CHAPTER III
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ECOLOGICAL MOVEMENTS: CASE STUDIES OF KHEJARLY VILLAGE
CONFLICT, TEHRI DAM AND NARMADA SAGAR PROJECT.

The appearance of homo sapiens on this earth in the last few millions years marked the beginning of new biological ages of these new creatures who have been able to exercise control over their environment to a great extent for their own benefit. Due to his rationality and intelligence, man was able to use inanimate minerals and materials like stone, water as well as plants and animals to improve the quality of his life. First, he hunted animals in the forest and gathered fruits from the trees for food, built his dwellings out of the timber and mud available from the forest and soil to protect himself from wild animals and the vagaries of nature. Gradually, he had better food to eat, more varieties and better cooking methods due to the discovery of fire, better dwelling places, and clothes not only to protect himself from the nature but also to make himself more presentable and respectable before others.

Man's learning and knowledge also improved and later on, with the invention of written languages, he could record his experiences. All these processes led to the attitudinal change to wards nature and further, man guided by logic had a direct conflict with nature as Johnston put it;
"The first major conflict with the nature in man's path of development was agriculture, it brought man from the forest, placed him in organised communities and made him resort to cutting of trees on a large scale for the raising of crops".

This was a much easier method of growing food because he was not required to wander in the forest for hunting animals or gathering fruits. Agricultural societies also made it possible to domesticate animals for meat, milk, and also for draught situation. He was also more protected from the wild animals because he lived in a group or in a community and the animals did not dare to wander beyond their preserve except at their peril. However, this was a great onslaught on nature because it grows trees and does not like their destruction.

Eventually, after thousand of years, the granaries of Babylonian, Egyptian and Roman Empires were turned into deserts. Man kept on wandering from place to place and cleared new areas from the forest as he had got a taste of agricultural civilisation and was unable to go back to the forest. In this process the deserts were shifted up to China and other ancient civilisations were ruined. Rivers and water sheds were dried up and at the time of rain, brought great flood and havoc to the habitation. It took man many centuries before he could learn the lesson that indis-
the criminate cutting of trees and destruction of nature
brought devastation in its wake and agriculture should be
practised with utmost caution with future perspective in
view. Like the middle-Eastern civilisation of antiquity,
even how, some countries are in the process of desecrating
their landscape to the point of no return. Once enough top
soil washes or blows away the capacity of the land to
support either trees or human beings is permanently stunt-
ed.

European civilisation learn its lesson from the
ancient middle Eastern, Egyptian and Chinese civilisations
and they have retained the forest cover to avoid the calam-
ities which had bedevilled the ancient civilisation. Howev-
er once man goes into conflict with nature, he suffers from
new calamities and new devastation which he is not able to
foresee.

"The western civilisation which had learn
a good lesson from the ancient agricul-
tural civilisations made a similar blun-
der when they resorted to industrial
civilisation".

Once the industrial revolution of the 17th, and
18th centuries took place, man became so enamoured of it
that he started dreaming of plenty and abundance and to
extract huge profits within the shortest possible time with
the help of mechanical energy which was able to produce
thousand times more compared to human and animal power: man
became vain enough not to listen to the voice of wisdom, nature always displays a law of compensation. If you are able to achieve excellence in one field you have to suffer in some other.

Man's exploitation of natural resources led to the modern life style which is lop-sided, based more on greed than on real needs. Because basic needs are extremely simple, only his extravaganza and frivolities are complicated and complex. The intricacies of these complexities got reflected in the man's behavioural pattern in society as well as with nature, as viewed by Lynn Jr;

Industrial production is also destroying the inside ecology of the human being. Man has become very greedy, selfish, always looking for material possession".

Therefore all sorts of moral degradation, collapse of family system, excess of individual liberty, and job dissatisfaction in western world are witnessing serious problems. Hence many highly talented and intelligent youth of the developed countries are dropping out from the capitalist society and looking for some salvation in the spiritual world. It is proved time and again in the oriental philosophy, which gave lessons of frugality and simple living can save the entire planet from destroying the ecology around us. Man should be able to give as much to nature as he takes from it. If he cuts one tree, he should be able to plant five trees to keep the balance in
Thus man's effort at development has brought him in conflict with nature, environment and ecology. Although man is the ultimate product of the natural environment and he should be placed at the focus of all development, but he must not forget that man is also a part of nature and even if he wins in the battle against her, he will find himself on the losing side. Further the present situation reveals the fact that economy oriented man has crossed all his limitations, tortured mother Earth in such a manner that she is not in position to provide same love and affection to the simple and indigenous people of the next generations. The root of the problem lies in the growing violence in the human heart. This is reflected in so many ways—the enormous growth of the armament industry, racial and religious intolerance, social and political strife, unashamed abuse of basic human rights, drug addiction, and lack of concern for the poor, just to name a few. Over 60 years ago, Gandhiji said

"We cannot have an ecological movement designed to prevent violence against nature, unless the principle of non-violence becomes central to the ethos of human culture".

Therefore Mahatama Gandhi's concept of non-violence has to be emphasised in every sphere of life without which how can we learn to live in harmony with the earth. This is the principal challenge facing present
global society.

Infact environmental movements start when an ecological dialogue with nature stops. This dialogue has been stopped because industrialism as an ideology transforms nature from living system into a mine of raw material-dead and inert, a resource which does not rise from itself, but gets value only through industrial exploitation. Thus it is in this response, environment lovers asserted in the form of movement as an ecological unrest in the different parts of the world.

Environmental groups, which subsequently became political parties, where first established in Western Europe in the late 1960s and early 1970s, notably in the federal Republic of Germany. They stood in opposition to the development of nuclear power. This debate appears to have been particularly intense in the Federal Republic of Germany and politically motivated ecologists galvanized this response into political action. Concern in the early 1970s produced the 1972 UN Stockholm conference; in the same year the first green party was established in New Zealand.

The first major green electoral success in the federal Republic occurred in the October 1979 ballot for the Bremen Burger Scharf (Parliament), when the Berman Grune Lite (BGL) took more than five percent of the vote: the minimum required by law for representation in a provincial assembly or the Bundes tag (Federal Assembly). The BGL
campaign against industrial growth and nuclear power and took four seats with 5.1 percent of the votes cast.

"In January 1980, four ecology oriented political grouping in Germany founded a national political party to be known as Die Grunen—the Greens—thus establishing the term in the European political vocabulary."

The party made its presence felt in the March 1980 Baden-Wurttemberg provincial election when it achieved 5.3 percent of votes cast, gaining six seats. In October 1980 the greens achieved only 1.5 percent at the general election but their success was simply delayed until the next election in March 1983, when they won 5.6 percent of votes and gained 27 seats in the Bundestag. They were led by the enigmatic Petra Kelly, who was dropped from her position as spokes woman in April, 1984. At the next general election in January, 1987 their performance was more impressive when they increased their representation to 42 seats with 8.5 percent of votes cast. This gain of 15 seats remains the green's best electoral success in national parliament to date.

The greening of European political life has become equally evident in other countries of Western Europe, with electoral successes in Austria, Italy and Sweden over the past three years. The election in the Austrian province of Vorarlberg in October 1984 saw the greens enter the assem-
bly taking 13 percent of the votes and gaining four seats. The Austrian general election of November 1986 came in the same year as the Chernobyl nuclear disaster in the earst while USSR. Three green groups put up candidates. The Austrian Alternative list, the United Greens of Austria and the citizens Initiative parliament, together they gained 4.82 percent of the vote and took eight seats in the Nationalrat, the Austrian parliament. The groups formally constituted themselves into the grune Alternativen (Green Alternative) in February 1987 but the only deputy from the United Green of Austria declined to join the group. This has barred the deputies from proposing legislation in the Nationalrat, as a minimum of eight members is required.

