

CONFIDENTIAL



REPORT OF
EXPERT COMMITTEE

REHABILITATION

&

ENVIRONMENTAL ASPECTS

volume - II

TEHRI HYDRO-ELECTRIC PROJECT
OCTOBER, 1997

**REPORT OF EXPERT COMMITTEE
ON
REHABILITATION & ENVIRONMENTAL ASPECTS
TEHRI HYDRO-ELECTRIC PROJECT**

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No.19/18/96-Hydel.II
Government of India
Ministry of Power

Shram Shakti Bhavan, Rafi Marg,
New Delhi, the 17th September, 1996

OFFICE MEMORANDUM

Subject: Constitution of an Expert Committee to examine rehabilitation and environmental aspects of the Tehri Hydro-electric Project.

Work on the Tehri Hydroelectric Project Stage-I (1000 MW) is presently in progress. The project is being executed by the Tehri Hydro Development Corporation Limited (THDC). The project which was hitherto being executed by the Government of Uttar Pradesh, was transferred to THDC in February, 1990 and the rehabilitation policy as evolved by the Government of Uttar Pradesh was also adopted by the Corporation. However, THDC have since then made several improvements in the rehabilitation package.

2. Environmental clearance for the Tehri Hydro Power Project was accorded on 19.7.1990, subject to fulfilment of certain conditions and implementation of environment action plans pari-passu with construction of the Project.

3. Meanwhile, Government of India have been receiving, from time to time, certain demands for further examination of certain rehabilitation and environmental issues relating to the Tehri Project. After a careful consideration of these representations, the Government of India have decided to constitute a Review Committee for the purpose.

4. The composition of the Committee would be the following:

1. Prof. Hanumantha Rao, former Member, Planning Commission, Chairperson
2. Ms. Anna Malhotra, Member
Chairperson, Expert Committee on
River Valley Hydroelectric Projects,
Ministry of Environment & Forests,
New Delhi.

- | | | |
|-----|---|--------|
| 3. | Dr. Kirit Parikh,
Director,
Indira Gandhi Institute of Development Research,
Mumbai. | Member |
| 4. | Dr. T.N. Khushoo,
Tata Energy Research Institute,
New Delhi. | Member |
| 5. | Shri V.K.Sinha,
Society for Service to Voluntary Agencies,
New Delhi. | Member |
| 6. | Prof. Ramaswami Iyer,
Centre for Policy Research, New Delhi. | Member |
| 7. | Prof. S. Parasuraman,
Tata Institute of Social Science Research,
Mumbai. | Member |
| 8. | Prof. Shekhar Singh,
Indian Institute of Public Administration
New Delhi. | Member |
| 9. | Shri N.D. Jayal,
The Himalaya Trust,
Dehradun. | Member |
| 10. | Principal Secretary (Revenue)
Government of U.P., Lucknow | Member |
| 11. | Principal Chief Conservator of Forests,
Government of U.P., Lucknow. | Member |
| 12. | Shri M.L. Gupta,
Chairman & Managing Director, THDC, Tehri | Member |

5. Shri D.P.S. Lamba, Director (Personnel), Tehri Hydro Development Corporation, will be the Secretary of the Committee.

6. The terms of reference of the Committee will be:

- (i) To examine the rehabilitation policy for the Tehri Project and suggest modifications, if any;

- (ii) To examine the implementation of the rehabilitation package and suggest measures for rectification of lacunae in implementation, if any; and
- (iii) To examine the implementation of various conditions of environmental clearance except that relating to safety aspects and design of the Tehri Dam and suggest additional or improved environmental safeguards, if any, based on data and information now available.
7. The Committee shall submit its report within 3 months.
8. THDC will provide all the requisite information/data/reports, ~~as~~ may be called for by the Committee. THDC will also render secretarial assistance to the Committee.
9. Arrangements for the travel and stay of the members in connection with the work of the Committee would be made by THDC. Non-official members would also be entitled to an honorarium of Rs.500/- per day.


(M.L. SHARMA) 17.9.9

UNDER SECRETARY TO THE GOVT. OF INDIA.

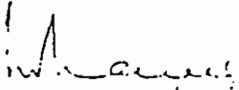
Tel: 371 4169

To

1. The Chairperson and Members of the Expert Committee.
2. The Chairman & Managing Director, THDC.
3. The Director (Personnel), THDC.
4. The Chief Secretary, Government of Uttar Pradesh, Lucknow.

