

# Changes in Demographic and Social Conditions of Displaced Families: The Case of a Major Irrigation Project in India

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## *Abstract*

*The paradox of development process of the modern world entails uprooting and displacement of men from their age-old habitats resulting in total disruption of the social, economic and cultural fabric. There is evidence of increased prevalence of poverty, marginalisation, homelessness and joblessness among the displaced population. Using the genealogical approach the study based on 400 households from the villages facing submergence due to construction of a major irrigation dam demonstrates the present plight of the oustees in terms of socioeconomic and demographic parameters. Due to displacement, considerable changes were found in the structure of households and management of productive resources. Increased landlessness, reduction in landholding size and poor quality of newly allotted land together led to reduction in productive resources and increased casualisation, seasonal out-migration and circulation of labour. These further led to changes in the developmental cycle with joint families were being replaced by increasing disintegration and individualization. Age and sex composition of the affected population altered significantly due to out-migration and separation. The study reveals that even after ten years of resettlement, most of the oustees could not attain their previous levels of living.*

## **I. Introduction**

Large scale investments have been made on building dams and canals, power plants, industrial complexes, ports and other infrastructural projects. Cumulatively, these projects not only required acquisition of large tracts of privately owned land but also uprooting people from their habitat. International experience on involuntary resettlement indicates that the development induced displacement has resulted in varied dimensions of impoverishment for these people such as landlessness, joblessness, homelessness, marginalisation, and health, food and social insecurity. Consequently, all these exert tremendous psychological, social and cultural trauma for displaced people which further deteriorates their living conditions and sometimes pushing these families into a zone of permanent poverty. Although the Government in case of displacement offers a rehabilitation package, in most cases it failed to provide enough protection against all these risks.

The plight of oustees displaced by development has received less attention and has remained a scanty research area. This paper discusses in details the essence and pain of the oustees displaced due to developmental activities. A special effort was made to capture the before and after scenario of the oustees, displaced by the construction of a major irrigation dam in Gujarat state of India. It strives to examine the changes in the extent of land ownership, spatial mobility of the households, factors considered by the affected community in selection of particular resettlement sites. An attempt is also made to assess the impact of the changes in the size of landholdings and other productive resources on the demographic attributes, activity pattern and the standard of living of the displaced households. The study also reviews critically the rehabilitation and resettlement package offered by the government.

## II. Methods and Materials

The Panam Irrigation Project was selected for the study because both the beneficiary and displaced populations belong to similar environment, and a considerable time has elapsed since the affected households been rehabilitated at the resettlement sites. Also, it is the only completed project in Gujarat where nearly one-fifth of the dislocated families had been resettled within the command area of the project. This choice has helped in understanding the process of resettlement as well as in obtaining an unbiased comparison of before and after submergence situations of the living conditions enjoyed by the dislocated families. A multi-stage sampling design was followed for the selection of 350 affected and 50 non-affected households by size class of landholdings from the submerging villages. To study the changes in demographic and socio-economic conditions among the sampled households the genealogical approach was adopted.

As a result of the project, almost 8,980 hectares of land (of which two-thirds was cultivable land) was flooded and 3,546 families (22,348 persons) in 42 villages were affected. Three-fifths of the families were "fully" affected whose agricultural land and house were both submerged; they belonged to 32 affected villages. The submergence area formed 15 per cent of the command area and the ratio of affected population to beneficiary population was 18 per cent. The construction of the dam started in 1972 and the evacuation of the affected population began in 1974. By the end of 1978, a majority of the affected families were shifted to the newly created resettlement sites.

### Policy of Land Allotment to Oustees

For the rehabilitation of affected families, the Government of Gujarat allotted agricultural land and house plots along with the provision of basic amenities such as drinking water wells, schools, and internal and approach roads at the new sites. The government also made available concessional transport of salvageable materials to new sites and also loans for house construction. However, the government had adopted a policy of differential scale of allotment of agricultural land to affected *Khatedars* (land account holders). The *Khatedars* who owned four acres or less were allotted the same area of land as they owned before submergence; while those owning between four and twelve acres were given four acres and those owning above twelve acres were allotted one-third of the acreage with a maximum ceiling of five acres. As a result, many *Khatedars* have experienced a considerable decline in the size of land holding and it was likely to have a direct influence on their levels of living after submergence.

### Resettlement Sites

For the rehabilitation of oustees, the Rehabilitation Department had secured a transfer of 28 forest sites from the Forest Department. However, a majority of the oustees were shifted to 15 forest areas where the government created 19 resettlement sites and provided basic civic amenities. These sites were spread widely (located at a distance of between less than 5 km. and 100 km. from the reservoir) and differed widely in their physical environment. Seven sites were created very near the reservoir in the partially affected villages, while the remaining 12 sites were created outside the affected area. Of the latter, six sites were near the district headquarters (an urban centre) and were linked with a highway; three were adjacent to the canal area of either the Panam or the Hadaf

project; and the remaining three sites were created by virtue of availability of forest land in the command area of the project and were also linked with the National Highway and broad gauge railway line.

Out of a total of 3,546 affected families, 2,292 (65 per cent) were eligible for resettlement. Of the eligible families, 39 per cent were settled on the sites located near the reservoir, 25 per cent near urban areas, 15 per cent adjacent to the canal area, and the remaining 21 per cent in the command area. About 28 per cent of the total affected families (1,002) were not eligible for resettlement as their unsubmerged holdings were larger than the government's land allotment norms; they received cash compensation for their submerged land and thus, stayed back in the old villages. Another six per cent of the total affected families (220) also remained in the old villages and opted for *galpat* land with the hope that every year, after monsoon, they would be able to cultivate naturally fertilized land when the water level in the reservoir goes down. The remaining 32 families (one per cent) which did not opt for any site, have moved to unknown destination after taking an *ad hoc* resettlement grant. Thus, due to submergence, many families had been scattered in the affected area as well as outside it.