In Italy the June 1987 general election saw the Green Party take 2.5 percent of the vote and enter the Chamber of Deputies with 13 seats. A similar success occurred in Sweden at the triennial general election for the Riksdag (parliament) in September 1988. The Green Ecology party (miljopartiet de grona) became the first new party to enter the Swedish assembly for 70 years when it polled 5.5 percent of the vote and won 20 seats, at the 1985 election. In 1988 the Green Ecology electoral campaign focused on the pollution of Sweden's forest and lakes and the long-term effects of the Chernobyl disaster.

Thus the Green peace party has taken up environmental issues in such manner that has come to occupy the centre of the political stage.
In Netherlands, where marked differences of opinion over the financing of a costly National Environment plan on pollution led to the collapse of the seven year coalition between the Dutch Christian Democrats and the liberals. The Green left as it is known in the Netherlands, a four-party alliance which strangely omits the actual Green party, built on its strong position in the Euro-election. In gained 6 seats with 4.1 percent of the votes in the September 6 general election. Concern over pollution control now out ranks the traditional political questions of the budget deficit and unemployment and accounts for the green lefts electoral success in the 1989 national poll.

Then came the green belt movement of Kenya, initiated by women in June 1977 on the very occasion of world Environment day. This activity was co-ordinated by National Council of Kenyan women (Mathai 1986). This movement was started under the leadership of Mangari Mathi. About 90 percent of Kenya's population lives in the rural areas while the forest Cover is only 2 percent. They have emphasised the issues like soil erosion, land degradation etc. And planted 920 public green belts. Thus this was basically an ecological unrest against natural resources exploitation and degradation of physiologic land scapes.

The Mexico's environmental movement (MEM) came into being by two groups firstly by urban middle class, secondly by poor people-both urban and rural. The basic concept of Mexican Environmental movement founded in 1982
by Alfonso Cipres Villarreal. They have carried out membership drive and enrolled 52,000 today, Cipres Villarreal say that MEM will become a political party only when it has two million members game cultural and Technical elites also became the members and joined the movement namely Octavio, Paz, Juan Rulfo, Jose Luis Cuevas (all writers) Tomayo and Ignacio Beteta (artists) Norman Barlaug (Agriculture, Scientist, Nobel peace prize winner) MEM'S ideology is radical. Their strategy is to get public support in general and vocal approval from intellectual, Art and Cultural elites. Partido Autonoma Nicionalista (PAN) right wing party interested in MENO while orthodox left parties, are not interested in MEM.

The second group, poor people both urban and rural given the weightage to the sustainable development objectives, carried out by ANADEGES (Analysis Development and Self Management). It is a non-profit organisation which seeks to build bridges with popular organization especially in rural areas, through projects such as - agro forestry and social forestry etc. To Anadeges, there are only two options open to Mexico, first, either to follow the path set by international specialisation in which people lose control over their own lives. Second to seek a more autonomous and less authoritarian kind of development. According to Mexico's Environmental movement strategists the basic needs are best defined by people themselves in the context of their own culture which requires a positive re-assessment of traditional ways of using the environment.
These ideas were supported by internationalist figures like Ivan Illich, Andre Garz, Rudolf Bharo.

Thus these were the major Global environmental movements in General which have come up in the different forms as an ecological unrest at the various places of the world. While in the Indian case, important environmental crusades are, the Chipko movement phase First (Khejarly revolt 1730 A.D.) Chipko movement phase second (U.P. Garhwall and Narmada Bachao Andolan etc. All three would be dealt in detail as the case studies. The other ecological movements also came into lime light e.g. Silent valley, 'Save the Taj' campaign, soil campaign, thal Vaishet campaign, Bedthi campaign, protect Karnataka's commons etc.
LOCATION MAP
CHIPKO MOVEMENT PHASE I
KHEJARLY • VILLAGE REVOLT

RAJASTHAN

JODHPUR

Khejarly Village

100 0 100
KMS
Case Studies

1. Khejarly village revolt. Chipko Andolan Phase First

Khejarly is a name of village, denoting abundance of Khejari tree (prospis cineraria). This village is about 26 k.m. South east of Jodhpur city in Western Rajasthan. According to village Sarpanch, There are 150 families;

"one hundred Vishnoi families, thirty families of Raikas (Rehbaries), twenty five Rajputs out of that seven Champawats and eighteen Khichi families, twenty five Meghwal families, ten Muslim families, eight Brahamin families and two families of Dholy"

The village is said to be three thousand years old. First time came into lime light in 1730 A.D. when Jodhpur state's executioner wanted to cut down the Khejari tree for as a fuel to prepare the material for the construction of place. Villagers revolted, many of them killed. There is controversy regarding Numbers of victims in this crusade. General notion is that 363 people were killed and all of them belonged to Vishnoi community only.
While during the field survey, I have interviewed some of them given different version on this very episode, the number of victims varies from the community of interviewed person like, the village head aged 45 years. To him only 2-3 persons were killed in that incident not more than that, 363 figures are farce.

Other respondent it is very difficult to say about the exact number of victims but there was incident and some people were killed from village, all community's people were there but Vishnois were more than others. Further interesting thing is that female sacrifice version is also farce because there was not even single lady to be sacrificed at that time. All these are latest fabrications. Third respondent aged 80 years says, 

"There was a meeting of 84 villages and they decided to protest, 363 Vishnoi were killed in this incident."

Fourth respondent age 75 years, old in this case fact to him, 363 victims are farce. It is due to political manipulation, the entire show has been managed, 'it is politically motivated'. Other respondent, aged 76 years, pointed out that Vishnois were killed more than other caste people in this incident but he could not say the number of the victims. Women respondent aged 96 years old expressed her self,
"I have heard generally about this incident but I can't tell details".

I went to the Santari (the so called incident place) and met the Pojaries over there. They also repeated the same story but did not give any written evidence. They said our Bhatt, is keeping all records, i.e. name and addresses of 363 victims, Government documents etc. But in reality no written records are available there.

The broad conclusions are: Firstly There was an incident because 90% of Interviewed respondents accepted this. Secondly, there is controversy regarding number of the victims in this very incident. Thirdly, the Vishnois were the real heroes of this crusades. Therefore first of all let us know whose are the Vishnois and why do they love nature etc.

