increased to a large extent. Another positive impact is that of increase in the conditions of the dwelling. Apart from this, there is improvement in the infrastructure facilities and medical facilities. Another important conclusion drawn here is that though the accessibility to the forest has been restricted, people's dependence on forest has increased.

In the absence of an accurate baseline information on pre- displacement income levels, it is necessary to point out that the comparison of the levels of income are only broadly indicative than precise. Given the resource position, landholding structure, ownership of livestock and agricultural implements, it can be safely concluded that the ST households are in a relatively better position in comparison to their pre-displaced position. As far as the OC households are concerned, the quality of life has decreased to an unprecedented level.

Such inequities have occurred in spite of Rengali Project being one of the 'best' rehabilitation policies of India, because of its homogeneity for all the people. The word 'best' does not mean that a more effective policy cannot be made but this policy is an improvement over the earlier project-specific policies, as this policy is uniform for ail the

people. Here the compensation packages are better than that of the earlier policies. Due to this effective attempt of the policy, the landholding of the people has increased. The people's area for house site has also increased. Infrastructural facilities have increased to a large extent.

It is seen from the field study that immediately due to reduction of crop yield, there was food insecurity among the people. It is only because due to the agricultural land provided by the project authority has not been reclaimed and leveled properly. And also the operational land holding has been reduced considerably in the case of OC households.

From the above discussion, it is clear that the current rehabilitation policy has two sides- one is the positive side and the other is the negative side. The positive side is the universal allocation of land to all the displaced households, which makes this policy much superior over the earlier policies. So far as the negative side is concerned, the government has not ensured easy acceptance of the displaced as settlers in new places. The government should rectify it and include some more effective packages so that the people of the concerned area won't treat the intervention as enemy. Because the backbone of the resettlement plans anywhere should be a 'development package', that is, a set of provisions aimed at reconstructing the production base of the relocated. This package must offer suitable opportunities and resources for their economic and social re-establishment as self-sustaining producers. While implementing the rehabilitation programme, it is the duty of policy makers to prepare all facilities in the new places and then only shift the affected people. Utmost caution in planning and execution of shifting the displaced is needed and use of force should be avoided (Shtrugna, 1981). The process of rehabilitation should always educate the person about the programmes and its advantages, which results in economic growth of the region (Vital, 1992).

Ad- hoc policies cannot solve the problems associated with erosion and displacement but they are likely to reduce vulnerability and to ease the difficulties faced by the oustees. Awareness of education and extension work must emphasize the fact that in the long run resettlement policy should ensure further improvements in resettlement policies, in legal frameworks, in the implementation of future land reforms measures, and in regional economic development strategies. The government should seriously consider creating a separate ministry to deal with the development of newly acquired land as much as the relocation of the displaced people (Zaman, 1995).

The displacement of people due to establishment of development projects is a nation-wide problem. Several development projects in different parts of the country are in the process of implementation and several more projects are expected in the near future. In the absence of a national rehabilitation policy, the state governments will follow their own way of rehabilitation. The lesson is that it is time to formulate a comprehensive national rehabilitation policy for complete socio-economic rehabilitation of the displaced people that ensures equity and social justice.

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ANNEXURE -1

No. 35054- FC-RL- 4/73
GOVERNMENT OF ORISSA

IRRIGATION & POWER DEPARTMENT

RESOLUTION

The 6th December 1973

The construction of **the** proposed **dam at Rengali** over **river** Brahmani is **likely** to submerge some areas, the particulars of which are as follows:

(a) Number of villages	..	..	173
(b) Cultivated area and village site		..	23,073 acres
(c) Waste and other lands including forest	..	..	99,138 acres
(d) Population	..	..	42,000 or 8,400 families

As about 8,400 families in about 173 villages are going to be displaced by the construction of the dam, the programme of rehabilitating them and the policy to be adopted for this purpose had been engaging the attention of Government for some time past Government have carefully considered the rehabilitation facilities allowed to the families displaced in other projects inside the State and in other States and keeping in view the human problem involved in displacing large number of families have finally decided to provide adequate facilities to the displaced families in the new resettlement colonies as per the following details.