### **III. Rehabilitation and Resettlement Process**

#### Process of Land Acquisition and Fixation of Compensation

The entire process of land acquisition, evaluation and payment of compensation, selection of site and shifting to resettlement sites was done haphazardly. The concerned department had bypassed the various procedures laid down in the Land Acquisition Act of 1894. The oustees were kept in the dark about the purpose of measurement of acreage and there was no timely issuing of notification for land acquisition. Most of the oustees had come to know about the acquisition of land only when the award for compensation was announced. The illiterate people, completely ignorant about the legal proceedings, were unable to protest against inaccurate measurement of their acreage, wrong classification of land as Jarayat or Kyari and inadequate compensation. They simply cursed their fate and accepted whatever compensation was awarded to them.

Just to be on the safer side, a few land transactions were recorded for the fixation of price of land in all the 42 affected villages without recording the details of the quality of land sold and the circumstances under which it was sold. The government fixed an average price of Rs. 600 per acre, a rate much lower than was recorded in some of the sale deeds and mentioned in the project report. Only three types of land namely Kharabo, Jarayat and Kyari were mentioned in the revenue records, but for fixing the rate of compensation, the acquired land was divided into eight categories and the price so fixed ranged from Rs. 40 for Kharabo (waste) land to just Rs. 1,000 per acre for old Kyari land which used to give yield for two seasons. Our analysis of the data collected during sample survey pointed out that the price of land fixed by the government was equivalent to only one year's income from land.

Compensation paid for houses and wells was also low; for sample households it ranged between Rs. 308 and Rs.10,155 for houses and between Rs. 12 and Rs. 7,708 for wells.

Further, in a majority of households, immovable property (land and well) was owned jointly; as a result, the compensation was distributed among various partners. Moreover, the oustees were deprived of their dues not only by the low rate of compensation but, reportedly, also by the inadequate disbursement of the compensation. On an average, the sample households received only about Rs. 5,600 as compensation to start a new life after dislocation. In a majority of cases, the compensation was spent before or at the time of shifting (mainly on transportation) and during the initial years after their move to the resettlement site; investment for rebuilding the resource base received a very low priority.

### Process of Rehabilitation and Resettlement

The rehabilitation effort was evolved gradually as the project was being implemented. Due to the absence of a general rehabilitation policy in the State, various norms relating to the allotment of agricultural land and residential plots, provision of transportation facility for shifting the movable assets and goods, provision of basic amenities at resettlement sites, etc. were the same as laid down for the Kadana project of Gujarat in the late 1960's. However, the resolutions for the rehabilitation norms for the Panam project were issued piecemeal between 1973 and 1976. While five villages located near the dam site had seen uprooting of households in the first week of June 1974, the rehabilitation department could not secure transfer of forest land from the Forest Department for the preparation of sites in time. They were just dumped in one of the forest areas, and had no option of choosing a site for resettlement. By the end of 1974, information about the availability of all forest sites for rehabilitation was received, and the oustees facing submergence in June 1975 and after, were given some choice in the selection of sites.

1. Dispersal of Ousteers in Relocation Sites: The oustees from the villages on the left side of the reservoir preferred sites in the vicinity of the reservoir, while the oustees residing on the right side of the reservoir, who had no forest area near their inhabited villages, were forced to go outside their old environment. Further, the government's aim to shift each village as a whole to a new site did not work. The villagers were dispersed as some of the oustees preferred to shift to nearby areas due to the social and security reasons whereas others attached importance to economic factors and settled in far off sites located in the command area. However, a majority of the dislocated families were not ready to move very far due to bonds of locality, kinship and neighbourhood; they were evidently not interested taking up irrigated farming in future or in availing of better economic opportunities available outside the affected area.

2. Process of Shifting to Resettlement Sites: The shifting of the oustees was not done systematically; they were informed at the last moment when the water level in the reservoir suddenly rose with the onset of the monsoon. Many of the oustees had to leave behind some of their belongings, as they were threatened with forfeiture of the transport facility offered by the rehabilitation agency. Further, for most of the oustee families, the provision of a single trip per family for the transportation of the salvageable materials was reportedly inadequate. In some of the villages where people had shown resistance to leave, the rehabilitation agency took the help of police. Those oustees who did not shift according to time schedule given by the government had to meet transport expenses themselves.

3. Provision of Amenities at New Sites: The drinking water wells, schools and internal

and approach roads were provided by the government only two or three years after the arrival of oustees. During the initial years of resettlement, the oustees had to walk long distances in search of drinking water. Further, as prescribed in the rehabilitation policy no provision was made for common grazing place, funeral site, pits for storing manures, playground for children and place for other public buildings. Some of the oustees were given a loan for house construction, but many of them received less than the sanctioned amount. The policy objectives about the supply of soil and water for the construction of houses; organising free training classes with some stipend for skilled trades such as carpentry, masonry, turning, tailoring and blacksmithy; and supplying additional land to adult sons and daughters were not implemented.

