Chapter-IV

POSITIVE AND NEGATIVE IMPACTS OF BIG DAMS

A DEBATE

Rivers have been source of livelihood from ancient times. The alluvial soil brought by them has made their banks and adjoining plains so fertile that our country would never run short of food and fodder. Almost all the ancient civilizations grew on the banks of life sustaining rivers. Rivers have been a valued part of earth's landscapes for a long time. Man selected banks of river for living because these were a source of fresh water and it is almost right to say that life cannot exist without water. These have been the agents of transportation in both the hydrologic and the geologic cycles. The present day values of river include the use of their water for agriculture, industry, recreation and domestic supply.

The rivers gave distinct mark to the culture, learning, agriculture and commerce. In last few years, these life sustaining streams have turned into silts, sediments, industrial and domestic wasters and residues of chemical fertilizers. In India, since independence, rivers have been subjected to tremendous pressures due to the construction of dams and modern industrialization.
The Dams were regarded as Temples of Modern India by Pt. Nehru, but with the passage of time, it has become an undeniable fact that the fascination for gigantic Dams at the cost of environment has failed to fulfil the objective of controlling floods and droughts. "In the absence of green cover, the large Dams have indeed become agents of flash floods. The adverse impact has invariably outweighed any potential benefits like the Aswan Dam - now the Sorrow of Egypt - a Sad fate awaits many Third World countries. Behind the pride and confidence of the victory of technology over nature is lurking serious threat to life. Many of our own proposed big Dam particularly, Narmada Sagar in Madhya Pradesh and Sardar Sarovar in Gujarat, Tehri dam in Garhwal Hills is being opposed by conservationists for ecological reasons.\(^1\)

This chapter examined a wide variety of problems and socio-cultural and environmental impacts that stem from human short sightedness about the impact of their actions on the environment. The theme of this discussion is that if the policy makers decided to raise the environmental policies and impose certain limitations and regulations on these projects, than each of these problems is under our control.

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Our Environment is under threat of losing its balance. The development efforts and penetration of mains activities in the environment are leading to various impacts on humanity and nature.

Environmental and Other Impacts of Dam Building

1. Displacement: One of the great problems of major dams is the displacement of people from the submerged area. The policy of government generally includes compensation in the form of land and homes. The dams usually displace the tribal people who are uneducated, neglected and poor.

As things stand, the Government of India does not have an explicit national policy on resettlement and rehabilitation. Though draft of national policy has been prepared by the Ministry of Rural Development, but is still at the stage of consideration by different ministries. A few state governments have formed their own-policy. Typically resettlement is the responsibility of the relevant project authorities, and what displaced persons actually get depends a great deal on their political power and organizational abilities.\(^2\)

The displaced people often belong to tribal or disadvantaged sections of the population and there have been very few instances of a successful resettlement and there are plenty of disasters.

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\(^2\) Dreze (Jean Samsori (M) Singh (S) The Dam and the Nation Displacement and Resettlement in Narmada Valley, p. 2.
The Tehri Dam project will submerge Tehri town and 112 villages, 69 of these partially. Some villages have been or will also be acquired for new Tehri Township and for other project related purposes. In all some 9290 rural and 4551 urban families are going to be affected.

The Narmada Valley Project will displace about one million people, 126 villages will be submerged in Maharashtra, Madhya Pradesh and Gujarat and other 365 villages will be partially submerged.

**Displacement of People by Narmada Sagar and Sardar Sarovar Projects**

<table>
<thead>
<tr>
<th>Displacement</th>
<th>Narmada Sagar</th>
<th>Sardar Sagar</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. No. of villages to be fully submerge</td>
<td>89</td>
<td>37</td>
<td>1265</td>
</tr>
<tr>
<td>2. No. of villages to be partially submerge</td>
<td>165</td>
<td>200</td>
<td>365</td>
</tr>
<tr>
<td>3. No. of families to be affected</td>
<td>10,758</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. No. of people to be affected</td>
<td>1,29,000</td>
<td>67,000</td>
<td>1,96,000</td>
</tr>
</tbody>
</table>

The Tehri Dam will displace a large chunk of hill people. It will uproot and disturb atleast 1.25 lakhs people. There is no concern and provision for the rehabilitation of these people.
<table>
<thead>
<tr>
<th></th>
<th>No. of families</th>
<th>No. of villages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>9290</td>
<td>112</td>
</tr>
<tr>
<td>Urban</td>
<td>4551</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>14,841</td>
<td>112</td>
</tr>
</tbody>
</table>

Out of these only 1,800 have been so far been rehabilitated. The villagers have been settled in Doon Valley and Pathari near Haridwar on marginal land. These people are mostly hill people. In their previous location, they used to collect fuel, fodder, sile roots, timber and vegetables from the forests. They irrigated their fields with natural springs but in the new settlements, they have been denied of these facilities.

**Resettlement and Rehabilitation Policy of Government**: The Rehabilitation package being proposed by the Tehri project is not clear. Indian Government does not have a National Resettlement Policy. Displaced people are only entitled to meagre compensation. "The poorest of them, Dalits and Adivasis who are either landless or have no formal title to their lands, but whose livelihoods depend entirely on the river- get nothing. Some of the displaced have been subsequently displaced three and four times - a dam, an artillery proof range, another dam, a uranium mine. Once, they start rolling, there is no resting place. The great majority is eventually absorbed
into slums on the periphery of our great cities, where it coalesces into an immense pool of cheap labour.³

The package proposed by the Tehri project is inadequate and much inferior to that accepted for other similar projects. The planning and execution of the rehabilitation programme is very poor. The estimate of the local number of people likely to be affected is not clear, land for rehabilitation had still not been acquired in some cases, and the legal little for the land had not been transferred to even those shifted ten years back. Millions of people have been displaced by development projects in India since independence. Out of this less than 25% of the displaced have been resettled or compensated.

In the nine villages that have already been resettled in Gujarat, there are serious rehabilitation problems, many of which have been handled poorly by project authorities. Problems such as water, fuelwood and folder shortages, and conflicts with host communities are common place. Land tilling problems, inadequate land plots, disintegration of village units and proper agricultural land have also been recorded by the monitoring and evaluation team for Gujarat and by an independent team of social workers in

July 1990. Several Bank missions since 1987 have also reported severe problems in the resettlement villages.⁴

Tehri Dam Hydro Project Corporation proposed package providing two acres of development agricultural land, along with a homestead point of 200 sq.m. Due to the paucity of the land, some of the families are yet to be given a half of the plot of land and still others are to be provided cash compensation.⁵

Rehabilitation is the biggest problem facing the projects today. The check-by-youl hutment and ugly flats that mar the mountainside of New Tehri are a poor alternative to the ancient township nestling in the valley that will be submerged. Thus it is necessary that the centre and the state capitals gives Tehri Ki naddi a thought. Since project approvals, there has been systematic negligence in resettlement and rehabilitation planning and implementation. Even the basic element of a resettlement plan - land for resettlement has not yet been identified for all oustees. There is an urgent need on the part of state governments to re-establish the resettlement plan for rural populations and to mark plots of land necessary for resettlement.