1. *Provision of free house sites in model villages/ colonies-* Each displaced family will be given homestead land to the extent of 0.30 acre free of cost depending on the availability of the land. The cost of development of house site and village lay out will be borne by the Government.
2. *Agricultural Land-* Each family whose lands have been acquired for the project will be allotted 3 acres of reclaimed irrigated land or 6 acres of reclaimed unirrigated land in the ratio of 1:2. The cost of reclamation will be borne by the Government subject to a maximum of Rs. 600 per acre. The above lands will be allotted free of salami but 50 per cent of the reclamation cost will be recovered from the allottee subject to a maximum of Rs. 300 per acre. As regards landless families from among the displaced persons, the possibility of meeting the cost of allotment of land from the normal scheme for providing lands to the landless in the 5th plan if any, may have to be explored.

3. *House Construction*- The displaced families will be provided facilities of free transport of house building materials which they can salvage from their old salvage from their old houses for carriage to the new settlement colonies. House building materials from the nearest forest will be made available at concessional rate of 60 percent of normal royalty. Necessary guidance to build low cost houses with fireproof roofing will be provided to the displaced persons. Facilities of loans under Low Income Group Housing/ Village housing scheme will also be extended to the new resettlement colonies.

4. *Provision of Common Facilities*- Common facilities like village roads, school, drinking water wells, tanks for general purpose use, community building, etc. will be provided at project cost. For amenities like School, Public Health Centre, Veterinary Dispensary and Panchayat Ghar, respective Administrative Department of Government have to supplement the provisions made in the Rehabilitation estimates from their Departmental Budget. The compensation payable from the project funds towards common facilities existing in the submersible areas will be shown as recovery against this item.

5. *Electrification*- The State Electricity Board will include these resettlement camps for Provision of Electricity under their Rural Electrification Programme.

6. *Minor Irrigation*- Facilities for minor irrigation in the resettlement colonies will be provided to the extent possible. There will be a provision of Rs. 2 crores for this purpose in the project estimate. Priority will be given to the displaced persons for resettlement within the ayacut of the Rengali Project to the extent possible or within the ayacut of the nearby medium projects subject to availability of land.

7. The rehabilitation programme will be executed by a Resettlement Officer who will work under the control of the R.D.C, Northern Division. Government have also pleased to set up an Advisory Committee for the implementation of the Project under the Chairmanship of the Revenue Divisional Commissioner, Northern Division with Collectors, Sambalpur and Dhenkanal, Conservator of Forests Additional C. E. in charge of the project as members and others as may be co-opted by the Chairman. The Resettlement Officer, will function as a Member- Secretary of the Committee.

ORDER

Ordered that the resolution be published in the extraordinary issue of the *Orissa Gazette* for general information of the public. Also ordered that a copy of the resolution be forwarded to all Departments of Government/ all Heads of Departments/ Government

of India, Ministry of Irrigation & Power, New Delhi/ Chairman C.W.P.C., / A.G./ D.A.G., Orissa, Puri.

By order of the Governor
N. R. HOTA
Secretary to Government

Memo. No. 35055
The 6th December 1973

Copy forwarded to the Superintendents, Orissa Government Press, Cuttack for publication of the resolution in the Extraordinary Gazette and to send copies to all Departments of Government 50 copies of the resolution may be sent to this Department and 20 copies to the Additional C. E. Irrigation, Rengali and Bhimkund Project.

Sd/.
N. SAHOO
Deputy Secretary to Government

Memo No. 35056
The 6th December 1973

Copy forwarded to all Departments of Government/ all Heads of Departments/ Governments of India, Ministry of Irrigation & Power/ Chairman, Central Water and Power Commission/ A. G., Orissa/ D. A. G., Orissa, Puri for information.