Most of the oustees were shifted with the onset of monsoon; they faced a lot of hardship in protecting themselves and their belongings from rains. With great difficulties they managed to construct temporary shelter for both the human and livestock population. The waiting period for the allotment of agricultural plots ranged from two months to one year and in some cases exceeded five years due to extraneous reasons. In almost every site some of the oustees were allotted the land already encroached upon by the local residents. They faced open hostility of the native people and did not get the possession of such land. The rehabilitation officials neither interfered in the matter nor allotted an alternate land site to these oustees. Further, the government had allotted forestland to the affected families without clearing it for cultivation. The oustees had to put in a lot of hard labour to prepare the land for cultivation of main crops. Due to the lack of both labour and finance they brought their land under cultivation gradually over two to three years and had to depend entirely on income from casual labour.

4. Hostility From Hosts Near Resettlement Sites: All the new sites form part of nearby revenue villages (which existed even earlier) and, as such, have access to the facilities of panchayat, cooperative society, ration shop, etc. But the hosts always treated the oustees as strangers and in some cases resisted their entry into the villages. The government has not given any response to the oustees' demand for providing these facilities separately. The most important reason for the strained relationship was the curtailment (in the wake of resettlement) of the hosts' right to use forestland for grazing. The oustees were frequently threatened and harassed by the hosts particularly in the initial years after resettlement; the stealing of properties and damaging of crops raised by oustees on the land allotted to them by grazing cattle at night were not infrequent. As a result, the oustees discarded the compact settlements planned by the government and followed the scattered settlement pattern prevalent in their villages of origin.

#### **IV. Changes in Social Environment of Submerging and Resettlement Areas**

##### Growth of Population

The relocation of affected population from submergence area to resettlement area had altered the demographic characteristics of both areas. An analysis based on the 1961, 1971 and 1981 censuses revealed that after submergence, the growth rate of population as well as the average size of household had come down in the affected villages and the decline was directly related to the degree of submergence (proportion of the submerged cultivable area to total village area). The deciding factor was migration. The share of

tribals in the population had increased and that of literate persons had declined after submergence; because the affected tribals, predominantly illiterates, had shown more reluctance than the non-tribals to move out from their old environment because of social reasons and a feeling of insecurity about moving to an unknown place. On the other hand, the growth rate of population in villages (outside the affected area) where the resettlement sites were created, has increased substantially. Moreover, in these villages, after resettlement, the number of households had grown much faster than that of population due to the acceleration of the process of individualization in the management of the household as well as productive assets among resettled families. This finding was confirmed by the sample survey also.

However, the change in the population of the affected area before and after submergence was lower than expected due to two reasons. First, despite the submergence of their entire holdings some of the "fully" affected households did not move to resettlement sites; instead, they settled down on unsubmerged forestland and thus continued their habitation in the old environment. The 1981 Census had enumerated a total of 114 households in three such villages where the entire cultivable area of the village was submerged in 1975. Moreover, some of the "partially" affected families (those whose houses had been submerged but agricultural land had remained either totally intact or was only partly submerged) had constructed houses on their unsubmerged land and had rejected the house sites offered by the government. Second, seven of the 19 resettlement sites were located in partially affected villages. As a result, some of the oustee households that had moved out from their native villages were enumerated in other affected villages after submergence.

### Changes in the Environment of Partly Affected Villages

The submergence has altered the physical environment of the partly submerged villages. The low lying area has been submerged and some land is seasonally flooded in the reservoir. After submergence, the residents of these villages had shifted their residences to the high level area. Due to creation of reservoir the communication between the villages on both sides of the riverbank had broken down. Also, due to the flooding of rivulets, some of the villages had been split into two settlements. The villagers, resident of one part of the settlements, face problems in using the school, post office and transport facilities available in the other part of the village. The proximity to a large mass of impounded water is a new experience for them. Households living very close to the reservoir face the danger of backwater during the monsoon every year. The government did not pay any attention to acquire the houses and other structures coming under backwater effect. Further, after the creation of reservoir the incidence of snakebites and water-borne diseases such as malaria has increased.

After submergence, three types of affected families continued to stay in the partially affected villages along with the non-affected families. They include: (a) families that were not eligible for resettlement; (b) families that did not shift to new sites and leased-out or sold the newly allotted land to fellow villagers; and (c) families that were allotted *galpat* land in lieu of land allotted at new site. To reduce the workload of resettling of oustees at new sites, the rehabilitation agency encouraged oustees to opt for *galpat* land despite its awareness of the uncertainty about the availability of the area of such land and the duration of its remaining above the reservoir level. A majority of the *galpat* land allottees

did not get as much draw down area as was allotted to them (nearly half of them did not get any *galpat* land at all). Even after several requests, the *galpat* land allottees were not allotted alternate land sites. Further, in these villages the good quality land was located in low lying area, which had submerged, while the high land, which had remained intact, was generally of poor quality.

### Commercialisation of the Economy in Affected Villages and Resettlement Sites

The dislocation resulting from the construction of Panam Dam has severely disrupted intra- and inter-village economic and social relations. There is a shift from an economic system based extensively on exchange to a system based largely on cash transactions mainly because of a shift from cultivation to casual employment in agricultural and construction activities available round the year outside the affected and resettlement areas. However, except for the oustees settled in the command area, who use nearly two-thirds of area for cotton and *tur*, others continue to grow crops primarily for home consumption. In the old villages also, the exchange in kind has declined. The decline in agricultural production has lowered the demand for agricultural labourers considerably and the payment of wages in kind to agricultural labourers has disappeared in both resettlement and affected areas. The traditional *Jajmani* relationship between artisans (blacksmith, carpenter, potter, cobbler and also barber) and land owners also no more prevails in the resettlement sites or in the old villages. The artisans have shifted to casual employment. The landowners meet their needs for the services of artisans from nearby large villages and small towns. Thus, the changing nature of economic relationships between landowners, agricultural labourers and artisans has changed the social relations. The traditional image of a multi-caste village, with an individual's livelihood determined by caste-occupation linkages no longer exists.