2. Deforestation: Environmental resources, such as forests, atmosphere and sea are multifunctional and they have multiple competing

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uses. For example forests are a source of timer, bark, saps and more particularly, pharmaceuticals. Tropical forests also provide a habitat for a rich genetic pool. In addition, forests influence local and regional climate, preserve soil cover on side and in the case of waters heads, protect soil downstream from floods. Increased run off of rainwater arising from deforestation helps strip soil away, depriving agriculture of nutrients and logging water reservoirs and irrigation systems. The social value of forest typically exceeds the value of its direct products and on occasion greatly exceeds it.6

Forests also provide a natural cleansing mechanism and maintain the oxygen and CO₂ balance apart from providing habitat to countless varieties of life forms. These forests are disappearing at a rate of between 7.6 million and 10 million hectares per year and thousands of species are becoming extinct along with disappearance of forests.7 The amount of oxygen produced by forests will diminish with the decrease in plant cover. The effect of the decrease of oxygen and increase of carbon is already heating up the atmosphere. If the process was not halted in time, then this will results in the melting of glaciers and it may raise the level of the seas as much as 400 feet with large land areas vanishing, under water. It is a fact that with the depletion of forests, fresh water springs are fast drying up. Soil, water and

7 Our Common Future, op. Cit., p.
Oxygen are the main products of forests. The women of Garhwal created the chipko slogan as.⁸

What do the forests bear?

Soil water and Pure Air

Soil water and Pure Air

Are the Basis of life.

The craze for modernisation has led to massive deforestation. In order to satisfy the demands of mounting populations and development goals of nations, earths forests are being destroyed one foot- ball fields worth every second, or three Switzerland's worth every day, of forests are being cut regularly.⁹

Man has forgotten the significance of the forests. Trees were given much importance in the ancient days. As per Shrimad Bhawatam, Krishna? says to his companions "Friends have a look at these trees, which live only for the sake of others, they been the scorching sun, torrential rains and biting forest, but protect us." Modern man has failed to appreciate the ancient wisdom and rapidly destroyed the forest cover. Present day environmental

¹⁰ Gore (Albert) Op Cit, Note 14.
problems have direct links with deforestation. The construction of big dams on the rivers is leading to complete deforestation in those areas. Submergence of large forest tracts is bound to create pressures on remaining forest areas in adjoining places.

The Sardar Sarovar and Narmada Sagar Dams will inundate 54,076 ha of rich forest the biggest submergence that has taken place in the history. The cost of loss of forest due to Narmada Sagar and Sardar Sarovar is estimated at Rs. 33,000 cr. And Rs. 10,000 cr respectively.

Total Forest land to be submerged by Narmada Dam:

<table>
<thead>
<tr>
<th>Project</th>
<th>Forest Land (ha)</th>
<th>No. of Villages affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sardar Sarovar</td>
<td>13,744</td>
<td>234</td>
</tr>
<tr>
<td>Narmada Sagar</td>
<td>40,332</td>
<td>254</td>
</tr>
<tr>
<td>Total</td>
<td>54,076</td>
<td>488</td>
</tr>
</tbody>
</table>

The Tehri Dam will submerge about 2250 ha area of forest land and 1600 ha area of agricultural land.

<table>
<thead>
<tr>
<th>In/hectares</th>
<th>No. of village</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural land</td>
<td>1600</td>
</tr>
<tr>
<td>Forest land</td>
<td>2250</td>
</tr>
</tbody>
</table>

11 Narmada Project Authority, Project Report.
The government has given the task of afforestation and densification to the forest departments of the affected regions. The UP Forest Department has taken up the task and had already completed work on 15,000 ha of forest land. THDC is undertaking compensatory forestry in double the area of the submerging forests in Lalithpur and Jhansi districts where it has been able to locate non-forest lands skirted to afforestation. 2800 ha has already been planted through the forest Department at the cost of the project. In the similar way the NUDA has also promised to afforest 90,000 ha of degraded forest land. But these promises fail to satisfy because the forest area once submered cannot be reclaimed forever. Then there are certain loopholes in policy of forest Department (1) The Department has not examined whether afforestation can be carried out on degraded forest land or not. (2) The Department has no infrastructure to raise plantations. Moreover even, the reforestation of degraded forest lands will hardly replace the loss of natural forests. First and foremost the man-made forests of the forest department are better categorized as plantations. Often, they do not harbour such species as one would find in natural forests, particularly wild plants valued now for their genes. Equally important they are unable to support either tribals or

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12 Verghese, Op Cit, pp. 88-90.
wildlife. So there is further loss: the priceless is being replaced by substandard substitutes.¹³

This will make the matters worse. This man-made forest will not be able to meet the socio-ecological requirements of the growing population and acute shortage of fodder will compel the villagers further to take their cattles to the plantation area for grazing. Thus, besides commercial exploitation of the forests indiscriminate lopping and clopping of branches by the local people in order to fulfil their daily needs will further deteriorate the situation. In this context, the need for educating the local people, on the advantages of maintaining a proper ecological balance is being felt. During the chipko movement, plantation was considered only the means of arresting the sinking process.

**Regeneration and Protection**

"The DGSS, along with other local voluntary organisations, organised a plantation camp at Joshimath during 15 May to 2 July 1976. About 150 volunteers participated, and 8,000 trees were planted. Besides this, a wall of 1,500 metres long was constructed to safeguard these saplings from cattle. In 1977, 6,000 more trees were planted in Joshimath and 6,000 in Almora district, as well as about 1.5 millions willocos and poplars along the river banks. In 1978, the DGSS launched a massive programme of reafforesting.

¹³ Allvares, Billory, Op cit., p. 28.
27 villages, situated in the catchment of Garur, Ganga and its tributaries. The DGSS activists used to go on long foot marches to make personal contacts with the local people. They found that as long as the forest dwellers have no sense of belonging to the forest, they cannot be persuaded to become involved in maintaining the ecological balance.