Copy for information to:

1. The Prime Minister's Office (Shri Pankaj Saran, Director), New Delhi.
2. The Cabinet Secretariat (Shri Vijay Chhibber, Director), New Delhi.
3. The Secretary, Ministry of Environment & Forests, New Delhi.
3. PPS to Secretary (P)/JS(AHT)/Director (H)


(M.L. SHARMA) 17/9

UNDER SECRETARY TO THE GOVT. OF INDIA

Tel: 371 4169



पुनर्वास नीति

Rehabilitation Policy

अक्टूबर, 1995

October, 1995

टिहरी हाइड्रो डेवलपमेन्ट कारपोरेशन लिमिटेड
(भारत सरकार एवं उत्तर प्रदेश सरकार का संयुक्त उपक्रम)
Tehri Hydro Development Corporation Limited
(A Joint Venture of Govt. of India & Govt. of U.P.)

interaction with the representatives of the local population. After the formation of the THDC and the transfer of rehabilitation work to THDC, Rehabilitation Policy as evolved by the State Govt. was fully adopted by the Corporation, and later on the amounts of compensation were improved where necessary.

A further comprehensive package of improvements has been decided by the THDC after interaction with the affected population and the local Administration, both for rural and urban rehabilitation. These additional measures indicated hereafter would be effective from 01.09.1995.

BASIC FEATURES OF REHABILITATION POLICY

The basic principles that have broadly guided the formation of the Rehabilitation Policy by the Government of Uttar Pradesh and the THDC are :

- Rural oustees to be compensated through allotment of agricultural land or cash in lieu thereof.
- The rural oustees should be settled in large blocks so that the fabric of their social life remains intact.
- Oustees or their representatives to be consulted to the extent possible in selecting the rehabilitation centres.
- Essential community facilities be provided at each of the rural rehabilitation centres at the cost of the project even if these did not exist at their earlier settlements.
- In accordance with the norms prescribed by the State Government, husband and wife, even though owning land separately in their name in revenue records, are to be treated as one unit for purposes of payment of minimum compensation, allotment of land/plot to land-owners.
- Minors, if any, under the category of land owners are also given same benefits as fully or partially affected families.

Within the framework of the above broad principles, the rehabilitation package had been evolved and further improved from time to time for rehabilitation of the affected population. The effort of the THDC, which is complementary to the Government effort, is to take measures to resettle and rehabilitate the project affected persons with the objective of ultimately improving their quality of life.

EXTENT OF FAMILIES AFFECTED BY THE PROJECT

Due to the construction of the Tehri Dam, an area of about 5000 ha. would be submerged. Because of this, the Tehri Town and 22 villages will come under full submergence, while another 74 villages would be partially affected. Of the 22 villages getting submerged, 15 villages would get affected in the First Phase connected with construction of Coffer Dam, while the remaining 7 villages will be affected when the impoundment of water takes place (Second Phase). In addition, 13 villages have been affected on account of construction of the New Tehri Town and project works/project colony.

The Tehri Dam and Hydro Electric Project had been originally approved in June, 1972, as a State Sector Project for implementation by the Govt. of Uttar Pradesh, with an installed generating capacity of 600 MW. Subsequently, without increasing the height of the Dam as earlier proposed, the installed capacity envisaged from the Project was revised to 1000 MW in 1983. The scope of the Tehri Project was further revised to include new components, i.e., the Pump Storage Plant (PSP) involving an additional capacity of 1000 MW, and a concrete dam downstream of Tehri at Koteshwar with a Hydro Power Plant of 400 MW.

In November, 1986, it was decided to implement the Tehri Project as a joint venture of the Govt. of India and the Govt. of Uttar Pradesh. In July, 1988, the Tehri Hydro Development Corporation (THDC) was set up as a joint venture of the two Governments for executing the Tehri Project. The project works were transferred to THDC by the Govt. of Uttar Pradesh in 1989 while the rehabilitation work of the Tehri Project was transferred to THDC in February, 1990.

The Govt. of India, in March, 1994, approved implementation of the Tehri Dam and Hydro Electric Project (1000 MW), which is the Stage-I of the Tehri Hydro Power Complex. The other two components, viz. PSP and Koteshwar Dam and HPP, would be taken up later.