Sd.
Deputy Secretary to Government

ANNEXURE -II

No. 4161- RL.9/75
GOVERNMENT OF ORISSA
IRRIGATION & POWER DEPARTMENT

RESOLUTION

Bhubaneswar the 13th February 1975
Sub- Rehabilitation policy for the displaced persons of Rengali Dam Project
Read- Irrigation & Power Department Resolution No. 35054- FC (RL)- 4/73 dated 6-12-1973

Governor has been pleased to approve the following amendment to be inserted after Para. 2 of this Department Resolution referred to above.

AMENDMENT

No reclamation cost will be recovered from the landless people to be displaced from the sub-merged area. 50% of the reclamation cost subject to maximum of Rs. 300/- (Rupees three hundred) per acre will be recovered from others to the extent of their lands being submerged for which they get compensation in each case, i.e. where the submerged land comes to 2 acres only, the person will be liable for paying reclamation cost for 2 acres only even if he is allotted more than 2 acres of land for resettlement.

ORDER- Ordered that this Resolution be published in the Extraordinary issue of *Orissa Gazette* for general information of the public and copies of the same forwarded to all Departments of Government/ all Heads of Departments/ Government of India, Ministry of Agriculture and Irrigation (Department of Irrigation), New Delhi/ Chairman, Central Water Commission, New Delhi/ Revenue Divisional Commissioner, Northern Division, Sambalpur/ Accountant- General, Orissa/ Deputy A.- G., Orissa, Puri/ Secretary to Governor.

By order of the Governor
N. R. Hota
Secretary to Government

Memo. No. 4162

The 13th February 1975

Copy forwarded to the Director of Printing, Stationery and Publication, Orissa Cuttack for publication of the Resolution in the Extraordinary issue of the *Orissa Gazette* and copies sent to all Departments and offices as indicated in the Resolution.

50 spare copies of the Resolution may be sent to this Department and 20 copies to Additional Chief Engineer, Irrigation, Rengali and Bhimkund Project.

Sd/-

N SAHOO

Deputy Secretary to Government.

ANNEXURE - III

GOVERNMENT OF ORISSA
IRRIGATION & POWER DEPARTMENT
No. 7004—RL-37/77
The 2nd March 1977

From,

Shri N. R. Hota, I. A. S.,
Secretary to Government

To,

The Chief Construction Engineer,
Rengali Multipurpose Project,
Rengali.

SUB- Supply of forest materials for house building purpose to the displaced persons of Rengali Project.

Sir,

I am directed to say that in this Department Resolution No. 35054, dated the 6 December 1973 regarding the rehabilitation policy of Rengali Project it was envisaged to provide house-building materials from the nearest forest to the displaced persons at a

concessional rate of 60% of normal royalty. Subsequently, the Forest Department circulated a memorandum in the 4th meeting of the Rengali and Bhimkund Control Board held on 13th May 1975 stating that the royalty was fixed long time back and it is very low compared to the present market rate and therefore, while the settlers would be asked to pay only 60% of the normal royalty, the difference between 4 times the normal royalty and the concessional royalty should be reimbursed from the project. In other words, according to Forest Department the settlers will have to bear 60% and 340% of the normal royalty should be charged to the Rengali Project. The Control Board felt that the final decision on this issue should be taken by Government.

Accordingly, Government have carefully considered the matter, and have been pleased to decide that house building materials will be supplied by the Forest Department to the displaced persons of Rengali Project from nearby Khesra or reserved forest at single royalty at tenants rate applicable to Khesra forests.

You are, therefore, requested to take steps to supply the house building materials to the displaced persons of Rengali Project on payment of royalty as indicated above.

Yours faithfully

N. R. HOTA
Secretary to Government

MEMO No. 7005
The 2nd March 1977

Copy forwarded to the Forest, Fisheries and A. H. (Forest) Department for information and necessary action with reference to the proceedings of the second meeting of the cabinet held on 5th February 1977. They are requested to issue necessary instructions to the C. C. F/ Conservator of Forests, Sambalpur in the matter under intimation to this department immediately.