The experience of DGSS makes it clear that ecological balance and ecosystem cannot be maintained without the active participation of local people. Thus the concerned forest department in the dam affected areas must formulate their policies by keeping harmony with the local population. The forests must be protected because land-slides and floods are such calamities, whose destructive effects can be seen immediately but deforestation has some significant long term and disastrous consequences. They are:

3. Loss of Wildlife : The massive deforestation will make thousands of animals as homeless. With a few exceptions, many wild population of species and their habitats have diminished in size from just a few decades ago. Indeed, some important wild populations which have sustained us for generations such as fisheries - have collapsed and hundreds of animals species are in danger of extinction. The rapid increase in consumption and big projects of development are resulting into the increase in felling of trees and

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complete destruction of forests. Forests are must for wild life. Approximately 200 of the 4000-lingers surviving in India today are found in the eastern district of the Narmada catchment. The presence of such a large number of tigers is an indication of the fact that the forest area is still rich in all respects because the tiger can survive only where there is a large variety of deer and harbinores available to prey upon. Wild buffalo, Indian bison, black buck (Antelope) fowl, hill birds constitute the natural ecological system of the basin, which is rare elsewhere in the world.

"With the forests, will disappear hundreds of species of flora and fauna, wildlife as we call it. While the unplanned resettlement of the human population is brutal enough, the manner in which the project authorities plan to deal with the defenseless, wildlife is so inhuman that it makes a mockery of whatever legislation for its protection in post independent India has been placed on the statute books.\textsuperscript{16} Human beings can organize and protest against the construction of dams. They can raise their voice and put pressure on the government to change its policies, but the animals cannot do anything with the destruction of forests on large scale, there are no forest corridors left, from where the animals can cross over into other forests. In due course of time, animals and plants evolve to cope with specific surroundings. Their numbers decline when their source of food is damaged, when their

\textsuperscript{16} Alvares (C), Billorey (R) Op Cit. p. 29.
migratory routes are disrupted or their style of living is disturbed. In ancient times, these animals suffered through hunting, now a days the threat comes more often simply from loss of habitat. Human beings chow down the forests or tarmac over the land where these species generally live. This issue has become globalized and has become an issue of concern at the international level.

4. Soil Erosion: Land is a commodity, for the quality of arable and grazing land can be maintained only by careful use. Population pressures can result in an extended period of over-use. By over use, we mean not only an unsustainable shortening of fallow periods, but also deforestation, and the cultivation and grazing of marginal lands. This causes the quality of land to deteriorate, until it eventually becomes a waste land.17

The erosion of productive soil by wind and water is a perpetual process that has changed the face of the earth over the centuries. At a natural pace, soil erosion would have eventually caused problems in certain areas for example, along the banks of streams and rivers- but humans have accelerated the rate of soil erosion through excessive use of land.18

Soil erosion robs the land of nutrients and it degrades physical properties of the soil, such as its ability to absorb water. Erosion also

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increases the costs of food production. When farmers lose top soil, they may increase land productivity by substituting energy in the form of fertilizer or through irrigation to offset the soils declining water absorptive capacity. Farmers losing topsoil may experience either a decline in their land's productivity or a rise in the costs. Another ill-effect of loess soil erosion is that in order to increase the productivity of land, the farmers use highly chemical fertilizers and pesticides to protect the crops from insects, it can sometime lead to droughts, diseases and water contamination. The construction of dams on Bhagirathi and Narmada will result in rich topsoil being washed away into rivers and the soil will get deposited within the reservoirs of these dams, which will in turn reduce the storage capacity and life of the dam.

"Erosion from degraded forest lands in the catchment will reduce the useful life of the dam through accelerated siltation whose delta-effect will entail backwater rise and inundation of additional areas."19

"The crops which feed us, or the animals we husband, all require soils, soils are not rocks which can be mined but are, in a sense a renewable resources as long as they are nurtured and managed properly. Just as plants need soil to grow, soil fertility is a function of its organic matter, micro and macro nutrients, and the crops cultivated. Without soil, life as we know it would not exist. In fact, a decline in soil fertility and soil degradation has

19 Ibid, p. 532.
been responsible for the fall of entire civilizations and cultures. Thus soil erosion is the greatest environmental challenge facing land today and the concern shall be on how to stop the problems of soil erosion and degradation.

5. Dam Safety and Fear of Earthquake: In Indian context river valley projects signify water conservation, agriculture, power generation, flood control and development of entire gamut of society and the region, but when the issue of safety of dam becomes controversial, the situation becomes grim. Narmada basis is classified as a zone of moderate seismicity with frequent occurrence of earthquakes. During the last two centuries nearly 30 earthquakes have occurred in the area the largest one being the Satpura earthquake of 1938, of magnitude 6.3. Apart from the Narmada reservoirs being in a moderately seismic zone, there are other factors indicating a strong possibility of the occurrence of RIS of high magnitude in the area. These are:

1. The area is known to have faults and fractures for perlocation.

2. Both the Narmada Sagar and Sardar Sarovar are large in size. The height of the former is 91.4 metres and the latter 155 metres.

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20 Anine, Grapton, Op Cit. p. 4.
21 Alvares (C) Op Cit. p. 36
3. The geotectonics and hydrogeology of the basin is similar to that of the west coastal margin, where RIS cases of high magnitude have occurred as for instance at Koyna.

In the case of Tehri Dam as regard to the impact of earthquake there are two distinct issues: (1) The magnitude of severest possible earthquake can occur during the life of dam at any time (2) The hazards, which can be posed to the life and property of human beings and animals. It is the expert opinion of Dr. V.K. Gaur, Secretary, Department of Ocean Development, Government of India and Dr. Harsh Gupta, Vice Chancellor, Coachin University that the Tehri Site lies in a unique region of high seismic potential because:

1. Over thrashing of the entire lesser Himalayan belt downwards along the main boundary fault is the most dominant mode of continental convergence in the Himalayas capable of producing a major earthquake every 100 to 300 years or so.

2. The dam site lies in a segment of the place boundary which appears to be a "SEISMIC GAP" east of the muso - seismal zone of the 1905 Kangra earthquake, which has not been ruptured by a major earthquakes for a long time. Since earthquakes of magnitude less than 8.0 do not relax sufficient strain, it is almost certain that, within the proposed life of dam.
the area would get at least one earthquake of magnitude of 8.0 and above.\textsuperscript{22}

These kind of earthquakes to be occurred in future in Narmada valley and Himalaya region would cause unprecedented loss of life and property. If these dams would collapse it would cause a flood wave of water which would wipe out many regions adjacent to dam sites and would wash away most of the settlements around these regions. The velocity of flood wave can be so high, that there will be no time to warn the people living in those areas and therefore all of them living in those towns and villages would completely perish.