BENEFITS FROM THE PROJECT

Implementation of Tehri Hydro Power Complex had been conceived to meet the rapidly increasing power demand in the Northern Region, particularly peaking requirements. It is envisaged that from the Tehri Stage-I Project itself, 3568 million units of energy would become available annually which would help not only in meeting the peak time requirements of power more efficiently, but would also add flexibility and reliability to the power system operation. From the power generated at Tehri, substantial amount of power would be available to the State of Uttar Pradesh. Benefits from the proposed Tehri Dam & Hydro Power Project further include additional irrigation to the extent of 2.7 lakh ha. in U.P., and the stabilisation of irrigation in another 6.04 lakh ha. The project would also provide 300 cusecs of additional drinking water for Delhi which will meet the requirements of about 40 lakh people. It would also provide 200 cusecs of drinking water for meeting requirements of the population in Uttar Pradesh.

Apart from these benefits, the project would also lead to an overall integrated development of the Tehri Garhwal Region, with improved communication facilities, industrialisation, tourism, further development of horticulture, fisheries, afforestation of the region, and improvement of highly degraded catchment area in the surrounding hills. The project also involves development of a New Tehri Town (NTT) with all modern infrastructural facilities for rehabilitating the population of Tehri Town. NTT is expected to ultimately develop as a tourist centre, much to the advantage of the local population.

EVOLUTION OF REHABILITATION POLICY

Rehabilitation work had been commenced by the Irrigation Department of the Govt. of Uttar Pradesh from the year 1976. The Rehabilitation Policy, including the location of the New Tehri Town, had been evolved and decided by the State Government at the highest level after

Rehabilitation Programme is being implemented in two phases. The first phase involves all those families which would be affected by the construction of the Coffor Dam (Phase-I). This includes all the urban families of the Tehri Town covered within the cut-off-date. It also includes 2064 fully affected rural families in the 28 villages (15 submergence villages and 13 affected by Project works/colony).

The Phase-II of the rehabilitation would include all the remaining 2845 fully affected rural families and 3998 partially affected families.

REHABILITATION PACKAGE

1. RURAL PACKAGE

As per demand of the oustees, efforts are being made to rehabilitate the fully affected families as far as possible in the nearby Districts of Dehradun and Hardwar or other adjoining districts by developing the selected rehabilitation sites. In developing these sites, care is taken to provide all the necessary civic facilities/amenities, like electricity, irrigation, drinking water, roads, schools, dispensary, community centre etc., particularly where such facilities do not exist within a convenient distance.

The compensation amounts payable to the affected families have been enhanced from time to time. The main features of the existing Rehabilitation Package, updated as on 31.08.1995, are as under:

- i) Each displaced family, even if its acquired land is less than 2 acres, is given 2 acres of developed irrigated land. **Landless agricultural labourers of fully affected areas are also given 2 acres of land free of cost on certification by the concerned DM of District.**

or

Alternatively, half acre of developed irrigated land is offered adjacent to the Municipal limits of Dehradun city to those families who wish to be settled there.

(As per Govt. of Uttar Pradesh orders, those rural families who had after 08.09.1976 acquired land of less than 1 acre in the affected areas by way of agreement (benama), gift (daanapatra), under collusive suites, etc., and those families who had after 05.03.1978 acquired land of less than 2 acres of land in the affected areas of Tehri Project, would not be entitled for allotment of land under the Rehabilitation Policy. Similarly, those rural families who had after 05.03.1978 sold their land holding, and kept only a balance of less than 2 acres with themselves would not be entitled to allotment of land in terms of the Rehabilitation Policy. Also, those agricultural landless labourers who had sold away their land after 08.09.1976 would not be entitled to allotment under the Policy. In case a person has acquired land through a Court Order, the date of Court Order will determine his entitlement for rehabilitation benefit).

Rehabilitation Policy

The Rehabilitation Plan has been broadly divided into 'Rural Rehabilitation' and 'Urban Rehabilitation'. Affected families under Rural Rehabilitation are categorised as either 'fully affected' or 'partially affected'. The families whose 50% or more land is being acquired are being treated as fully affected. Those whose less than 50% land is coming under submergence/ is being acquired are categorised as partially affected and are not to be settled at new rehabilitation sites. For determining the entitlement as 'Fully Affected', or 'Partially Affected', weightage would be given for the type of land holding to the extent of 1 : 1.5 : 3 for class-II (unirrigated), class-I (unirrigated), and irrigated land, respectively.