## **V. Changes in Resource Base of Affected Households**

### Extensive Fall in the Size of Holdings and Underlying Reasons

The households affected by the Panam dam experienced a considerable decline in the size of their land holdings. The average size of land holding of sample affected households declined from six acres to three acres after submergence, and 86 per cent of them (compared to 47 per cent before submergence) now owned less than four acres. Further, the incidence of landlessness has increased considerably, the number of landless households increased from 15 to 37, after submergence. The underlying reason was that they did not get either the possession of newly allotted land or a share from the principal allottees. The decline in the size of land holding was obvious among affected *Khatedars* owning more than four acres. However, an analysis of the land distribution of sample households has revealed that almost every affected landed household had experienced a decline in its holding after submergence. The underlying reasons for such decline were both socio-economic and institutional in nature. First, the government allotted the land on a *Khata* basis and not to each land owning household. In the study region not only was the number of jointly held *Khatas* high but there was also multiplicity of *Khatas* insofar as the hereditary land of several households was in more than one *Khatas*. The land records which formed the basis of entitlement of new land were poorly maintained. In many cases, the sub-division of land among heirs had taken place long

before submergence, after the death of the patriarch, but it had not been recorded. As a result, most of the affected landowners received less acreage than they were entitled to. Second, in a few cases, a family possessing land in more than one *Khatas* was allotted land only against one *Khata*. Also, some errors were made about the quantum of land to be allotted while making adjustment for the area of unsubmerged land. The submergence of a relatively larger area than earmarked for acquisition had also reduced the size of land holdings of households owning land adjoining the reservoir. Third, some of the oustees did not get possession of the land allotted to them because residents of the host village already encroached it upon. Others who were allotted *galpat* land got less than the allotted area because of delayed draw down of the water level in the reservoir. Finally, the decline in the holdings after submergence was related also to the demographic pressure and changes in the household structure. In about one-fifth of the affected land owning households in our sample, the size of land holding had declined because of the partition of households.

Further, implementation of Government Resolution for an additional allotment of land to adult sons and daughters (subject to the condition that the new holding should not exceed one-third of the previous holding) and acceptance of recommendation of the Rehabilitation Advisory Committee to raise the limit from one-third to fifty per cent could have mitigated a drastic decline in the size of land holding of at least one-fourth of the affected households.

### Ownership of Other Assets

The decline in the size of land holding after submergence led to a decline in ownership of other assets such as livestock, agricultural implements and machinery. During the initial years of resettlement, beside untimely mortality of livestock, their population declined considerably due to distress sale. Shortage of living space, lack of fodder, disappearance of grazing land, and the urgent requirement for cash for daily household needs had forced many oustees to sell their livestock at throw away prices. However, the decrease in livestock population was not in the same proportion as the fall in the size of land holding or gross cropped area because many households continued to possess a minimum of livestock, particularly a pair of bullocks. Compared to before submergence situation, the bullocks were grossly under-utilized, as the gross sown area under per bullock pair has declined more than half after submergence.

Due to the submergence of wells, there was a decrease also in the ownership of wells by more than half and its use for irrigation. However, the method of irrigation has changed from traditional devices to oil engines. The number of oil engines has doubled after submergence because of the need to lift water from the Panam canal and reservoir for irrigation and also easy access to credit facility. In the resettlement sites, some of the oustees have also taken loans for digging wells.

## **VI. Changes in the Structure of Households and the Management of Resources**

The submergence has also led to changes in the developmental cycle of the households and the management of productive resources. The tendency towards disintegration of joint families and individualization (i.e. the management of both resources and household

independently) among affected households has accelerated relative to the before submergence situation or even compared with the life style of the non-affected households. The tendency towards partition of households was stronger among non-scheduled and non-backward caste households; as a result, the average size of household among scheduled and backward caste households has risen after submergence. The recognition of disadvantage of holding joint *Khatas* has speeded up the sub-division of land holdings. Overall, in 44 per cent of affected land owning households, the management of holding has changed after submergence; 20 per cent of the households which were cultivating land jointly before submergence, have given up the practice; and in another nine per cent of households, partition of household as well as land has taken place after submergence. Further, there has been a departure from joint to individual ownership of wells because the ancestral wells which submerged were owned between different generations while the new wells have come up mainly through the investment of compensation money or loan from the bank. On the other hand, joint ownership of an oil engine has increased because of their high cost and the decline in the size of land holdings after submergence. The affected households have changed their agricultural practices and cropping pattern after submergence, due to the disappearance of *Kyari* land and the allotment of *Jarayati* land at the resettlement sites. Before submergence, a majority of affected households owned a *Kyari* plot and used to grow paddy in kharif and wheat or gram in rabi season without irrigation; *Jarayati* land was used mainly to grow maize and *tur* in kharif season. After submergence, at all the resettlement sites, the crops are grown only during the kharif season; as a result, the intensity of cropping has decreased. The share of paddy, wheat, *bajra*, gram and groundnut has shown a marked decline while that of maize, *tur* and cotton has increased.