The Vishnoi sect has been founded by Jambhesware Ji. He was born in 1451 A.D. (Bhadvovadi Astami samvat 1508) in a Rajput family of Panwar subcaste, at the village of Peepasar of Nagaur district of Marwar area, Rajasthan. His father's name was Lohatji and mother Hansa Deviji. His childhood name was Jambu Raj. He has spent his seven years in keen silence in childhood. Twenty seven years as cowboy and till the age of fifty one, he was preaching to his disciples, about his philosophy. In 1485 A.D. he established Kalasa, gave the Pahal to his followers and baptised them into Vishnoi Dharama (sect) and established twenty nine
rules, vish-Twenty, no-nine=vishnoi, means those who are following these twenty nine set of rules;
### Classification of Vishnoi principles

**Table 3.1.**

<table>
<thead>
<tr>
<th>Environmental Principles</th>
<th>Community Health</th>
<th>Vaisnav Principles</th>
<th>Social Principles</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 Do not cut green trees</td>
<td>1. Be strict hygienic</td>
<td>6. Serious thought</td>
<td>4. All should bear,</td>
</tr>
<tr>
<td></td>
<td>till Thirty days of</td>
<td>has to be given</td>
<td>character continence,</td>
</tr>
<tr>
<td></td>
<td>delivery</td>
<td>on God's virtue</td>
<td>and follow supreme set</td>
</tr>
<tr>
<td></td>
<td>(for females)</td>
<td>at the evening.</td>
<td>of rules.</td>
</tr>
<tr>
<td>17. The fuel for yagna and house hold should be clearly seen ferore used.</td>
<td>2. Keep her off five days from house hold affairs when she is in mensuration period.</td>
<td>8. No stilling</td>
<td>5. Remembering god both time, morning, evening.</td>
</tr>
<tr>
<td></td>
<td>3. Morning both for all.</td>
<td>9. No criticism</td>
<td></td>
</tr>
<tr>
<td></td>
<td>15. Drink clean water.</td>
<td>10. No lie and debate</td>
<td>7. All should perform heavens for dharma, Artha, Kama and Moksa.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11. Don't speak false.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>12. Self-introspection Amavasaya</td>
<td>16. All Human beings should speak in pure voice.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13. Be kind to all beings</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>18. Check up Kama, kirodha, Lobha and moha</td>
<td>19. Do bear tolerance and forgiveness.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21. All should remember god Vishnu, time to time.</td>
<td></td>
</tr>
<tr>
<td>24. Prohibition of</td>
<td></td>
<td>22. All beings should be protected.</td>
<td></td>
</tr>
<tr>
<td>25. Avoid tobacco use</td>
<td></td>
<td>23. Do not castigate your blux.</td>
<td></td>
</tr>
<tr>
<td>26. No Drugs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27. Do not smoke</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Thus these are the total twenty nine set of rules, and those who follow them are called Vishnoies. Therefore it was in fact their rule number fourteen 'to protect Green trees is in the very genesis of Khejarly movement; Villagers guided by this religious sentiment as well as keeping in mind the economic utility, and environmental importance of Khejari tree, they have sacrificed their lives for the cause of nature.

This incident occurred in 1730 A.D. during Ajit Singh's (Abhay Singh) regime, he was contemporary to Mughal emperor, Aurangzeb. Maharaja required a fuel wood to burn bricks for constructing a new palace at Jodhpur. Khejarly village suddenly stocked to Maharaja's mind because Khejari tree was in abundant over that area, which could be utilised as a fuel wood for this purpose. Maharaja ordered his executioner to hit this area. Hundreds of them well equipped with hand xe etc. entered he Khejarly village, and started cutting down green trees. People protested their best to prevent executioners against this but seeing the gravity of situation at last villagers literally hugged (embraced) the trees. The so-called first martudom and initiator of this historic movement was said to be Amritadevi Beniwal (Vishnoi) and her three daughters. Before offering her head to the king's executioner chanted that "seir san the ranku raheb, to bhee sasto jan" (it is still a small price to pay if at the cost of my head the tree is saved).
Thus on this very day so many people were killed by the Jodhpur state's executioners, out of them majority, even 80% may belongs to Vishnoi community but others also participated. The number of victims are highly controver sial. General expression is that it was 363 people. No written record is available either Govt. or other survey (Feb. 26th, to March 1993) in the Khejarly village. I have interviewed total eleven old responsible and well aware persons of Khejarly village. They have given different versions regarding numbers of victims in this historic incident;
Table 3.2.
Interviewed respondents of Khejarly village

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Age</th>
<th>Village</th>
<th>Victims (to their estimate)</th>
<th>Special Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Village Head</td>
<td>45</td>
<td>Khejarly</td>
<td>2,3 only</td>
<td>363 figures are farce</td>
</tr>
<tr>
<td>2. Second</td>
<td>56</td>
<td>&quot;</td>
<td>100 to 200</td>
<td>Female Sacrifice is farce</td>
</tr>
<tr>
<td>3. Third</td>
<td>58</td>
<td>&quot;</td>
<td>100 to 150</td>
<td></td>
</tr>
<tr>
<td>4. Fourth</td>
<td>80</td>
<td>&quot;</td>
<td>363</td>
<td>all Visonies were killed</td>
</tr>
<tr>
<td>5. Fifth</td>
<td>53</td>
<td>&quot;</td>
<td>can't say</td>
<td></td>
</tr>
<tr>
<td>6. Sixth</td>
<td>75</td>
<td>&quot;</td>
<td>Nil</td>
<td>Politically Motivated propaganda</td>
</tr>
<tr>
<td>7. Seventh</td>
<td>32</td>
<td>&quot;</td>
<td>363</td>
<td>All Visonies were killed</td>
</tr>
<tr>
<td>8. Eighth</td>
<td>50</td>
<td>&quot;</td>
<td>363</td>
<td>Only Visonies were killed</td>
</tr>
<tr>
<td>9. Ninth</td>
<td>76</td>
<td>&quot;</td>
<td>can't say</td>
<td>Rai kas were also killed</td>
</tr>
<tr>
<td>10. Tenth</td>
<td>96</td>
<td>&quot;</td>
<td>can't figure out</td>
<td>No female sacrifice was there</td>
</tr>
<tr>
<td>11. Eleventh</td>
<td>33</td>
<td>Phitkasni</td>
<td>363</td>
<td>Only Visonies were killed</td>
</tr>
</tbody>
</table>
The variations in the number of martyrdoms in this great ecological incident revealed by Khejarly villagers has to be analysed in very rational manner. I have interviewed total eleven persons in Khejarly village. On the basis of their age, different caste, community, gender, social status. Regarding their own communities responsibility devolved on them on the basis of their national attitude, and balanced judgment, acceptability by their own community as well as by other villagers etc. These respondents have come up with different remarks and opinions, numbers of victims. Out of eleven, four Vishnoi were interviewed and all of them stuck to 363 figures as a victims in this revolt while two Rajputs are of the opinion that this entire episode is politically motivated and first time strategically initiated by Political leader. I interviewed three persons from Meghwal community including oldest person of entire village tenth respondent, 96 years old, also given different information. She could not figure out the exact number but accepted that there was a incident in this village and no women were killed in this crusade.

One of the oldest person in that village nine respondents, 76 years, also gave a different dimension to this case study that, Raika's (Rehbaries) were also part of this movement not only Vishnoies, and regarding the number of casualties he is not of the sure majority were Vishnois and movement was led by them but other villagers also participated in this agitation. Fifth respondent a Muslim
aged 53 years accepted that he had heard the story like other the general impression was 363 but they could not say anything regarding number of persons killed in this environmental conflict.

The further socio-political analysis of this matrix could be in this way that the both the Rajputs have so undermined this ecological movement. Maybe due to certain reasons firstly, Maharaja Abhay Singh himself belongs to the Rajput caste, therefore they might have thought that this would be an insult to their own community. Secondly, they might de of the opinion that if this was accepted publicly then the reality of feudal system or princely state of Jodhpur would obviously be exposed.

Thirdly, still after independence, Rajputs are psychologically not prepared to accept the changing socio-political and economic scenario in democratic setup and day to day declining their educational political and economic status in society. While on the other hand all four Vishnois respondents are sticking to 363 as total killing in this conflict. They may stick hard to these figures, because now it has became the prestige issue for entire Vishnoi community, generally mass and print media has projected these figures for last sixteen years. It may be politically motivated also because how does this great event become so important overnight in 1978 only. The possibility of mobilising people for political ends on the
basis of caste and creed can not be overlooked in our country.