The number of families affected by the Project are indicated hereafter. The figures are based on records handed over to the THDC and may vary to some extent at the time of final settlement.

RURAL FAMILIES

A total of 4909 rural families are fully affected while 3998 families are being partially affected by the construction of the Tehri Dam and HPP (Stage-I of Tehri Power Project). Landless agricultural labourers are given the same benefits as fully affected families in case they belong to fully affected villages.

A list of villages and families fully/partially affected on account of submergence by Tehri Dam & HPP, is annexed.

URBAN FAMILIES

In case of Urban Rehabilitation, all those families who were settled in the Old Tehri Town as on the cut-off-date of 6th June, 1985, are entitled to the rehabilitation benefits. The broad break-up of these families is as under :

— Land/house owners (including Nazul land owners)	1606
— Benap house owners	350
— Tenants	442
— U.P. Govt./Semi Govt. Employees	1548
— Institutional/Central Govt./Bank Employees	605
TOTAL	4551

REHABILITATION PROGRAMME

Rehabilitation is an activity which has to move concurrently or ahead of each stage of construction of the Project. Therefore, rehabilitation process has been so planned that on one hand the programme of construction of various stages of the dam is not hampered and on the other hand the affected population gets rehabilitated well in advance of each stage of submergence.

whereas possession of allotted land would be given at the time of award under the Act.

viii) In addition, compensation for trees is paid to the displaced families as per evaluation done by the State Forest/Horticulture Departments.

ix) Following cash amounts are further given to the displaced rural families :

Item	(in Rupees)	
	As on 1989 - 90	From 1991 - 92
— Grant for shifting of house-hold effects	3000	5000
— Grant for purchase of seeds and fertilizers	1000	2000

Partially Affected Families

Partially affected families are to be paid either cash compensation for land coming under submergence, which is to be calculated as per Land Acquisition Act, or to be allotted land taken over from the fully affected families, without dislocating them from their existing locations.

Titles to the Land

The nature of title to be transferred, to the oustees at the newly developed rehabilitation sites would be governed as per the norms/orders issued by the State Government.

II. URBAN PACKAGE

For resettlement of urban population, including various offices, institutions and establishments getting displaced from the Tehri Town, a New Tehri Town has been developed at the selected site with all modern civic amenities and the new town would be the centre of the development and educational activities. Buildings have been constructed for Hospital, Schools and Colleges, the new Town Centre, Shopping Centres, Bus Stand, and Places of Worship etc.

The features of the Urban Rehabilitation Policy, updated as on 31.08.1995, are as under :

- i) Displaced entitled families of Tehri Town are given choice of being settled either at New Tehri Town, Dehradun, Rishikesh, or Hardwar where new colonies have been developed for this purpose.
- ii) Land owners, including Nazul landholders of the Tehri Town are given a residential plot of the size 60, 100, 150, 200, 250 & 300 sq. m. in proportion to their holding in the Old Tehri Town. Displaced families are given a plot of a size equal to or higher than the one which an oustee was having in the Old Tehri Town, restricted upto 300 sq. m.

- ii) For purposes of payment of compensation, the cost of land acquired from a person would be calculated at the rates decided by SLAO. For land upto 2 acres, if the cost of land acquired is more than the cost of the allotted land, he would be paid the difference in cost; if it is less, the difference in cost will not be recovered.

For portion of land above 2 acres, he would be given cash compensation calculated at the rates as decided/notified by SLAO.

- iii) In case of those who wish to purchase land themselves, reimbursement of cost of land upto Rs. 1 lakh is given on production of proof of purchase of two acres of land.
- iv) Those oustees who wish to opt for cash compensation, instead of allotment of land, cash compensation is given as assessed according to the Land Acquisition Act, plus 30% solacium on the cost of land, in addition to ex-gratia payment at the following rates :

	Ex-gratia Rs. (per acre)
— Irrigated land	12,000
— Class I (un-irrigated)	6,000
— Class II (un-irrigated)	4,000

This is subject to a minimum cash compensation being paid to the oustee, currently at Rs. 60,000 (in 1989-90 it was Rs. 40,000).