Despite the decrease in the size of land holding, the agriculture has not become intensive because of the low level of irrigation. The share of irrigated area has not increased because of the delay in the completion of farm-level distributaries in the command area and low level of investment in wells in the non-command areas. After submergence, the affected households have, for the first time, adopted HYV seeds, but their use is concentrated in the command area. Further, the use of chemical fertilizer has increased partly because of (a) the reduced production of the manure from limited livestock, and (b) an effort to achieve, from the reduced area, a level of output which used to be obtained from submerged land. However, many of the oustee cultivators have failed to achieve the expected yield.

Further, the productivity of newly allotted land except for the land allotted in the command area as well as of the unsubmerged land is much lower than that of the land owned by non-affected households. Further, about two-thirds of the sown area in the command is devoted to high priced crops (cotton and *tur*). As a result, the value of output per acre of land of households resettled in the command area is higher than that of not only the households resettled in the non-command areas but also relative to that of the non-affected households. In fact, households that had experienced only a marginal decline in holdings and had been resettled in the command area are better off relative to their submergence situation.

## **VI. Changes in Living Conditions and Social Life of Dislocated Households**

### Shifts in Economic Activities and Migration

The decrease in the size of land holding, cropping intensity and productivity as well as increase in incidence of landlessness among affected households have had a cumulative effect on their activity status. The share of self-employed workers (mainly in cultivation) has declined and that of casual workers has risen after submergence. Among females, there is also a significant shift from preoccupation with household duties to casual employment. After dislocation, a majority of the male workers have undertaken more than one activity during the reference year; also the average number of working days has increased. Before submergence, 81 per cent of the affected land owning households pursued cultivation only while after submergence, their percentage declined to 17. Further, in 54 per cent of households the cultivation did not remain their principal occupation (which is defined in terms of time allocation of male workers in a household).

After submergence, the dependence on cultivation has reduced and that on casual work has increased considerably. More than three-fourths of the affected households supplemented their land based income through casual work, and the share of casual income in total income was inversely related to the size of land holding. The determinants of casual work by a household are: size of land holding, productivity, cropping intensity, level of irrigation, assets and family size. Further, as casual work was not available throughout the year in the neighbouring area, about 42 per cent of the affected households had to out-migrate seasonally. After submergence, the incidence and the duration of seasonal out-migration have both increased.

Like all voluntary migration, the seasonal out-migration is also selective. Males, relatively young and low status people (in terms of caste and the size of land holding) are more prone to out-migrate. Out migration of females was restricted because of longer duration of stay outside home, less household's consumption needs, responsibility towards younger and older members of the household, higher size of land ownership and the choice of an urban centre as destination.

Besides the push factors operating at the household level, the quantum of out-migration from a settlement area was related to the duration of employment and the difference in wage rates between agricultural and non-agricultural activities in the neighbouring and distant locations. The average wage rate at destinations of migration was higher than in nearby settlement areas by 100 per cent in agricultural labour and by 20 per cent in construction labour. However, in both areas, the wage rate in construction activity was higher than in agricultural activity. The oustees resettled in the command area and near the urban centre were the least prone to out-migrate due to the availability of employment in quarry and construction activities in the vicinity throughout the year. After submergence, the limited employment opportunities in the affected area pushed the households to out-migrate to distant places during the slack period.

Further, not only the level of migration but also the circulation of migrants has increased after submergence. Before submergence, oustees used to migrate at the time of harvesting of winter crops but after submergence, they move to harvest monsoon crops

as well. Most of them undertook two or more moves during the year. There is also a shift from short duration moves for crop harvesting activities in rural areas to long duration moves for construction activities available round the year in urban centres. Most of the seasonal out-migrants go to rural areas of the adjoining district and/or to the nearest cities.

The income earned through seasonal migration constituted three-fifths of the total annual income of the affected migrant households. Excluding transport and living expenses, they saved about two-fifths of wage income. Savings were higher among migrants that had worked in rural areas than among migrants to urban areas because of the difference in the cost of living. However, all the savings were spent on consumption needs during the lean period of employment, particularly during the monsoon, and were not sufficient to rebuild their resource base.

### Changes in the Level of Living

The annual income of the affected households from their basic resources (land and livestock) was about half that of the non-affected households. The results of the decomposition analyses show that only a small fraction of differentials in mean income between affected and non-affected households can be attributed to differences in the resource base (such as the size of land holding, assets, family size and number of workers) while a large proportion is attributable to other factors such as the quality of land and other resources, socio-economic environment and other personal characteristics. The analysis clearly shows that the quality of land (in terms of productivity and cropping intensity) is the most important factor in explaining the gap in income between non-affected and affected households, particularly those resettled in the non-command areas.

Many of the economic changes associated with changes in the size of landholding assets and agricultural production are obvious. However, a notable proportion of affected households had taken bank and government loans for house construction, digging of well and to purchase oil engine after submergence. As a result, the liabilities of affected households have increased considerably. At the same time, an average affected land owning household is much poorer now than he was before submergence. About three-fifths of the affected households are living below poverty line (with an annual income less than Rs. 4,800) and about 32 per cent of them are very poor (having annual income less than Rs. 3,500). The percentage of the poor was the lowest among households settled in the command area and second lowest among non-affected households.

While the general level of living cannot be said to have declined to the same extent as the decrease in the resource base, there is no doubt that the overall level of living has deteriorated significantly after dislocation. The quality of life of the affected households before and after submergence has been assessed through 23 indicators representing eight components of level of living such as education, casual employment, employment in cultivation, cultivation intensity, housing conditions, household durables, assets and institutional facilities. Most of the indicators have recorded a significant change after submergence.