Therefore now it is very clear that in this case study there are three groups, representing the different opinion regarding this environmental upsurge. First group = Rajputs, - totally undermined this movement. Second groups = Vishnois- absolutely over estimated the movement. Third groups= Meghwal, Raika Muslim- present a rational opinion rather having neutral position of not to underesti­mate and no fabrication also.

Therefore, group first and second cannot be relied upon because of their extreme approach. And of course they represent two inverse interest groups also block first to offend at any cost. Hence the ultimate conclusion depend upon the third groups, one or interesting reason is that claimants (Vishnois) don't have any written records of this movement either in Government documents or other local written evidence etc.

The third groups comprising five persons including one Muslim, one Raika and one Meghwal. The remaining two persons interviewed on the basis of specific criteria, firstly, the oldest person of the entire village, aged 96 years, secondly the entire village’s most intelligent and informative person, aged 56 years> Both names were recommended by the village head (aged 45 years) and incidentally both of them happened to be from Meghwal community. Therefore out of five persons in this third
groups which would be the most determining group in this case study. Three belongs to the same community (Meghwal) but two of them came by incidentally, deliberate attempts has not been made by me because one may raise this question that out of five how, does it happen that three Meghwals has been selected as a respondent, may be due to researchers's biaseness because again it is co-incidental that researcher himself belongs to the same community. While the fact remains that I have tried my level best to be neutral, rational, as a researcher should be.

At last let us have a critical analysis of this third group comprising five persons to determine the controversy regarding number of victims in this ecological conflict.
Determinant respondents of Khejarly village

Table 3.3

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Age</th>
<th>Village</th>
<th>Victims (to them)</th>
<th>Special Criteria for Selection as a Determining Respondant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Oldest person of entire vil.</td>
<td>96</td>
<td>Khejarly</td>
<td>cant say</td>
<td>no woman village's oldest person</td>
</tr>
<tr>
<td>2. Second</td>
<td>76</td>
<td>&quot;</td>
<td>cant figure Raikas were also participated</td>
<td>Oldest person of that community</td>
</tr>
<tr>
<td>3. Third</td>
<td>58</td>
<td>&quot;</td>
<td>100 to 150</td>
<td>majority of Oldest victims were Visnois of Meghwal community</td>
</tr>
<tr>
<td>4. Fourth</td>
<td>56</td>
<td>&quot;</td>
<td>100 to 200</td>
<td>no woman was killed, Visnois led this conflict</td>
</tr>
<tr>
<td>5. Fifth</td>
<td>53</td>
<td>&quot;</td>
<td>can't say</td>
<td>no woman killed Muslim respondent</td>
</tr>
</tbody>
</table>

Thus the final analysis of this case study could reveal certain interesting points regarding this environmental conflicts occurred so far. Out of total eleven interviewed people in the Khejarly village on the basis of age, caste, community, awareness, reputation in their own community as well as in entire village, other public and social responsibility devolved on them etc, six persons
have been excluded because of their extreme approach taken on this movement. Two persons (Rajputs) totally underestimated the entire movement while four persons (Vishnoins) absolutely over estimated the conflicts. Therefore to get appropriate and rational conclusion of this case study both the groups e.g. extreme pro and extreme anti has been excluded. Hence out of eleven, six is excluded due to their extreme approach, the remaining five persons would play decisive role to sort out the controversy of total number of victims killed in this ecological upsurge. More precisely these five respondents would take rational position also because they do not belongs to either group.

Now, analysis of the views of these five persons would reveal certain interesting issues, which have been over looked in the past. Atlast, only five questions to this group consisting of five persons were posed. Firstly I asked them whether there was any conflict in this village regarding ecological concerns. All of the five respondents accepted that the incident certainly happened certainly. Second question was related to involvement of all villagers or only Vishnoies, as claimed by them. The response was very rational: all five accepted that entire village participated in this movement except, Rajputs and Brahmins, what ever may be their logic to withdraw from this conflict but this is also a hard fact that this movement was initiated, led by Vishnoies and majority of the victims belongs to the Vishnois community whatever may be the
casualties.

Third question that I have asked them was, the number of persons killed in this movement, which is a real ticklish puzzle. Out of five respondents, three, Lishmo Bai Meghwal (96) oldest person of entire village, Mishra Ram Raiba (76) oldest in his community, and Isu Khan (53) were not in a position to tell the exact number of persons killed by Maha Raja's executioners in this environmental conflict but they have accepted very rationally that people had been massacred in this incident, whatever may be the number. While remaining two respondents, figured out the number of victims. Durga Ram Meghwal says it was 100 to 150 and Pratap Ram Meghwal says it is 100 to 200 persons killed in this ecological episode. Fourth question I have posed to this core group was related to female martyrdom in this revolt. Out of five, four persons even including one women respondent Lishmo Bai Meghwal (96), oldest person in the whole village, frankly declared that not a single female was killed in this movement, this is sheer fabrication. The fifth respondent, Durga Ram Meghwal, was confused in fact is doldrums, whether to say yes or no regarding this issue. Last but not least, fifth question, was of this affair was politically motivated, out of five, four accepted very honestly that this entire show is very much politically motivated especially after 1978, directly or indirectly with the rise of Bhajan Lal as a great Vishnoi leader in Haryana. The fifth respondent, Isu Khan refused
to comment on this very issue whatever may be the reasons.

To sum up, there are certain things seems to be crystal clear after staying almost one week in the Khejarly village, interviewing eleven persons of that village, highly responsible, reliable, informative, age and experience wise knowledgeable person etc. After rationally analysing their information, these things could be established in this manner to break certain myths created by this ecological unrest.

This conflict has occurred in the Khejarly village.

All castes, communities except Rajputs and Brahmins of Khejarly and surrounding area participated in this movement. Majority of participants were from Vishnoi community, they were very much in the fore front and movement was initiated and led by Vishnois. Total number of persons killed in this movement is very much controversial, authoritatively no digit could be figured out.

No women casualties could be traced out, in this environmental episode, rather tragedy.

There seems to be political manoeuvring in this incident especially after September 12, 1978. When first Martydom fair was held at so called conflict site in the Khejarly village. Under the guidance of Sant Kumar Vishnoi, Pradhan, All India Jeev Raxcha Vishnoi Sabha, Abohar Punjab. Now it has became tration, every year on Krishna Paxcha, Dasmi of Bhadma month, witnesses the fair. At last whatever may be the fabrication, facts and figures in this
revolt. But Vishnoi communities, sincerity and commitment to protect nature and beings can not be questioned at all.
Chipko Andolan Phase Second

The Chipko movement phase second was started in March 1973 in the remote hill town of Gopeshwar in Chamoli District. On that very day representatives from a sports goods factory situated in Allahabad reached Gopeshwar to cut ten ash trees near village mandal. The villagers courteously told them not to do so but when the contractors persisted, they hit upon the idea of hugging the earmarked trees. The next day the sports goods manufacturers had to return empty-handed. After some weeks late the same contractor surfaced at Rampur Phata, another village around 80 km away from Gopeshwar, with a fresh allotment from the forest department. As soon as the villagers of Gopeshwar learned of this, they marched to Rampur phata with drums and Songs, gathering more people on the way. A confrontation ensued and the agitators hugged the earmarked trees to foil the contractors once again.