\textbf{Siltation Problem}

It is serious problem in the sense that deforestation has already led to soil erosion, and the soil has got deposited in the reservoirs of dams. There are fears of a drastic foreshortening of the life of the dam because of this deposition of soil. The streams flowing into these reservoirs bring with themselves a high load of sediments from the catchment areas. The life of any reservoir depends on the rate of silt-in flow and its dead storage capacity, but the increased amount of siltation will be beyond the capacity of reservoir.

\textsuperscript{22} Boluguna (S.L): Impact Assessment of Tehri Dam, p. 172.
Mass wasting, deforestation, over grazing, diversion of marginal lands for agriculture, road construction and mining activities are among the main causes of erosion in the Himalayas. The flats or benches along the river valleys, and certain poorly-made terraces are unconsolidated and prove to erosion. All these together are powerful agents of siltation. The storage of Tehri reservoir was calculated by the project authorities and project was cleared, but it is very probable that the actual silt load can be much higher than the assumed one because, natural change can lead to larger erosion of soil, for example. Due to heavy load of accumulation of snow mountains of Himalayas, the movement of glaciers can be effected, as the melting of ice plays an important role in the movement of glaciers. The increased movement of glaciers will double the amount of silt in the reservoirs.

**Waterlogging and Salinity**

The large-scale irrigation schemes generally do not have effective drainage system. The surplus water do not pass and accumulates eventually and makes it way to the surface leaving behind salt contents. Millions of hectares of land have been wasted due to this problem and millions hectares of land have become water logged and is threatened by salinity.

"It is being grudgingly admitted today that the rich alluvial plains of Punjab and Haryana suffer seriously from desertification through water logging and salinisation induced by excessive irrigation water - a quite
heavy, but undisclosed price to pay for the Green Revolution. There is little doubt that a considerable area in the command of the Narmada Sager Dam will be affected by water logging and the resultant salinity. A study by the Indian Institute of science, Bangalore, concludes that at least 1 lakh hectares in the area to be irrigated by the Narmada Sagar and Omkareshwar projects will be affected by severe waterlogging. The consequent degradation of the soil will gravely effect productivity.\(^{23}\)

**Dam Diseases**

A number of health hazards are associated with large irrigation projects i.e. construction of dams. The authorities have not paid any attention towards health problem and have only calculated the cost-benefit figures. The introduction of irrigation and existence of water-bodies spread waterborne diseases. The M.S. University conducted a health survey in Narmada Valley and found scabies and skin diseases increasing among the tribal people. There are some other diseases i.e., malaria, goiter, cholera, viral encephalitis and gastroenteritis may receive a spurt in these areas.

According to India's sixth plan document itself; studies have shown that the construction of large reservoirs can result in the elevation of subsoil water in the vicinity, with consequent changes in the levels of fluoride, calcium trace metals, etc. in soil sediments. Thus in turn results in the

\(^{23}\) Billory, Alvares, Op Cit., p. 52.
emergence of diseases, such as fluorosis, in people who are forced to use the contaminated water. For instance, the National Institute of Nutrition in Hyderabad has conclusively revealed the seriousness of fluorosis in areas adjacent to the Narmada Sagar Dam. Skin infection, trachoma, guinea-worm and schitosomiasis are other diseases transmitted by water. The price for the lack of recognition and control of these environment related diseases is paid, not only in terms of human health, but also in terms of the costs of pest control and medical care.

The IRM quoted a report by N.L. Kalr criticising aspects of health planning. Under the Sardar Sarovar Project, in particular, he cited the so-called dyke-villages by the dam as a "death trap for malaria" and said this was liable to lead to Japanese encephalitis. Canal and drainage works with borrowing of earth from deepened village tanks amounted to "taking malaria to the doorsteps of villages".24

Despite this, no measures for disease prevention have been included in the agenda of Narmada and Tehri projects. The above discussion can further be supported by following statement which was published in India's Environment Report 1982.

"Another harmful impact of dam building on people is the increase of diseases. The construction of large reservoirs can elevate the sub-soil water

24 Verghese, Op Cit., p. 199.
in the vicinity with consequent changes in the levels of calcium and trace metals. This changes the nature of fluorosis, a crippling bone disease, in areas where it is already prevalent. Irrigation reservoirs generally cover a large area with shallow - weed infested edges. The latter provide breeding grounds for disease carrying mosquitoes. Malaria occurs commonly among construction labourers, and among the local population later, unless special precautions are taken, The Raichur district of Karnataka state has become highly endemic for malaria after Tungabhadr 's damning and canal network. development. "Thus, this is the problems which needs special attention, as it can result in loss of human life.

Cultural and Religious Impacts

River systems have been the birthplace of civilisation all over the world. They are woven into the social and economic fabric of society and penetrate deep into the psyche of the people living around them. Nowhere is this more evident than in India, where the Ganga, Indus, Narmada and other big rivers possess a cultural identity transmitted down the ages through our sacred literature the Puranas and the vedas, as well as through popular myths and legends.

The Legend

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25 Dams : India's Environment Report, 1982, Ch-4, p. 64.
The ethos of the Narmada as the most sacred of rivers stems from several legends and cultural practices which reflect the many forms of the river and various roles that it plays. The legend who falls in love, with sonbhadra and sends an emissary, Johilla to convey her feelings to her lover. Johilla however herself falls in love with Sonbhadra. Narmada then in anguish throws herself from the cliffs and flees westward to drown her misery to the gulf of Khambat. 26 Another story tells of the bashful Narmada who was so alarmed by the amorous attentions of her lover that she slipped through his fingers in a thousand steams thus remaining forever a virgin. Thus people of this area regard Narmada as a sacred river and thousands of devotees visit it and worship at various shrines which are the venue of important fairs and festivals and circumbulate the river. The pilgrims completes the parikrama of river and through this, they trace the progress of the material and spiritual history of mankind beginning with the remains of pre and proto civilization. But with the construction of dams, the parikarama route is being redrawn as portions of existing route will undergo submergence. This will in turn, affect the religious sentiments of people. Secondly, the Narmada basin has owning to its history, a wide variety of people. Some are Gujaratis, some Sindhis, Marathis, Marwaris, Tribals and, some are urdu speaking. In some places the land owning class is Hindi speaking and in some places the Gujaratis are the land owners. In urban

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areas, the Urdu speaking community is in majority, they carry on trade and miscellaneous occupations. With displacement from their traditional locations they will be replaced at a totally new place and surrounding. It will take a long time for them to get adjusted to the new location and atmosphere. The governments of Gujarat and Madhya Pradesh are thinking of satisfying the short term gains by providing them cash compensation and by allotting land in place of land, but they are avoiding the emotional and cultural attachment of people to their traditional set up and society. They neglect the fact that almost 2,00,000 less privileged tribals may be permanently consigned to an inhospitable and alien relocation site devoid of a forest or any other familiar dependence base for economic survival.