Sd/-
N. SAHOO
Deputy Secretary to Government

MEMO No. 7006

The 2nd March 1977

Copy forwarded to the R. D. C Northern Division, Sambalpur Resettlement and Rehabilitation Officer, Rengali Multipurpose Project, Sambalpur/ F.A. & C.A.O. Rengali Multipurpose Project Rengali/ Collector Sambalpur/ Dhenkanal for information and necessary action.

Sd/-

Deputy Secretary to Government

ANNEXURE - IV

No. **30079-RL-2/77**

GOVERNMENT OF ORISSA

IRRIGATION & POWER DEPARTMENT

RESOLUTION

The 14th September 1977

Subject- Rehabilitation policy for the displaced persons of Rengali Multipurpose Project.

Read- Irrigation & Power Department Resolution No. 35054, dated the 6th December 1973 and NO. 4161, dated the 13th February 1975.

Governor has been pleased to make the following amendment to the Resolution of the Irrigation & Power Department cited above.

AMENDMENT

In the said resolution, the " whose lands have been acquired for the Project" appearing in Para. 2, shall be omitted and the words " who will be displaced from the submerged area including landless persons on the date of publication of 4 (1) notification under Land Acquisition Act 1894 shall be inserted.

ORDER- Ordered that this Resolution be published in the extraordinary issue of the *Orissa Gazette* for general information of the public and copies of the same forwarded to

all Departments of Government/ all Heads of Department/ Government of India, Ministry of Agriculture and Irrigation (Department of Irrigation), New Delhi, Chairman, Central Water Commission, New Delhi/ Revenue Divisional Commissioner Northern Division, Sambalpur/ Collector, Sambalpur/ Collector, Dhenkanal/ Resettlement and Rehabilitation Officer, Rengali Multipurpose Project, Smbalpur/ Chief Construction Engineer, Rengali Multipurpose Project, Rengali/ Financial Advisor and Chief Accounts Officer, Rengali Multipurpose Project, Rengali/ Accountant- General, Orissa/ Sr. Deputy Accountant-General, Orissa, Secretary to Governor.

By order of the Governor
PREMANANDA TRIPATHY
Secretary to Government

ANNEXURE -V

No. 35963- R. L. A. - 34/77
GOVERNMENT OF INDIA
IRRIGATION & POWER DEPARTMENT

The 7th November 1977

From,

Shri Premananda Tripathy,

Secretary to Government

To,

The Revenue Divisional Commissioner,
Northern Division,
Sambalpur.

Subject- Principles of payment of compensation for different categories of lands to be acquired for Rengali Project.

Sir,

I am directed to invite a reference to your D. O. Letter No. 788, dated the 7th July to the address of the Additional Development Commissioner on the subject mentioned above and to say that after careful consideration, Government have been pleased to decide as follows:

1. Land valuation based on the annual value of the produce of the land is supported by , Section 23 of the Land Acquisition Act read with Executive Instruction No. 72 of the Land Acquisition Manual. This procedure for working out the market value of lands would be acceptable to Government.

2. Government, however, feel that proper procedure for enquiry should be followed to satisfy the requirements of Land Acquisition Act and the Executive instructions issued there under. Instead of one valuation for all the 262 villages from which lands are being acquired for Rengali Project, these villages should be dealt with individually or split into groups or blocks according to the geographical situation, lie of the land, similar advantages etc. and one rate adopted for each village group or block. Besides, the principles of valuation should be clearly mentioned in the case record maintained for each village.

3. While working out valuation of land the following principles may also be kept in view-

   a) The market value of land should be fixed as it stood by the date of publication of notification under section 4 (1), as provided under section 23 (1) of the L. A. Act read with E. I. No. 72 of Bihar and Orissa L. A. Manual.

   b) In case there is no sale deed in the village where land is being acquired, sale deeds in the neighbouring villages for equal kissams of lands should form the basis of assessment of market value of land.

   c) If both above are wanting the market value of land should be fixed on the basis of net annual produce value multiplied by sixteen is mentioned in Revenue Department, Circular No. 44979, dated the 6th July 1965 and No. 50043, dated the 3rd August 1973.

   d) The provisions containing the E. I. No. 22 of the L. A. Manual may also be taken into consideration if necessary, for assessment of market value of land.