The Chipko Andolan reached its zenith in 1974 when the women of Reni village around 65 km from Joshimath, got involved in a dramatic way. One day when their men were away in Joshimath protesting against the action of a forest neighbouring Reni, the contractor arrived at the village to begin felling, taking this as an opportune movement. Undaunted by the number of men or their axes, the women of Reni village, led by Gaura Devi, an illiterate women of 50, barred the path to the first which went through the village. As the woman stood there, they sang:
"This forest is our mother's home, we will protect it with all our might".

The genesis of the Chipko movement has both an ecological and an economic background. The Alkananda valley in which the movement originated was the scene of an unprecedented flood in 1970. The tragic aftermath of this flood left a deep impression on the hill folk and, within, soon followed the appreciation of the vital ecological role that forests play in their lives. The villagers here have also seen and resented the manner in which successive governments beginning with the British have taken away their forest wealth and turned into a resource bank for faraway urban markets. Even for minor forest produce and articles of daily necessity like firewood, the local people have been coerced to become thieves in their own homeland. Slowly, the entire ecology of the region has changed. The local people prefer the broad-leaved Oak. But with the demands of the industrial culture increasing, Oak forests have been destroyed and replaced extensively by the Chir Pine. Today, when the local villagers want to get Oak wood to make plugs, they are allotted Pine trees, whose wood is useless for this purpose.

Dasohli Gram Swarajaya—the Gopeshwar based organisation that has been at the forefront of the Chipko movement since its early days—decided to set up a small factory to use the pine rebin, it was persistently discriminated against in the supply of the raw material. While the allotted quantity was small, the price was much higher than the
prices at which the resin would be allotted to the larger factories down in the plains. No amount of persuasion or running to Lucknow seemed to work. The factory still limps along.

The non-violent, action-oriented Chipko movement has greatly helped to unite the people and focus attention on the mismanagement of forest resources. Its Gandhian character has brought it considerable sympathy. The expert committee set up by the state Government to enquire into whether the Reni forest should be felled found that the Reni women were more right from a scientific point of view than the forest department. This provided the movement considerable respectability. The committee concluded that because of the highly sensitive nature of the watersheds situated deep in the Himalayas, all felling should be banned to allow regeneration. Although these developments have not made the forest department change its forest policy but at least in the Chamoli district it is no longer in a position to implement its policy of selling forest to private contractors.

Meanwhile, as the years have gone by, the movement itself has acquired two distinct streams of thought marked by its two leaders: first Chandi Prasad Bhatt from Gopeshwar, who pioneered the movement, and second, Sunder Lal Bahuguna from silyara in the Tehri region. The operational style of both these leaders is entirely different. Mr Bhatt is a grassroots worker and believes
mainly in organising the people. While Sunder Lal Bahuguna, a journalist, is a publicist par excellence. Though Bahuguna has also organised some protest activities in his region—for instance, Chipko activists in Henwal Ghati once went to the forest to bandage the wounded trees with mud and sacking to protest against the indiscriminate tapping of pine trees—his main focus has been on spreading the message of Chipko far and wide. In 1981 Bahuguna started on a foot march from Kashmir to Kohima to campaign against deforestation. Chandi Prasad Bhatt, on the other hand, has dug deep roots in the Chamoli region. He is, as a result, far less known than Bahuguna. Bhatt has realised that if the local village communities have the right to control their surrounding resources, they must also undertake to conserve and develop those resources. So he has organised the country’s largest voluntary forestation programme through eco-development camps sponsored by the Dasohli Gram Swarajya Mandal. These bring together local villagers, students and social workers who have planted over a million trees. The survival rate of these Chipko plantations has been an astonishing 85-90 percent in most cases. Bahuguna, however, tends to dismiss this activity as irrelevant at this stage of the movement against deforestation and concentrated all his writing and speaking power against the forest departments.

Both leaders differ not just in their operational styles but also in their philosophy with respect to the use of forests. Bahuguna is fiercely ecological in approach.
Regreening of forests is top priority—a matter of national defence—for him. For instance, he argues that the main objective of forest management in Himachal Pradesh should be soil and water conservation: forests do not bear timber, resin and foreign exchange but soil, water and pure air. The self-sufficiency of the hill people in food, clothing and shelter is important to Bahuguna but secondary to the major ecological objectives. He is suspicious of all types of forest based industries, including those set up by the local people. He wants all commercial green felling to be stopped and no new contracts to be entered into with industrialists to supply raw material.

According to Chandi Prasad Bhatt, the search for a new ecodevelopment process for the region and the involvement of the local people are primary issues; "saving the trees is only the first step in the Chipko movement."

Mr. Bhatt further elaborates that economic condition in the hills are today worse than even the average conditions of poverty in India. And conservation is not possible without local people's co-operation. Hence, Bhatt argues that forest resources to be used in manner that is both environmentally and developmentally sound or to say the environment is preserved, the benefits of the controlled exploitation accrue to the local people, a process in which decentralised economic growth and ecological conservation go hand in hand. While tree felling has continued at the instance of the forest department in
Tehri Garhwal, it is not possible to do so any longer in the Chamoli region because of the higher level of mobilisation of the local people over there. In fact, Chipko movement phase second essentially consists of a string of spontaneous confrontations in which none of the so-called leaders were present. Women acting entirely on their own, rose up on the spur of the movement, both leaders joined later on.
LOCATION MAP
TEHRI DAM

R. Bhagirathi

TEHRI
R. Bhilangana

TEHRI DAM
Agalaknanda

RISHIKESH

R. GANGA

HARIDWAR

DEVARAYAG

SOURCE: FRONTLINE
MARCH 11, 1994

FIG. 2
Tehri Dam

A case study of the environmental impact of the Tehri Dam provides an insight into the dominance of techno-economic consideration which gives little, if any, weightage to the well-being of local people or the destructive impact on the natural environment. It also highlights the influence of political, financial and technical interests and, evidently, ready acceptance of the presentation of unrealistic cost/benefit assumptions prepared for the sole purpose of obtaining project clearance according to norms established by the Planning Commission. For this detail let us have critical review of this project from genesis to nemesis to know the basic facts about this scheme.

1972: A Rs 197,29-crore dam at Tehri to generate 600 mega watts power mooted. Mr. N.D. Tiwari, the then UP Chief Minister, pressurises the Planning Commission and gets the project cleared.

1978: People of Tehri go to the petitions committee of parliament against the dam. Tehri Bandh Virodhi Sangharsh Samiti formed.

1980: Mrs. Gandhi asks the Department of Science and Technology to review the project. Mr Sunji Roy appointed the chairman.

1986: Mr. Roy submits report. says: "Seismic risk too great. Dam should not be constructed".

The Environment and forest ministry refuses
clearance, yer the Government enlarges the project to a Rs. 3,00 crore scheme for generating 1,000 mega watts in phase one and another 1,400 mega watts in phase two. Construction continues without clearance. On his visit to India, Mr. Mikhail Gorbachev grants assistance to the fund-starved Tehri project. But not before the committee of secretaries directs the central water commission to convene a meeting of experts to report on the dam’s safety.

Oct, 1986: Clarance was granted. The report says a dam in this region could only withstand an earthquake of magnitude 5.9 and peak ground acceleration of 0.25 g. Environmentalists give no credence to the report as it wasn’t based on field studies by seismologists.