Same is the case of Tehri Dam, Aggressive Development policy is creating the crisis of survival both for nature and human beings in Himalayas. This great mountain touches the boundaries of many countries and controls the climate of a large region. Besides material prosperity, Himalaya is a symbol of cultural inspiration and emotional integration. For mankind Himalaya has been the source of spiritual inspiration and peace”. Ganga is not an ordinary river for Indians, she is a diety and has given life to our culture. The Ganga binds the whole country into one unit. The river remains people of the high ideals of penance and the selfless service with which the story of its origin is connected. No river evokes such feelings in the human mind as the Ganga does. She is being worshipped and loved by
the Hindus as well as non-hindus, the religious as well as non-religious people for one reason or the other. "If Himalaya is a yogi steeped in meditation, Ganga, rising from his heart is the culmination of that meditation. She is a blessing for all good and bad. Flowing through the plains she gives India both physical and spiritual nourishment. She is the bridge between heaven and earth".

The Tehri Dam will destroy forever the rich and beautiful Bhagirathi valley i.e. - a cradle of Garwali civilization the impoundment of the living waters by obstructing its flow, will kill the river. The Gangajal will lose its purity. The destruction of Ganga will not only deeply scar the sensitivities of our people, but will hurt their emotional feelings. Some people may call it superstition, but the reverence of people for rivers and mountains can no more be treated as superstitions because in any people centred development projects, it is the duty of the perceptions of people. Bahuguna quotes a contemporary revolutionary from Bengal.

Ganga is not a river, she is our life, Tampering with the Ganga is piercing our heart". With the construction, all the places connected with the great vedantic saint, Swami Ramatirath Kutiya, the Bamrogi cave, the Malideval Kutiya and Simlash Koti will be submerged, which are of utmost religious significance for the people. This loss can never be filled as our

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children will be deprived of the teachings and inspiration of great people like Swami Ramatirth. The project will also create cultural and regional imbalance. The villagers will be displaced and will be rehabilitated to a completely new surrounding. They will never get the opportunity to regreen the noted slopes, which is the only way to alleviate their poverty. This disruption in this inter-related system will lead to a direct impact on the food and water system of the people. Landslides and floods are such calamities, whose distinctive effects can be seen immediately, but displacement and uprooting of masses from their homes has some significant long term disastrous consequences, which need special attention.

For the majority of Indians, displaced and jobless development posed an alarming threat from the very beginning. The millions soon discovered as how development did little to bring them justice and well-being. On the other hand it did too much to undermine their centuries old diversified regime of subsistence. In the early 70s, these experiences started to generate new forms of social struggle. Gradually, the term 'popular participation' became the slogan of Social movement struggling for a part in making the decisions affecting the lives of those hitherto excluded from them. Some of these movements started using Gandhian tactics of non-violence and Satyagraha to solve the problems.
These movements began to redefine the meaning of development. The Protestants find nothing good in the Narmada Valley and Tehri Dam projects. Both projects are seen as mistaken and unworkable in the beginning, the demands of these movements were related with better terms of Rehabilitation and Resettlement, but as soon as they start progressing this issue was dropped and they turn their attention towards the violation of the forest conservation Act, to lack of information about disastrous environmental costs. Now, they have started questioning the benefits and compare the benefits with the worst impacts of the projects. The movements are now concerned with the rights and culture of tribal and local communities residing in the affected areas. The denunciation of the present national development strategy and the demand for a new social and political paradigm was always there in their agendas, but now they have made their voice loud and clear. The false promises made by the concerned authorities no longer satisfy the growing demands of movements. Their motto is to save the future as one has not only to live for the day. The people behind the construction of dams have observed that considerable progress had been made in achieving resettlement policies and these can be very much favourable to the affected people. They opined that data collection and collation are well advanced and very few projects in the other developing countries have gathered data like this. The movements aim at a new
development path to replace the existing one. There is a growing debate among the pro-dam lobby and the activists of the movements.

**Looking for Sustainability**

Economists to against Environmentalists? Representatives of movements and state and Central Government have always criticized each other stating in their respective public stands that both sides have indulged in distortion and exaggeration. Officials and Economists claimed that the environmentalists are over - emphasizing the negative externalities of the projects - particularly the environmental and social impacts. There is disagreement among the supporters and activists of the movements on some occasions of taking important decisions and the decisions are not taken with the full consent of the supporters.

For the pro-dam lobby, sustainable progress or development means large scale ambitious centralized schemes, capable of meeting the rapidly increasing needs for food, water and energy of an economic that must - grow if India is to become a developed country. Such schemes can only be initiated financed and managed by the state, conceived as the guardian of the interests of people.

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28 Esteva (G) and Prakash (M.S); Re-Routing and Re-Rooting Grassroots Initiatives: Escaping the Impass of Sustainable Development for the Narmada, Lokayan,. May-Aug 1991, p. 117.
The Tehri Dam complex is intended to bring an additional 270,000 ha under irrigation and stabilize existing irrigation over 600,000 ha in the Ganga, Yamuna doab. The expected benefits in terms of 5071 m units of energy, irrigation, pisciculture tourism, 300 cusses of drinking water supply to Delhi, employment and income generation were considerable.\(^{29}\) The Sardar Sarovar Project will have an installed hydro capacity of 1450 MW and will provide drinking water to 131 urban centres and 4,720 villages including all of Saurashtra and Kachch, drought proof a large part of Gujarat, provide flood protection to a population of 750,000 in 210 villages and to Bharuch city and stimulate afforestation, tree plantation and aquaculture.\(^{30}\)

The critics have opposed this benefit analysis of government by saying that the benefits have been exaggerated and the costs concealed and that the ultimate outcome will be a human, ecological and financial disaster. For the dam’s critics, far from being the guardian of its oppressed, underprivileged citizens, the Indian state remains instead the guarantor and puppet of national and transnational capital. Large projects benefits principally those who already enjoy more than their fair share of privileges while further annihilating those currently underprivileged. For the critics, the

\(^{29}\) Paranjpye (V) Evaluating the Tehri Dam, INTACH, Series No. 1 studies in Ecology and Sustainable Development, New Delhi, June 1988.