You are, therefore, requested to kindly instruct the Land Acquisition Officer, Rengali Project to follow the above principles in the matter of payment of compensation for the lands to be acquired for Rengali Project. He is being informed.

Yours faithfully

Sd/-

Secretary to Government

ANNEXURE VI

No. 13169
GOVERNMENT OF ORISSA
IRRIGATION & POWER DEPARTMENT

RESOLUTION

The 20th April 1977

Sub: Rehabilitation Policy for all Major and Medium Irrigation Projects

A uniform rehabilitation policy for all Major and Medium Irrigation Projects in various parts of the State was under consideration for some time past. After careful consideration, the Government have been pleased to lay down the following policy for rehabilitation of displaced persons in all Major and Medium Irrigation Projects of the state on a uniform basis.

1. DEFINITION OF DISPLACED PERSON AND FAMILY

Displaced person means any person who on account of the acquisition of his lands for the purpose of a major or medium irrigation project has been displaced from such lands including any landless and homeless person who is dependent for his livelihood, by manual labour on agricultural lands immediately before the area comprising such lands is taken up for acquisition by the project and who is being deprived of such livelihood on account of acquisition of the lands. Family in relation to a displaced person, and his or her spouse, minor sons, unmarried daughters, minor brothers or sisters, father and mother, and other members residing with him and dependent on him for their livelihood.

2. PROVISION OF FREE HOUSE SITE

Each displaced family in fully submerged villages will be given house site up to an extent of Ac. 0.50 free of cost depending upon the availability of land. The cost of development of the house site and lay out including approach road will be borne by the Government. This facility will not be applicable to partially submerged villages where the necessity to shift the house site does not arise.

3. AGRICULTURAL LAND

The displaced families will be allotted either 3 acres of reclaimed irrigated land or 6 acres of reclaimed unirrigated land or both proportionately, depending upon availability, as per the principles enumerated in the following paragraph. The land will be allotted free of salami. Initially the cost of reclamation will be borne by Government, subject to a maximize of Rs. 600 per acre. 50% of the reclamation cost, subject of Rs. 300 per acre

will be recovered subsequently from the allottee as first charge from the compensation payable, and thereafter as an arrear of land revenue if necessary.

The displaced families receiving compensation of Rs. 50,000 and above will however be required to pay the full cost of reclamation, which also will be recovered from them as a first charge from compensation payable. If the cost of reclamation per acre exceeds Rs. 600, the beneficiaries will be asked to pay the extra cost. No reclamation cost will, however, be realized from displaced families who are landless.

4. The following principles will be followed to determine the eligibility in regard to allotment of agricultural land to the displaced to the displaced families in the rehabilitation colonies.

a) In case of fully submerged villages, the displaced families losing land and/or houses will be eligible for allotment of land in the rehabilitation area provided they do not have three acres or more of such land in any adjoining village. This will also make the landless and homeless families eligible to avail of this benefit.

b) In partially submerged villages displaced families retaining houses but losing their land, thereby suffering a reduction in their holdings to less than three acres in the same or adjoining villages, will be entitled to this benefit.

c) In partially submerged villages, displaced families losing houses and lands and thereby suffering a reduction in their holdings to less than three acres in the same village or adjoining village will also be entitled to this benefit.

d) In partially submerged villages, displaced families initially having holdings of less than three acres in the same village or adjoining village but losing houses will be entitled to get the benefit irrespective of the fact whether they lose their agricultural land or not.

e) In partially submerged villages displaced families retaining houses but having encroached land in the same village or adjoining villages so as to render them landless, will be entitled to get this benefit.

f) The landless and homeless families in the partially submerged villages will also be eligible to avail of the benefit of agricultural land in the rehabilitation area.