Aug, 1989: Project submitted to Public Investment Board, Planning Commission, and it asks for environmental clearance. The standing Environment committee under Dr. D.R. Bhumal rejects Tehri proposal on all counts. Says there is evidence of an earthquake of over 8 points on the Richter scale in the life time of the dam. Subverting this report, the committee of secretaries sets up a highlevel panel, headed by Dr. D. Daundyal, to 100 k into the seismicity. Another member, Dr. V.K. Gaur, Secretary, Department of Ocean Development, asks for a review.

June, 1990: The Committee defers decision on clearing the project, following objections raised by Dr. Gaur. At the same time, newspapers report the on-schedule completion of preliminary construction of the dam.
July, 1990: The ministry of Environment clears project while stipulating that the project authorities must get safety aspects approved by an expert committee. Leading environmentalists assail clearance.

Jan, 1991: The centre gives go-ahead signal and says it would not allow further delay in the project's completion.

July, 1991: The Indian National Trust for art and cultural Heritage urges not signing the dam for an earthquake of 8.5 magnitude.

Aug., 1991: The Union Ministry of Environment lays down stringent conditions while issuing clearance, following warning by an experts committee on the "environmental appraisal" of the project that the dam site is located in seismic gaps', where a major earthquake could be imminent. The Ministry urges the project authorities to get safety aspects and design of the dam approved by the high level expert committee constituted for the project. Failing which it threatens withdrawal of clearance.

Oct. 20, 1991: Disaster strikes, bringing the simmering controversy to a boil. Greater disaster in store, says experts, after earthquake.

14th Dec., 1992: work on dam stopped by protesters who set up camp on dam site.


4th March, 1992: Habeas corpus filed by People's Union for Civil Liberties for release of Shri Bahuguna and others.

10th April, 1992: Sunder Lal Bahuguna Suspends 45-day Fast, continues campaign to save the Ganga Himalaya.


The controversy has arisen with regard to the suitability of the Tehri dam site for the construction of 260.5 mtr. (850 Feet0 high, bottom width 1125 mtrs). dam with attendant result of submerging vast fertile valley areas of Bhilangana and Bhagirathi where people have been living for millennia. Generation after generation gnawed terraced cultivated fields from the mountain slopes pouring all their earnings in developing the land. Miles of breast walls have been constructed at enormous expenditure which is impossible to repay as compensation should the area be submerged.

The study of the Tehri Dam takes on additional importance, because it is the first time that a detailed environmental impact - assessment of a large dam has been undertaken officially, as a result of the collective organized protests of local citizens. The latter recognized the dangers to both the human and natural environment locally and in the overall area upstream and downstream of the dam. On the other hand expert's views on dam site, building materials, siesmielty, silting, slumps from the hills of the reservoir area, are discussed as under.
Dam site

The rocks of the dam site are highly Fissile. Phyllites, quartz-schist with variously thick gouge zones in between the foliation and along numerous other shear zones. The foliations are dipping 45 down stream. The phylites are highly contorted, folded and sheared. There is thick talus cover on the right abutment above the road section with attendant deep weathered zone. In addition there are crisis-cross faults filled with gouge material both in the river bed and on the abedments. The physical structural and textural configurations do not present suitable foundation for 850 ft high concrete dam. It would require expensive treatment, doubtful washing under pressure of gouge along thin zones, excavation of wide zones to formula depth and to the backfull with cement concrete. The chances of major slumps occurring above dam height from the high hills are a likely feature. Taking all remedial measures would enhance the cost of the project disproportionately. In consideration of these difficulties, a 850 ft rock-filled dam has been proposed as a measure to overcome these.

The Rock-filled dam naturally would be the best, considering the unfeasibility of a cement concrete dam as an alternative, but the site is very tight and constructional hazards, restricted movement of vast quantities of earth, moving equipment and lack of suitable natural rock fill material and material for the impervious core are a
serious defect of the site. Generally, wider valleys are chosen for Rock fill to overcome operational difficulties. There's no suitable rock type, unless fissile and flat breaking schists, phyllites and ghartz-schists could be used and are available in the reservoir area within economic distance of the proposed site.

The highest earthen dam that the Indian engineers have so far constructed is the Ramaganga dam and to undertake construction of 850 ft high dam will be a too bold experiment, especially in a seismically active and narrow topographic terrain at Tehri. And there is heavy risk involved in this experiment as Nirmal Sengupta viewed,

"The competence of Indian engineers cannot be doubted but this would no doubt be a very risky venture".

A rockfildam across a mighty stream like Bhagirath would require adequate spillway facility sufficient free board so as to prevent over dropping by wind and seismic movements. It is not difficult to conceive the likely danger to the U.P. plains in the event of failure of a rockfill structure. The Gahana lake in Chamoli on the Birehi was a natural 850 ft high rock fill mass. It was swept away on the 20th of July 1970, causing great damage to property, livestock and human beings downstream in the Alaknanda valley. The Tehri reservoir will cause flood in the Ganga river rising to over 200 ft above the present
level.

BUILDING MATERIAL

Nearness and naturally graced building materials are very vital both for aggregateing cement concrete dam and earthen or rock fill dam. There is a great dearth of suitable aggregate material and earth material needed in large quantities for the earthen or rockfill dam within working distance. Rock quarries containing suitable material would have to be located. Fissile rocks are to be avoided and there is no out crop that may yield the required rock fill material in such large quantities in the vicinity of Tehri.

SILTATION

Silting of the reservoir would be on account of a hill wash brought down from the hill slope above the reservoir during the monsoons and slumps when the reservoir will be full by the main streams and the tributaries. The Bhagirathi and Bhilangana are both snow-fed with their source in glaciers which carry large quantities of fine silt to boulders. The glaciers are moving ice streams, even though at a slow rate, but transport vast quantities of material. Melting of the snow and ice contributes enormous quantities of fine silt and moronic material which is washed down by the principal rivers both as bed load and in suspension. The siltation rate of Bhakra was assumed at $2^{4.29}$ kam/100 km. but the observed rate turned out to be $6^{2}$ kam/100 km. Ramaganga's assumed rate was 4.29 but the observed rate was 18.20 ham/100 m.
The siltation rate of the Bhagirathi and Bhilangana would be many times more than that of Sutlaj. The Sutlej drains the trano Himalayan region with small rainfall, does not have as large glaciers in its course and the river gradient is only about 10% of this Bhagirathi above Tehri. The Bhagirathi and Bhilangana rivers drain the southern slopes of the Central snow covered Himalayas, where erosion is extraordinarily active and the rivers bring silt for 8 months in the year. The hill sides of the catchment area have been denuded of vegetation leading to high erosion. The gradient of the river is steep and it is capable of bringing many times greater silt and bed load than the flat gradient Sutlej above Bhakra.

Thus the silt contents both in suspension and bed loads need a careful study of a 20 years period before such a bigin reservoir can be proposed. The life span of a reservoir would depend on the rate of silting. It will be dangerous to treat the Bhagirathi and Bhilangana catchments for determination of silting rate on empirical formula S.P. Nautiyal's views (ex. Director General of the Geological Survey of India) regarding durability of Tehri Dam has raised very basic question. To him .lm15.rm55

"The life of the Tehri reservoir may turn out to be only 30-40 years instead of 100 14 years as assumed".

The mountain slopes above the reservoir river area are steep and large quantities of taluses material rest on
them. This material in due course of time slides into the reservoir affecting the stability of numerous villages, much above the head of the proposed reservoir. A quantitative estimate of such unstably resting material on the slopes may be an astronomical figure. This will shorten the life of the reservoir.