Tehir Project and Narmada Project's scale and centralization means less control by the 'have nots' and more corruption by the 'haves'.  

For more than 20 years in most areas there has been no sign of development, no roads, no schools, no wells, no medical help. For 20 years it has borne the Stigma 'slated for submergence so the areas ready for submergence have been isolated from the rest of society (no marriage proposals, no land transactions). They are a bit like the Hibakushas in Japan (the victims of the bombing in Hiroshima and Nagasaki and their descendents. The "fruits of the dams" when they finally come brought only horror. Roads brought surveyors, surveyors brought trucks, trucks brought policemen. Policemen brought bullets and beatings and rape and arrest and in one case, murder. The only genuine 'fruit' of modern development that reached them, reached them inadvertently - the right to raise their voices, the right to be heard. The planners hold the view that "of course there are costs in building large dams; human, ecological and financial. But these can be more than compensated. Those offered generous R & R packages which have seen steady improvement and more rigorous implementation over time. There is little doubt that their condition will in due course, be distinctly superior in relation to the living standards and opportunities they enjoyed earlier likewise, the ecological impacts are greatly outweighed by project

31 Lokayan: Op Cit, p. 117.
benefits in the absence of which environmental degradation, migration and distress would take a further toll. The idea that events are standing still and that delays occasioned by further 'reviews' or yet more surveys and studies do not matter and will improve the project is quite mistaken. Reviews and studies to the extent necessary can proceed alongside construction and project implementation. Every delay, apart from adding to costs, entails further prolongation of human misery and more environmental degradation and retards national development. The R & R package includes cash compensation and land for land scheme".  

This is the opinion of supporters of big projects, for the dam's critics, instead if being the guardian of its oppressed, under-privileged citizens, the Indian state has become a puppet of national and transnational capital. Big projects benefit principally those who already enjoy more than their fair share of privileges and worsen the condition of underprivileged further. The critics of big projects the scale and centralization of projects mean less control by the "have-nots" and more occupation by the "haves". They have the benefit cost ratio as projected by dam supporters on the following around. For about 400 MW of power from the Sardar Sarovar, Narmada Sagar and for about 2400 MW of power from Tehri dam and about 5071 m units of irrigated files, the Indian people are being asked to displace a

33 Verghese, Op Cit., p., 240
population of over 2,09500 including tribals and backward people, along with a brutal and barbarous onslaught on a vast wildlife population, and to encourage the destruction of more than 5,7926 hectares of forest and agricultural lands. The dams also include danger of earthquakes increase in siltation rate, sedimentation and soil erosion which will increase the risk of water born diseases and reduce the life of the dams. "Merits and demerits apart, the projects on the Narmada and Tehri revealed certain fatal weaknesses in the tough processes of our politicians, planners, administrators, environmentalists and technocrats. We all suffer from a tunnel vision. We make our mind about a particular project and then we wear blinkers which exclude all other alternatives. For people, these projects promise of bringing water to parched lands through irrigation and fulfilling the water needs of town and cities which are at present starved of water." \[34\]

The above mentioned facts can be further gathered from following statement.

In this century India ranks among the more important dam building nations in the world. Soon after independence, multi purpose river valley projects and others, dam construction came to be regarded as essential for meeting the country's critical requirements for irrigation for agriculture electricity for industries and flood control. Dam building has been pursued at an accelerating pace in the last three decades. Most of the construction work:

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34 Buch (M.N) "And all the Boards Shrink" Lokayan, May-Aug 1991, p. 50
on dams in India is done by human labour. These dams are, therefore, standing testimonials to human toil and engineering skills. The forty five years from 1954 to 1999, the installed hydroelectric energy generating capacity rose twenty times. The irrigation potential created by major and medium size project are beyond any estimate. Despite these achievements, the expected benefits in terms of electricity and irrigation have fallen short of the planned targets. The environmental degradation, deforestation in catchment areas, displacement of people and destruction of wild life, have led to conclude that these modern temples have become truly staggered.

Alternatives

Now the question arises, as what are the alternatives. The Dams have already started, lakhs of rupees have already spent, Hundreds of people have already been displaced. In these circumstances; what can be done to relieve the sufferings of the people and to make best use of the dam? The various hazards and harmful environmental impacts of dams do not imply to recommend a ban on all dam projects. The impacts only try to draw alternation of authorities to the environmental concerns that have been ignored so far. It is true that dams are essential for meeting the needs of irrigation and power, but development without destruction is very much possible. The authorities must include this principle in the planning and design of such projects. Secondly, as Dr. Bhumbla pointed out, "The water should not be released in the Canals during the rains but only in summer and
provide only three irrigation's. The canals can be taken further down, so that they can irrigate more areas with one or two irrigations.\(^{35}\)

Another alternative is that the planners can divert their attention towards constructing smaller, lower and more economical dams. This would reduce the area of submergence and bring about a drastic change in figure of displacement and deforestation. Of course there will be loss of power generation, but this would have to be set up against the benefits increasing from reduction of submergence and deforestation. In this context natural gas can be used to generate power for pumping requirements and for industrial purpose. Solar energy can be utilised maximum to supply the power requirements of individual villages. Baba Amte also proposed for construction of small dams and watershed management. In 1981, the TVSS proposed that the Maneri Bhati hydel project's tail race waters could be diverted through a counter channel and the head difference be utilised at Tehri to generate power. Similarly, the tail race waters of a low dam at Tehri could be carried in an open channel to Devprayag and the drop utilised for power generation. It was admitted the power so generated would be less than that proposed under the Tehri High Dam Project, but it could steady power which might be augmented by similar systems in the Garhwal Himalaya as for ex, on the Pindar river.