5. HOUSE CONSTRUCTION

The displaced families will be provided with free transport by the project for shifting as well as for carrying their house building materials, which they can salvage from their old house to the new settlement colonies. As regards supply of house building materials to them from the nearest village forest or reserve forest, the rate of royalty and the scale of

supply will be notified by Government in the Forest, Fisheries and Animal Husbandry Department from time to time.

6. PROVISION OF COMMON FACILITIES

Common facilities like school, drinking water wells and tanks will be provided on the principle of reinstatement under the L.AAct subject to a minimum of one in each on the rehabilitation colonies. Provision of any additional facility, if necessary, will require special clearance from Government.

7. CLEARANCE OF FOREST GROWTH

The forest Department will be the agency for clearance of forest growth from the rehabilitation area, irrespective of the Department to which the forest and the land belong, in terms of planning and Coordination Department Resolution No. 11805 dated 31.7.76. The cost of compensatory plantation, only in case of clearance of reserved forests, will be paid to the Forest Department out of project funds at the rates approved by Government in the Forest Department from time to time.

8. GENERAL

(i) Priority will be given to the displaced persons for resettlement within the ayacut of the Irrigation Project.

(ii) As soon as a major or medium irrigation project is administratively approved, restrictions will be imposed on transfer, sub-division or partition of land including sales, sub-division or partition by degree, award or order of any court or any other competent authority, except with the permission in writing of the State Government which may also be refused, if in the opinion of the state Government, the transfer, sub-division or partition is likely to defeat the public purpose of rehabilitation and resettlement of displaced persons.

(iii) Necessary legal provisions will be made to implement the policy outlined in paragraph three as well as item 2 above.

(iv) In regard to reclamation, the project will be treated as one unit and the cost of reclamation will be maximum of Rs. 600 per acre inclusive of existing rate of Rs. 250 payable to Forest Department for compensatory plantation for loss of reserve forest. The agency for executing reclamation works in case of each project will bc as decided by Government from time to time.

(v) In regard to communal facilities like construction of schools, buildings, drinking water wells, tanks etc. the work will be executed by the concerned project authorities.

(vi) For coordinating the implementation of various schemes under rehabilitation programme, there would be a Rehabilitation Advisory Committee for each project. The committee will be headed by the respective Collector, if the affected area of the project is within his district or by the Revenue Divisional Commissioner if it is more than one District but under his jurisdicton. Where a project is situated involving the jurisdiction of more than one Revenue Divisional Commissioner Government may decide to appoint any one of the R.D.Cs as the Chairman of the Rehabilitation Advisory Committee. The other members of this committee will be the concerned Divisional Forest Officer, Executive Engineer in charge of the project, concerned Soil Conservation Officer or Assistant Soil Conservation Officer and concerned Sub-Divisional Officer. The concerned Special Land Acquisition Officer-cum-Rehabilitation Officer, "if any, or any of the officer nominated by the Revenue Divisional Commissioner or the Collector will act member Secretary of the Committee. The local public representatives like, Sarpanchs of Gram Panchayats, the Chairman of the Panchayat Samities and the M.L.A of the submersible area as well the rehabilitation area would also be the members.

9. The initial proposal for rehabilitation of the displaced persons in respect of irrigation projects along with estimates will be furnished to the Collector of the R.D.Cs, as the case may be, by the Superintendent Engineer with a copy to Chief Engineer, Irrigation. The Collector/ R.D.C will then examine the estimate in the light of the policy indicated above forward his proposals to Government, Collector's proposal being routed through the Revenue Divisional Commissioner. The Chief Engineer, Irrigation, Government in the Power and Irrigation Department will take steps to sanction the estimate as expeditiously as possible and direct the Chief Engineer, Irrigation to place the funds at the disposal of the appropriate agency for execution.

10. The above rehabilitation policy will be followed with immediate effect for all such irrigation projects for which no policy has yet been formulated and issued by the Government separately.