SEISMICITY

The rocks at the dam site appear to belong to the Simla states which are considered to be autochthonous resting on a crystalline basement. The tear faults are possible reflection of the basement faults and can be seismically very active. It is not possible to forecast as to when a catastrophic earthquake may take place in the region but it is a potentially seismic area. Similar tear faults are met at the Narora dam site on the Nayar river, a tributary of Ganga river about 10 miles upstream of Byasghat which was investigated in great detail during 1945-51, and the site was abandoned inspite of more competent rocks. Shivaji Rao's opinion regarding Dam site rock structure based on Geological ground proved that this project is scientifically not viable, .lm15

"The Geological survey of India's view on the seismicity and the rock condition at Tehri dam site are very dear and clearly indicate the unsuitability for a concrete dam".
Humanitarian aspects

Last but not least, the local people, wherever they are in the world have a deep rooted emotional attachment to the place of their origin. And Indians conspicuously so. We cannot separate our place on the earth from our lives on the earth nor from our vision and our meaning as a people. We are taught from childhood that the animals and even the trees and plants that we share a place with, are our brothers and sisters. Therefore when we speak of land, we are not speaking of property, territory, or even a piece of ground upon which our houses sit and our crops are sown. We are speaking of something truly sacred. Is there a person anywhere in the world who does not revere his homeland? Is there a human being who does not revere his homeland, even if he may not return?

In the Tehri Dam case, total, 95 villages would be replaced, out of that 23 villages including Tehri Town would be totally replaced and remaining 72 villages partially replaced. Comes around 1516 families and three villages 154 families would be replaced for New Tehri Town and five villages 255 families for workshop and colony, total 1925 families would be absolutely replaced, and others, in total comes around 440000 people would be terribly affected due to this project. They have said to be rehabilitated near Dehradun and would be given due compensation but in practice 'pathetic' is the only word to show their plight. The uprooted have added to the urban and rural poor. Each project
has been viewed in isolation there is no overall estimate of the total outsees from the 1554 large dams in India. At a rough estimate the total is between six and a half to seven million souls, most of whom are from the economically deprived tribal and forest-dwelling sections.

Thus this is the real Picture of Tehri Dam case study in which even expert’s views has also been overlooked and prodam scientists approved the project as ab-served by S.P. Nautiyal

"The scientists and technicians well equipped with the technical know-how conceive colossal projects like the Tehri Dam".

And finaly to conclude on the basis of Interviewed persons like, extreme, pro and anti dam group, leaders of anti dam, dam construction authority as well as government officials, volunteers, common people, affected villagers, geologist, etc. Emphasising on geomorphology, of Dam site, Building material, siltation, seapage, Seismicity, and humanitarian aspects, life span of dam, it has been proved to be unviable, unscientific risk to be taken by Government machinery. The occurrence of earthquakes of magnitude seven with 100 metres of the Tehri Dam indicate tension build up leading to a magnitude of eight or more during the life of the dam. None of the experts disagree about this. The structural design of the dam has been done on this basis. The impact of one in the area of the dam or in the catch-
ment or one of less intensity near the dam site or the reservoir will result in a catastrophic tragedy for Rishikesh, Hardwar and beyond to the people living in this part of the homeland. Neither the promoter nor those who laid the dam will be around to bear responsibility in the future.
NARMADA VALLEY PROJECT

The idea of damming the Narmada goes back many years, but its realization has been complicated by the fact that the river passed through three states, which could not agree upon division of project costs and benefits. In 1969 the dispute was referred to the Narmada water Disputes Tribunal, established under India Inter State Water Disputes Act, 1956. In 1979 the Tribunal handed down its award. The Tribunal, by agreement of the states, for the purpose of distribution of benefits accepted the figure of 28 million acre feet as the flow the Narmada. It went on to apportion 9 million acre feet of water to Gujarat: the water to be diverted into the canal for use in that state (another 0.5 million acre feet was to be delivered to Rajasthan). The hydroelectric benefits were divided among the three riparian states. The assumptions upon which the Tribunal's award were based included a second dam project, Narmada sugar which was to be built, concurrently with Sardar Sarovar, upstream in Madhya Pradesh, as part of a basin-wide storage system.

The Sardar Sarover foundation stone was laid by J.L. Nehru in 1961 (SSP project) in the state of Gujarat, excluding environmental cost of forest submergence, Rs. 8,190 crore. Irrigating 187 lakh hectares, generating 1450 MW power. Other Benefits e.g. flood control, pisciculture, Tourism, urban water supply etc. Expected submergence is around 39,134 hectares, forest, 13,744 hectares, cultivable
land, 11,318 hectares. Displacing 66,675 people, out of that 48,250 SC/ST.

The Narmada Sagar Project in the state of Madhya Pradesh, located at Punasa District, Khandawa, cost Rs. 6,000 crore (1987) (excluding environmental cost of forest submergence, Rs. 30,923 crore). Irrigating 123 lakh hectares, gene rating 1000 mw power, installed capacity of 140-256 MW firm power, flood control and pisciculture, Tourism, urban water supply etc. Total submergence is, 40,332 hectares forests, 44,363 hectares cultivable land uprooting 1,29,396 people (1981 census) all in Madhaya Pradesh out of that 30,948 Tribals.

The total picture of entire Narmada Valley Development Project goes as:
Consisting of 30 major (CCA over 10,000 hectares), 135 medium (CCA between 400r 10,000 hectares) and 3000 minor (CCA under 400 hectares) dams, besides 5 hydel, 6 multi-propose. 19 irrigation, 10 on Narmada River, and 20 on tributaries. Expected expenditure on entire project over Rs. 25,000 crore, providing Irrigation - 48 lakh hectares CCA. Generating 2700 MW installed capacity power. Submerging over 6 lakh hectares, 3.5 lakh hectares forests, and 2 lakh hectares agricultural and other land. Displacing total 10 lakhs people.

Source: Dept. of Environment and forests, Govt. of India 1987.

The state government claim that the Sardar Sarover project (SSP) and the Narmada Sagar Project (NSP) would
irrigate 109 million hectares (MH) and 0.14 mh of land and generate 1450 mw and 1000 mw of power respectively. The hydroelectric power of the SSP would be shared by the states of Gujarat, Maharashtra and Madhya Pradesh whereas, the irrigation benefits would accrue to the state of Gujarat, Maharashtra and Madhya Pradesh, whereas, the irrigation benefits would accrue to the state of Gujarat and Rajasthan. On the other hand, all irrigation and power benefits of the NSP would accrue to Madhya Pradesh only. Without the NSP, the SSP would not be able to achieve its full potential of irrigation and power, as it needs regulated water supply from upstream. These projects had been hanging fire for many years for want of environmental clearance from the Ministry of Environment and Forests. The government of India has given clearance to the construction of the SSP in Gujarat and the NSP in Madhya Pradesh. But what Kotharis Singh observed in this case holds weight

"very few will dispute the fact that the ecological impact of these projects have not been properly studied".

On the basis of my primary field survey, information gathered by interviewing both the Groups e.g. anti and pro-dam blocks, beside interacting with Tribals, other villagers of each state Gujarat, Madhya Pradesh and Maharashtra. My main objective was to find out how much the common, affected people knew of the situation about the dam, displacement, their rights, about the contents of the
Narmada water Disputes Tribunal Award (NWDT), and about the steps contemplated by the various governments and so on. The response was very little, and even less of that was clear information from official sources. This was especially but not exclusively so in the tribal areas people had heard of the dam from the vaguest sources. They had been told by pilgrims, by passers by and by casual acquaintances in the weekly haat, that there was a dam coming up. They donot quite know where and when: the rumours had been rife for twenty years or so, very few were sure of their own fate, should the dam come up would their own land be submerged?