\(^{35}\) Monte (D.D) Aggarwal (A) Op Cit., p. 33.
ACHIEVEMENTS AND RESULTS

All the movement discussed before have not been in vain. Over a period of time, they have not only made the general public more aware of environmental issues, but have also achieved some concrete results, which are discussed below. The first great achievement on part of chipko was that on 24th April 1973, the threat of resorting to chipko helped in saving of 32 Ash and Walnut trees at Mandal region. In May 1977, the leader Sarala devi along with the Sarvodaya Mandal prepared a resolution calling for an end to the commercial felling of green trees. The resolution was sent to then Prime Minister, Morarji Desai, he was quite sympathetic towards the delegates and asked the state government to change its policies towards the system. But the exploitation continued, the activists and villagers decided to remove the iron blades inserted into the trees, the women took the lead role. The forest officials reached there to inspect the situation and remarked that the villagers are doing the job which should have done by the forest department itself. All these activities persuaded the UP government to accept the reports of the Reni Investigation Committee. The government passed the order in favour of the activists and tree felling in the 1200 sq km of the catchment area of the Alakananda and its tributaries was banned for ten years. This order saved 2451 trees of the Reni forest and the ecologically sensitive catchment area was finally freed from planned development.
"Nineteen Seventy Seven also witnessed the forty second amendment to the Indian Constitution, which for the first time, included the enactment of provisions relating to the environment. Two articles imposed certain obligations on the state and on citizens with regard to environmental protection. Art H8A stipulated that "The state shall endeavour to protect and improve the environment and safeguard the forests and wild - life of the country. Art 51A (g) laid down that it shall be the duty of every citizen of India to protect the natural environment.36

The BBC in one its broadcasts described chipko as a movement that had generated a popular awareness with regard to the presentation of forest that the Indian government had failed in doing in many years. As a result of the chipko struggle, the government replaced the contractor system and formed U.P Forest Department Corporation and the exaction was encouraged through local cooperatives. In 1981, as a response to Sunder Lal Bahuguna's indefinite fast, the government constituted an eight member expert committee to prepare a comprehensive report on the Himalayan forest policy. The government later put a fifteen years moratorium on commercial felling in the Uttarakhand Himalayas. It is said that the "Chipko movement is the foundation event of the Indian environmental movement having the

same status here as Rachel Carson's Silent Spring has for the western environmental movement.

Gall Omvedt calls Chipko as the "Third World's first Grass root ecological movement. It followed the ancient traditional form of protests, and non-violent non-cooperation method. Women took part in large scale and contributed to its success. This movement succeeded in slowing down the pace of commercial forestry and also formed a basis for India's forest policy. The movement has succeeded in resisting the felling of trees for ten years and in some parts the felling of trees was suspended. The biggest achievement according to Bahuguna is enlightenment of the laymen regarding the protection of trees and the nature.

The Chipko activists and leaders drew their attention to other areas of ecological destruction. Bahuguna led a 300 day march from Kashmir to Kohima, across the hills of U.P, West Bengal, Himachal Pradesh, Arunachal Pradesh, Assam, Nagaland, Sikkim, Bhutan and Nepal in 1982. The march was aimed at creating public awareness and at the end of journey, the Governor, facilitated the marchers at a reception. The chipko movement was originated in Uttarakhand and was a regional movement, but received national recognition as it was not confined to the problems of one region. It raised the fundamental issue of man's relationship with his environment.

38 Bandopadhyay (J) Op Cit., p.
succeeded in creating awareness in many parts of the country viz, Karnataka, Himachal Pradesh, Rajasthan and Bihar. The present Appiko movement presently going on in western ghats is a strong movement following the guidelines of chipko. Although every environmental movement has its own issues and programmes, but it is an irrefutable fact that almost all of them derived inspiration from the success of chipko. The chipko which began as a local movement gained international recognition also. Environmental strategy of chipko finds new application in people's movements in several European countries. The time magazine mentioned in one of its feature about Europe's dying forests, stated chipko in terms of the success of its reforestation campaigns. The World Bank and Asian Bank helped the movement through financial assistance. In conclusion, one can state that perhaps there is no chipko movement in the garhwal Himalayas, but it is still alive in the form of appiko movement in Southern parts of India. The term chipko will always remain as an Umbrella to take in any non-violent struggle against the rain of violence and exploitation. The movement has attempted to stimulate awareness in people about the nature of exploitation to which their forests and therefore their lives were exposed.

After chipko, another movement with a new name as "Save Himalaya Movement" began in Garhwal Himalayas in 1980s. It was started against the decision of government to construct dam on the river Ganga. The movement is still going on and in last twenty years, it has succeeded to some
extent in educating the people about their rights and has been given attention by the planners from time to time. The first step in this direction was taken by the Indira Gandhi government in 1980. Mrs. Gandhi discussed the damaging environmental impacts of the dam with the proponents and opponents and realised that there is great local distress and a feeling that contractors and other such groups will be the main gainers and hence ordered in March, for a review of the projects such as silent valley in Kerala, Tehri in U.P from the environmental angle. "The working Group Committee was to be headed by S.K. Roy. The report was submitted in August 1986 and the chairman's concern revolved around the instability of the hillsides, the extensive deforestation and the location of Tehri dam in a highly sensitive seismic zone. Though the Vice Chancellor of Roorkie university and some others opposed the report of chairman, but the Union Ministry recommended for abandoning the Tehri Project for some time.39

The Tehri Virodhi Sangharsh Samiti suggested that the water from a low dam at Tehri can be diverted through an open channel, this will prelude the need for inundating vast areas and will bring good results, secondly the construction of dam at Dobata on the Bhagirathi will save the Tehri town from submergence as the storage would be much less as the Bhilangana would be excluded.

39 Das (Kumar B) Op Cit., p. 92.
These alternatives were considered at the instance of Ministry of Irrigation in 1988 and the Bhumbla Committee was constituted. In a detailed discussion, B.K. Roy Burman, a member of the committee expressed his indignation at the fact that the Project authorities tried to mislead the committee by taking them round some "Showpiece villages where the dam oustees were resulted but the committee members paid unscheduled visits to some other villages, they received a bleak picture of resettlement from the oustees Mr. Burman, who is fully conversant with the developments of the project feels that in the absence of adequate data, it is not possible to take a stand on the controversial dam issue. He endorses the Bhumbla committee report, according to which.  

"No study has been done on the ecological impact of all these projects on the river on its water quality, its flora and fauna and its ability to survive as an ecosystem".

Bahuguna always emphasised the role of Himalayan forests in maintaining the supply of pure water, soil and air. The United Nations Commission on sustainable development in its third annual session's report, April 1995 admitted that the mountains are the predominant and most dependable source of fresh water presently used by humanity. In Asia, about one billion people depend on fresh water of Himalaya. In this way

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save Himalaya movement received international recognition and was considered as an important step in the direction of saving the natural resources. In April 1986, the Ministry of Environment and Forests came up with a paper on the Environmental Aspects of the Narmada Sagar and Sardar Sarovar Multi purpose Projects. This argued that it would take another two to three years to complete environmental impact studies for these two projects, that the environmental impacts of the NSP (Narmada Sarovar Project) were likely to be more severe than those of the SSP (Sardar Sarovar Project), only a third of the lands required for R & had been identified and their land capability remained unsurveyed; and that considerable submergence and displacement could be avoided by a modest reduction in the height of the NSP without affecting irrigation for the SSP if the minimum draw down level of the latter were correspondingly reduced.  