Despite dislocation, there has been a widespread improvement in the education level and availability of institutional facilities for both affected and non-affected population. On the other hand, there has been a marked decline in the indicators of employment in cultivation and a substantial increase in those of casual employment among affected households. Further, a significant increase in the use of fertilizer and HYV seeds, and a moderate increase in irrigation could not compensate the decrease in the double-cropped area after submergence; as a result the dependence on land has reduced considerably.

Interestingly, all the indicators of casual employment were inversely related with the remaining indicators of level of living. The decline in resource base and double cropped area after submergence has pushed most of the affected households to depend heavily on casual wage employment for their survival, as a result, they continue to lead low quality of life. However, the housing condition has shown changes on both sides, a relatively higher proportion of affected households live in pucca houses and temporary structure and lower proportion of them in semi-pucca houses after submergence, as a result, variation in housing condition has increased.

The analysis based on relative and absolute change in the level of living indicators clearly shows that the effect of submergence on the living conditions of affected households was uneven. About one-fifth of affected households with certain characteristics have improved their level of living after submergence, because they had experienced a relatively smaller decline in the size of land holding, cultivation intensity and employment in cultivation; they have also recorded a significant increase in the level of education, assets, household durables and housing conditions. The improvement in the level of living was also higher among households dependent exclusively on cultivation or those combining cultivation with household industry, trade, and regular salaried occupation. Such households, which have experienced an improvement in their level of living after submergence, were found in almost all the sites; however, a majority of them were in the command area; and another significant proportion were in the sites near the urban area. Oustees settled on these sites have also reported a lesser inadequacy of food and poverty than households settled elsewhere. Interestingly, even some of the landless households settled in the command area have improved their living conditions after submergence. On the other hand, the affected households that stayed back in their old environment (near the reservoir and in the unsubmerged areas) have suffered the most. Because of their bonds of locality, kinship and neighbourhood, they did not take interest in future irrigated farming and the possible better economic opportunities available outside the affected area.

### Social Life and Relations Between and Within Families

Dislocation had a direct impact on village social life. Many affected villages were resettled at more than two sites, all distant from the submergence area. As a result, both inter- and intra-village social relations have weakened over time. Their ties of kinship and mutual inter-dependence with the affected area were shaken and the effects continue to be felt over more than one generation. The interest in participation in community festivals, customs and traditions is yet to develop in the resettlement sites. The famous ancient temple of the Lord Shiva (where the dam site is now located) has been submerged. There was a popular belief that a bath in the river at the temple site frees one from all the sins. Every year on the Mahashivratri day (birthday of the Lord Shiva, usually falls in February)

a fair was held where about ten thousand people used to assemble (Government of India, 1964: 36). The authorities have constructed a new temple at the cost of Rs. one lakh at the dam site, but it does not evoke the same enthusiasm among villagers as the ancient temple on the Panam River.

The marriage alliances are most severely affected after submergence because of the fall in the standard of living of the oustees; they cannot easily get daughters-in-law though their daughters are accepted among their equals (in terms of status). The population of host villages still treats resettlers as "strangers" and in some places their relations are not harmonious. As a result, the resettlers continue to seek marriage alliances in the vicinity of submergence area or among resettlers themselves. The settlement of people from more than one affected village at each resettlement site has necessitated a new pattern of integrated relationships but it is yet to develop. Further, at almost every site the traditional leadership drawn from the large land owning class has been replaced by young and educated leaders who do not necessarily belong to the upper strata.

The allotment of land on *Khata* basis led to the break down of the joint family unit among landowners. After submergence, land is no longer cultivated jointly by father and adult married sons or by brothers. A majority of separated members could not mention any specific reason for separation; evidently, the separation was not necessarily as a result of rivalry or hostility among members. Every family seems to be seeking greater independence even though they cannot manage with a small piece of land and have to take up hard casual work for survival. A growing tendency to shoulder individual responsibility has led to the partition of households and the ownership of land and other assets; as a result, the family ties have weakened after submergence.

## **VII. Conclusion**

To conclude, the rehabilitation programme offered to the oustees of the Panam project was far from adequate and could not sustain the previous level of living of most of the oustees. Secondly, the rehabilitation effort was very slow and was implemented only partially. Now the rehabilitation task is over as the affected families have received the compensation for their submerged property and have been allotted agricultural and house plots at resettlement sites along with the provision of basic amenities. Still a lot remains to be done to prevent a further deterioration in the level of living of oustees of the Panam project. As attention is focused on the oustees of Narmada, others who have suffered earlier need not be forgotten.

One must recognize that the oustees need to be made essential participants in the process of development, and the procedures, incentives and effort must be so directed to encourage them to become a part of the main stream of the state's growing economy. In recent years, the help of voluntary organizations and the increasing awareness about happenings in the neighbourhood have induced the oustees to be better organized and they have refused the very inadequate rehabilitation package. During 1980's, the oustees' frequent protests in the case of Narmada Sagar (Madhya Pradesh) and Sardar Sarovar (Gujarat) projects have persuaded both the state governments and the international funding agency (the World Bank) to frame a much better rehabilitation and resettlement policy. Elsewhere, the oustees' anti-dam campaigns have contributed to the stalling of the Silent Valley (Kerala) and Koel Karo (Bihar) projects. The oustees of the

Panam dam area were neither organized nor assisted by voluntary agencies to fight for better rehabilitation packages or effective implementation of the accepted policy. A possible cause of action for the oustees of the Panam project might be to fight for some parity with the persons affected by the Sardar Sarovar Project with respect to benefits. However, one such move is on the horizon at present.