The stone markers of the Reservoir submergence level that were already in place did not always make sense to them. Sometimes they seemed to exclude low-lying areas from submergence and embrace the higher points. Other interesting remark was that the officials did not hire local labourers for diving the ground to lay the markers, or carry their equipment so the villagers lost a precious opportunity of asking questions, or even of learning some thing by eavesdropping!

In a Madhya Pradesh tribal village of Borkhedi, I had to spend considerable energy persuading the villagers that contrary to what they had been told, they could not demand land any where throughout India. They wanted to go to Maharashtra or continue to stay in Madhya Pradesh. NVDA officials had told them that they had to go, but they could
settle anywhere they liked. Elsewhere, officials had been telling people that they had only two options: land in Gujarat or money. No one mentioned land in Madhya Pradesh and certainly no one spoke of any opposition to the dam. While it is interesting to note that Bhils (Tribe) of Madhya Pradesh were being told that the dam would not affect them.

The Bhils of Maharashtra looked across to their cousins in Gujarat or Madhya Pradesh. Along the right bank of the river, Madhya Pradesh ended and Gujarat began; on the left bank, Madhya Pradesh gave way to Maharashtra which was sandwiched between Madhya Pradesh and Gujarat. Unconcerned by boundaries, the Bhils entered into marriages across all there states. Now, for the first time, the boundaries threatened to assume a critical importance in their lives.

Thus, there seems to be a strategy to provide half information or to hide the basic issues from common people, those who would be affected from these projects. May be due to two reasons, firstly to create the confusion among the victims of this projects and secondly there may be real lack of aggregate assessment of these projects. As it is pointed out by B.D. Dhavan, holds weight.

"The combined environmental and social impact of Sardar Sarovar and Narmada Sagar dams will be much greater than that of expected, such a total assessment has
not been attempted".

Further, environmental impact such as ecological loss due to submergence of forests, loss of wildlife, the combined seismic impact of all the reservoirs, and changes in downstream eco-systems have been inadequately studied or not taken seriously at all. As it is also emphasised in Morse report that the construction of dam on a free flowing river has obvious implications especially for the downstream ecosystem, the then proposed developments upstream will divert most of the river flows. But we found that no assessment of downstream impact has been done. Even some of the basic information is only now being gathered.

Therefore now it is very much clear that Government machinery is not serious enough to redress the basic issues raised by common people, environmental activists, and social workers regarding these megadam projects. No alternative dam designs been evaluated so far. One of the fundamental issue overlooked by the respective Governments in Displacement and rehabilitation. Both these projects would uproot nearly two lakh people from their habitats. Official sources state that in the case of the SSP, 182 villages of Madhya Pradesh, 36 of Maharastra and 19 of Gujarat will be submerge, while the NSP will submerge 254 villages of Madhya Pradesh. Even respective Governments are not committed to properly list out the environmental refuge as pointed out by vital,
"comprehensive scheme for rehabilitation of displaced people still lacking, the figure of the affected population would be much greater than official version".

Infact this is reality that these figures are not correct, because this include only revenue villages. I have traced out six forest villages during my primary field survey at Tehsil Barwani Dist, Dhar, Madhya Pradesh which will also go under Sardar Sarovar's waters along with revenue villages. But in official records, there is no mention of these forest villages in the list of submerging villages. Similarly no attempt has been made to list those villages which will be affected by the backwater effect.

The families affected by submergence of the SSP are to be rehabilitated as per terms of the Narmada water Disputes Tribunal. Although the directives of the Tribunal are a marked improvement on past rehabilitation policies, they contain serious loopholes and omission. Firstly, the Tribunal's Award relates only to ousters from Madhya Pradesh and Maharashtra. Secondly, only those Families from whom more than 25 percent of its land holding is acquired shall be entitled to irrigable land with a minimum of two hectares. Lastly, there is no mention of resettlement and rehabilitation of forest-dwellers who are eking out a living on common property resources. Besides, the majority of potential ousters of Madhya Pradesh are not aware of any of
the directives laid down in the Award. The interesting fact I have found in my primary field survey that the directives laid down in the Tribunal Award have been misquoted to the potential oustels by the project officials.

The Morse commission, appointed by World Bank also emphasised certain points regarding Resettlement and Rehabilitation issue. The bank and India both failed to carry out adequate assessment of the human impacts of the SSP many of the difficulties that have beset implementation of the project have their origin in this failure. There was virtually no basis in 1985 on which to determine what the impacts were that would have to be ameliorated. This led to an inadequate understanding of the nature and scale of resettlement. The bank's principle, embodied in the 1985 credit and loan agreements, that oustees would improve or at least regain their standard of living as quickly as possible, was not consistently advanced or insisted upon strongly enough. The bank failed to ensure that those affected by the construction of the canal and irrigation system would be entitled to resettlement benefits. India's record of Resettlement and Rehabilitation, has been unsatisfactory in river valley projects, would have prompted the bank to adopt a less flexible standard. Gujarat provides two hectares or irrigable land to all oustees, but Maharashtra and Madhya Pradesh give this only to "Landed" oustees, thus excluding 60 percent of the total from resettlement benefits. In Maharashtra and Madhya Pradesh, limit
availability of suitable resettlement land is a serious problem.

At last Morse Commission has raised very serious question of environmental impact on human and other beings affected by these Mega Dams. They have put it in very precise manner that

"The foundations of the dam are in, the dam wall is going up, the turbines have been ordered and the canal is completed to the Mahi River. No one wants to see this money wasted. But we caution that is may be more wasteful to proceed without full knowledge of the human and environmental cost".

The report further says that the measures to anticipate and mitigate environmental impact were not properly considered in the design of the projects because of a lack of basic data and consultation with the local people. The afforestation and catchment area treatment programmes proposed upstream are unlikely to succeed within the time table of the projects because of lack of consultation with and participation of villagers in the affected areas. There has been no comprehensive environmental assessment of the canal and water delivery system in the command area. There will be serious problems of waterlogging and salinity. Despite the stated priority of delivery of drinking water, there were no plans available for review.
Thus to conclude Narmada Valley case study by taking into account Vidyut Joshi's observation,

"The benefits have been exaggerated, while many costs have been under estimated or not computed at all. The financial viability of the dams has thus not been established".

Considering all other factors e.g. upstream (including reservoir), soil erosion, loss of forest, flora and fauna, siltation, sedimentation. Downstream (including command area), water logging and salinity. Flash floods, loss of wildlife.

Health hazards (Malaria, Filaria, other water-related diseases around the reservoir and in the command areas), effects on Down stream Ecosystems and of Backwaters, Cost-benefits analysis, Morse Commission report, last but not the least displacement and rehabilitation of around two lakh, docile, innocent and common people of Madhya Pradesh Gujarat and Maharasra has proved enough that these mega dams are not viable to go ahead in future with these projects.

To sum up, ecological movements as the response to environmental unrest from global to local perspective and greater emphasis has been given on three case studies, e.g. Khejarly village revolt, (Chipko Andolan phase first), in which certain old misconceptions has been broken. Tehri Dam
and Narmada sagar projects have been fully analysed, considering all factors. It has been established, very clearly that the projects are not viable, on scientific, economic, social and environmental grounds. But unfortunately, a powerful lobby of contractors in league with pliable politicians seems determined to push the project through. Rational and human approach is the need of hour, we cannot survive without using nature but we must learn to use it with respect.
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