Another Delhi - based institution, the Multi Action Research Group (MARG) surveyed the submergence villages in Barwani Tehsil, Khargone district M.P. It found the level of information among the people "lamentably low" and noted poor interaction between Project Authorities and the affected population. Initial Project Surveys had been conducted allegedly without proper notices that people knew of or understood, leaving behind stone markets of submergence levels that had aroused deep anxieties and

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uncertainties. MARG found some villagers ill informed, others misinformed. They were not fully aware of their rights if they opted to go to Gujarat and even less aware of their rights to be rehabilitated in M.P. itself. Six forest villages had been totally omitted from the rehabilitation lists though marked in the submergence area maps. Meanwhile there was a feeling that even existing civil services were being withdrawn from these "doomed" villages.42

Then on 8 Dec. 1991, the Narmada Bachao Andolan received the right Livelihood Award, popularly known as the Alternative Noble Prize. It was a great achievement for the movement. Later, the World Bank set up an Independent Review Committee Under Bradford, Morse for the Sardar Sarovar Project. The report carries a detailed documentation of the Government's failure to provide adequate rehabilitation facilities and environmental safeguards. This report gave a boost to the anti-dam movement.

The R & R package in Maharashtra included the forest villages in the list of areas to be acquired for rehabilitation of displaced people. Generally, the Scattered islands in the resentment among the activists of Narmada Bachao Andolan. The NBA leaders kept in demanding the release of degraded forests but the Ministry of Environment and Forests refused to

relent. The activists opened that these forests will provide some relief to people, as forest tribal link is well accepted. Medha patkar attended a seminar in Delhi in April 1991 and she spoke against the breach of promise by Environmental Defence Fund of the U.S. cited this as a breach of agreement at a US Congressional hearing on the Narmada Projects. The anti-dam critics in India and abroad claimed that rehabilitation was not possible in Maharashtra without the release of Taloda forest land. Finally the government had to bend and the Ministry of Environmental and Forests released 2,700 ha of denuded forests land in Taloda.

The Sangharsh Yatra in Dec. 1990 and the indefinite fast undertaken by Medha Patkar and six others, persuaded the World Bank to intervene. The World Bank President, Babar Conabale decided to appoint an independent mission to review the SSP.

During the Manibeli Satyagraha the NBA filed a suit in the Dhule Court dismissed the petition and stated in its findings that the Narmada Bachao Orgnisaion had resorted to subterfuge to claim a reprise national status in this matter which it simply did not possess. The NBA did not like this decision and decided to continue its struggle. It again complained for police atrocities and repression on people of manibeli. In view of allegations of police repression, the Union Water Resource Ministry appointed a committee to find out the facts and to inquire into event which led to
atrocities in manibeli between 26 March and 4th April 1992. This team comprised members from three agencies (1) TISS Bombay (2) The centre for Social Studies Surat and (3) HSG University Sagar. The reports of Committee did not favour the demands of NBA, but it was an achievement for the andolan because the authorities were atleast reacting to its petitions and pleas. The work on dam did not stop and by 1993, the dam had risen to a height of 61 m at its lowest point in the middle. Now it was clear that parts of Manibeli would submerge in few days the families of this area took a pledge alongwith NBA activists that they will prefer to drown rather than move. Police arrested hundreds of people and Medha Patkar and some tribals started hunger strike in Bombay. Baba Amte also staged a fast and the government finally announced the formation of an Eminent Persons Group in Aug 1993. The Group was asked to submit its report within four months.

Another great achievement of NBA since 1985 was World Bank's withdrawal from SSP. Although it appears to be a small thing in the context of World Bank's role at the national level. NBA's fight is important in demonstrating that people can get together and hold the Bank answerable for its policies whether the World Bank comes in on its own or is invited by the government, either way it should be held answerable for its policies and should be able to justify its involvement in terms of people's priorities,
requirements and conditions. In short, the World Bank shall itself carry out a number of rigorous studies before sanctioning loans.

The NBA activists continued their struggle and they achieved certain objectives from time to time. Although the achievements were short lived, but it gave their movement a national as well as international recognition. The recent development in this was in year 1998.

The six activists went on indefinite fast on 11 Jan and thousand of villagers seized the dam site alongwith Alok Agarwal and Seetarambhai. The government paid attention towards it and on Jan 30, 1998 the Deputy Chief Minister of Madhya Pradesh, Mr. Subash Yadav announced the comprehensive review of the dam and suspension of work, till such a review. According to the orders, the review was to be conducted by the Task Force appointed to review the entire Narmada Valley Development Plan.

The activists and village representatives participated in the two meetings of the task the work again started, but this time at a low pace and due to the protests of people, the work on the dam slowed down to a considerable extent and hardly 25% of the proposed work could be completed before the onset of monsoon. In April-May of the same year, the police resorted to brutal lathi charges and atrocities, this incident gained publicity and in the National Commission on women took a serious note of the incident and the

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National Human Rights Commission also sent an investigating team to the affected areas in March 1998.

The NCW report came heavily down on the attitude of the administration and the government and recommended that all the work regarding the dam be stalled. It warned against the use of police for the protection of private company, against the common people. It wanted a judicial inquiry into the incidents.

Not only this, the social workers and activists of other movements and organizations the Kisan Majdoor Shakti Sangathan, Women's organizations from Indore, Jabalpur, and Madhaya Pradesh gathered in the Narmada Valley to express their solidarity with NBA. These organizations appealed to the Chief Minister of Madhya Pradesh, Mr. Digvijay Singh to stop the construction of dam and to have a comprehensive review. The Chief Minister called for a meeting in June 97, in which the dam builder and bureaucrats and social activists participated. In the subsequent meetings, the Chief Minister announced the extension of Task Force for the review of dam. The Narmada movement has become the celebrated symbol of the 'green cause'. This anti dam campaign has come to symbolise the struggle to alter the policy of India's development.

"A key to the local success of the the Narmada Bachao Andolan has been its ability to transcend political affiliations and mobilise a cross -
section of the land owing community. Cultural and religious factors are also important in the resistance. The people's attachment to the land and the river does go beyond economic considerations. Indeed, according to an activist, NBA leader Medha Patkar is seen not as a politician but as a goddess.  

The environmental movements have succeeded in gaining national and international recognition, because these movements resist the dams not only as the benefits go to urban middle class and the capitalists but also because embodies development i.e. a process based on values antithetical to adivasi culture.

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