### Streamlining the Resettlement Effort

First, families that were not able to get possession of allotted land due to encroachment or inadequate draw down of reservoir level (*galpat* land) should be given alternative agricultural plots. Some of the *Khatedars* whose holdings were partially submerged, particularly in up to 4 acres category did not get land according to the prescribed norm; they should be treated on par with the fully affected *Khatedars*. Families that had experienced the submergence of more acreage than estimated, should be compensated and the balance acreage should be allotted. Therefore, reassessment of both submergence and *galpat* areas is highly required. Further, the allotment of additional land to adult sons of families holding *Khatas* with more than 15 acres of land should be implemented immediately. In 15 out of 19 resettlement sites more than 900 acres of agricultural land is left unallotted; allotment of even two to three acres to all the 37 landless families would have been most welcome; but there could be pressure for parity with the compensation and other benefits being given to the persons affected by the Narmada Project.

The unallotted land can fruitfully be put under tree plantation with the help of the Forest Department to augment the quantum of employment and the future supply of firewood. Some resettled households have already got regular employment in tree plantation, undertaken by the Forest Department, along the Panam canal and in the command area. In one site, resettlers have, without any assistance planted trees along the road and house sites to provide relief to both human and animal population.

Houses facing backwater effect every year should be acquired and compensated; these households should be allotted new house plots. There is a lot of employment potential in the development of fishing activity in the affected area. Cooperative fishery societies were formed with the help of the Gujarat State Fisheries Development Corporation but remain limited to only four villages. Special efforts have to be made to increase the participation of people in fishing activity and to enhance the yeild from the reservoir. Similarly, some of the households in the affected area are engaged in collection of minor forest produce such as Timru leaves, *Mahuda* flowers, gum, honey, etc., but they are unable to get adequate price in the local market. The Gujarat State Forest Development Corporation can help to improve their marketing.

Irrigation is the most important input to raise the agricultural productivity. Of the 12 sites located outside the affected area, three sites already have a tank; and two other sites have the potential to build a tank. With some financial assistance by the government, the resettlers were ready to provide free labour to facilitate irrigation from tanks. Dug wells are another important source of irrigation. In Kawali sites, located near the Panam canal, the people have requested the Irrigation Department to construct a pipeline from the canal to irrigate their fields. However, the department had not responded favourably till the date of survey. Similarly, while the field channels were dug in the command area

sites, after some initial hesitation; and irrigation potential was not fully achieved. The exploration of possibilities of providing irrigation facilities in the non-command area sites in future would reduce the income differentials between resettlers in command and non-command areas.

There is good scope also for dairy development in both affected and resettlement areas to raise the living conditions of the people. After submergence, the grazing area has become limited, but given requisite credit facility, a shift can take place from grazing bovines (cows) to stall-fed bovines (buffaloes). Dairy cooperatives can be encouraged at resettlement sites with credit from the banks or under the IRDP. Such efforts could help the affected households, particularly to those women that have become casual labourers after submergence.

A vocational training programme (with some stipends for the trainees) in carpentry, masonry, turning, tailoring and blacksmithy can be implemented without any delay. If possible, certain other courses which have a great demand (such as welding, plumbing, tractor and oil engine repairing, fitter and electrician) can be included. For this task a special cell needs to be set up with the primary objective of encouraging and recruiting the youth from affected households for these vocational training courses. After the completion of training, guidance should be provided for jobs and for those who wants to start their own shops, adequate arrangement for loans should be made.

As a long term plan to raise the living conditions of oustee households would be to ensure one person to become self-employed in non-land based occupations. This could be carried out either by providing preferential access to credit or by providing a permanent job in the government sector. For instance, in the Dhom irrigation project in Maharashtra, the oustees have been given preference in government employment in Class III and IV services (in the Irrigation, Rehabilitation, and Revenue Departments). They have also been given age limit relaxation of three years and issued a certificate as "Dam Affected Persons" (Sawant, 1985:64). Further, enterprises which have received benefits from the Panam project can be asked to absorb the affected people.

All the resettlement sites form part of the already existing revenue villages in the vicinity. The facilities of panchayat, cooperative society etc., are available to the resettlers through the revenue village. But the hosts are so hostile that some of them do not allow the resettlers to enter the village. The most important reason for strained relationship is the increased pressure on limited resources. To avoid open confrontation with the hosts, the resettlement sites should form independent villages with the appropriate institutional structure (such a policy was followed in the Ukai project of Gujarat state). There are at least three clusters of resettlement sites (three sites in the command area, four sites near urban areas and two sites adjacent to canal area) each having more than 350 households, where an independent panchayat and a cooperative society can be formed first. The resettlers from these sites have already approached the government in this regard. Further, the allotted forestland is yet to be transferred to the Revenue Department, which in turn would confer the land rights on the allottees. The absence of land titles deprives the resettlers the credit from banks, assistance under any poverty alleviation programme and benefits from agricultural extension services. Therefore, the formation of independent villages in resettlement sites is an urgent need.

The provision of public amenities should not be limited to matching the facilities existing in submerged villages. The availability of public facilities in an upstream area has generally been much lower than in the plains because of high cost. The basic facilities at resettlement sites need to be on par with those in the nearby revenue villages. Such effort would help to reduce the open hostility between the hosts and resettlers for the utilization of facilities.

No attention has so far been paid to the health conditions of both human and animal population at the resettlement sites or in the affected area. The affected population had to approach a private doctor in the vicinity or to travel long distance to avail of the services of the public hospital at the sub-district or district headquarters. A dispensary at least in each cluster of sites and affected villages is an urgent need. Also, so far no steps have been taken to electrify the resettlement sites and the affected villages.

Finally, four offices were involved in the rehabilitation of the Panam project oustees. They were located at the district headquarters and there was no proper coordination among them. The affected people had no information about which office was handling land acquisition, payment of compensation, selection and preparation of sites, shifting, allotment of agricultural and house plots, etc. The affected people had to come all the way from their villages to the district headquarter for their rehabilitation problems and wasted a lot of money and time in moving from one office to another. The frequent transfer of officials had further aggravated the problems. A 'single window' system to provide guidance and relief to the affected people for all grievances and problems needs to be located near the project site and/or the resettlement sites.

### Lessons for Resettlement Policy Elsewhere

In a country of vast diversities, it is difficult to form a uniform national policy of rehabilitation and resettlement of oustees. Nevertheless, the provision of a minimum of resource base (land, livestock and other assets) for both the affected landless and land owners and civic amenities (such as a school, a dispensary, road, a drinking water well, a post office, electricity, a ration shop, panchayat and other community buildings) at the resettlement sites should form the core of the national policy of rehabilitation and resettlement. Many micro- level studies in various parts of the country have confirmed that so far the rehabilitation programmes have not paid adequate attention to the necessarily long-drawn and painful process of resettlement. As a result many oustees have experienced deterioration in their living conditions after dislocation. Rehabilitation is a static and short time process, which focuses only on the payment of compensation and shifting of affected population to rehabilitation centres with some arrangement of food and shelter. Once the oustees have been shifted, the rehabilitation process is considered to be over. Resettlement, on the other hand, is a dynamic process, which starts after the arrival of oustees at the rehabilitation centres. It requires a longer time and continuous input from the government, voluntary organizations and the local people till the oustees adjust and adapt to the new habitat and are able at least to recoup not improve, their previous level of living. Evidently, the resettlement package should include incentives and facilities to shorten the transitional period and to overcome the economic, socio-cultural and psychic stresses at the new environment. The package should be adequate to safeguard their previous living conditions and mitigate the hardships of the second generations.

Therefore, the rehabilitation and resettlement plans should guarantee and include provisions for adequate monetary compensation for the lost assets as well as employment; alternative land for the land acquired; choice in selection of resettlement sites; free transportation of salvageable materials; clearing, leveling, bunding and initial ploughing of new land to be allotted; distribution of free or subsidized seed, fertilizers, pesticides and fodder for a few years; training in agro-industry, dairy, fisheries, and other skilled activities; special incentives for women to pursue gainful occupations; establishment of cooperatives; preference in employment in the public as well as private sector; financial assistance through loans to pursue productive activities; watershed development, soil conservation and agricultural extension services; rehabilitation grants during the initial transition period; establishment of resettlement sites as independent villages, including schools, drinking water wells, dispensaries, electricity, road, transport and communication, panchayat, community and other religious centres. Every adult son should be considered as a potential separate household unit for land allotment and distribution of other assets so as to solve the problems of the second generation.

To mitigate the adverse impact of dislocation on the level of living of the affected people, the best policy may be to locate the resettlement sites in the command area. To facilitate such resettlement, land should either be acquired from the beneficiaries and/or purchased from the open market. Alternatively, the sites should be located in areas with a future possibility of irrigation or other locational advantages in terms of employment opportunities in non-land based activities.

For instance, in one of the best planned projects in the world (Volta Resettlement Project in Ghana), the criteria considered for the selection of sites were: soil conditions, health conditions, access to other towns, water supply and the wishes of the people (for details, see Chambers, 1970; Kalitski, 1973).

To execute and implement the policies effectively, a strong will and ability is required, which the government executive agency generally lacks. Therefore, the assistance of non-governmental organizations (NGOs) is highly necessary. The NGOs have already proved their worth in establishing a good rapport between the government and the people and in carrying out various rural development programmes. Further for better coordination and smooth functioning of various agencies to be involved in implementation, a high level autonomous body should be formed which should include representatives of the affected people and NGOs.

Finally, the most crucial aspect is to get the finance for the programmes laid down in the rehabilitation and resettlement plans. First of all, the entire cost of rehabilitation should be included in the total project cost. Also, the existing water and electricity rates, which are extremely low on account of socio-political strategy to subsidize agricultural sector, should be increased. The tariff should be above the administrative and maintenance costs so that the additional revenue could be utilised for the betterment of the affected people. Further, the government can tax the income from the provision of irrigation to agriculture and/or the new enterprises attracted to the region by the construction of dam (as was followed in the case of Kariba dam in Africa, see Colson, 1971).

This study was a micro-level investigation to understand the process of rehabilitation and

resettlement of people affected by an irrigation project. The possibilities of drawing generalized inferences were obviously limited, however, its results can be compared with the experiences of involuntary migration elsewhere. Finally, the findings of this study can facilitate the formulation of effective measures to reduce the economic stress and the psychic and social costs of involuntary migration of a weaker section of the population who are required to sacrifice their habitat and traditional and long established way of life for the greater good of the society. The larger group, which includes many fortunate persons who receive the benefit of irrigation facilities in the command area, certainly needs to minimize the trauma and suffering of the less privileged residents of the upstream area; and it must, in fact, share the gains of development with the less privileged sections of the community.

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