- v) The compensation for the acquired house is assessed at the PWD Schedule Rates prevailing at the time of acquisition. This value is depreciated according to life of the house. On it is added a Solacium equal to 30% of depreciated value of house. In addition, an ex-gratia payment is also given to the house owner equal to the amount of depreciation, subject to a maximum of Rs. 50,000. This is illustrated below :

— Cost of house as per PWD Schedule			X
— Depreciation for the life of house	(-)		Y
— Solacium	(+)	30% of X-Y	
— Ex-gratia payment	(+)		Z*
			(*equal to Y limited to Rs. 50,000)
— Total payment to the oustee :			(X-Y)+30% of X-Y+Z

From 27.09.1988, for houses constructed prior to 1978, a minimum of Rs. 20,000 is paid to each family even if the evaluated cost of the house, alongwith exgratia, works out to less than the above amount.

- vi) Rural families would be given on demand, subject to availability at the rehabilitation sites, a house plot equal to 200 sq. m. on payment of cost.
- vii) Allotment of admissible land to an entitled displaced person shall be made after publication of Gazette Notification under Section 6(1) of Land Acquisition Act,

viii) Shops have been constructed by THDC in the New Tehri Town and other rehabilitation sites. These are allotted, on payment of cost, to those oustees who were running shops in the Old Tehri Town as on 06.06.1985.

Open space or developed plot may be allotted to those oustees who were running business, such as Petrol Pump, Taal, Cinema Hall, small industries, and Hotels etc., prior to 06.06.1985 in Old Tehri Town, on payment of cost on the following rates :

Plot Size	For Land Owners	For Benap Owners
— Upto 150 sq. m.	Rs. 10 per sq. m.	Rs. 100 per sq. m.
— 151 sqm. to 200 sq. m.	Rs. 10 per sq. m. upto 150 sq. m. and Rs. 100 per sq. m. for additional area.	Rs. 100 per sq. m. upto 150 sq. m. and Rs. 150 per sq. m. for additional area.
— 201 sqm. to 250 sq. m.	For 200 sq. m. as mentioned above and for additional area Rs. 150 per sq. m.	For 200 sq. m. as mentioned above and Rs. 200 per sq. m. for additional area.
— 251 sqm. to 500 sq. m.	For 250 sq. m. as mentioned above and Rs. 200 per sq. m. for additional area.	For 250 sq. m. as mentioned above and Rs. 250 per sq. m. for additional area.
— 501 sq. m. and above	for 500 sq. m. as mentioned above and Rs. 250 per sq. m. for additional area.	For 500 sq. m. as mentioned above and Rs. 300 per sq. m. for additional area.

ix) Policy regarding construction of buildings for Govt./Semi Govt. Offices, Banks and Institutional buildings in New Tehri Town, is as under :-

- a) For all existing State Govt. offices in Old Tehri Town, buildings are constructed as per G.O. No. C-2299/H-639-61 dated 08.06.1965 issued by the GOUP. Cost of building equivalent to the existing plinth area in Old Tehri Town shall be borne by Tehri Project and cost for extra space shall be borne by the respective Departments. The same policy shall be applicable for Hospital, Jail, Schools and Colleges.
- b) Residences for all State Govt. employees working in the existing offices in Old Tehri Town as on the cut-off-date are constructed in the NTT by the Project. While the cost of residences available with these offices in Old Tehri Town would be borne by THDC, the cost of additional residences shall be borne by the respective Departments.
- c) For construction of offices and residential buildings for Central Govt. establishments, Banks and private institutions, land has been allotted at NTT, except for the Post-Office for which the building has been constructed by Tehri Project in lieu of earlier building at Old Tehri Town.

iii) Each entitled displaced family would be given not more than one residential plot at a newly developed rehabilitation colony, regardless of the number of houses / plots he may be owning in the Old Tehri Town.

iv) The cost to be charged for the plots from the land owners/house owners is very nominal on the following rates :

PLOT SIZE	RATE
i) upto 150 sq. m.	Rs. 5/-per sq. m.
ii) 151 sq. m. to 200 sq. m.	Rs. 5/- upto 150 sq. m. and Rs. 50/- per sq. m. for additional area.
iii) 201 sq. m. to 250 sq. m.	For 200 sq. m. area as mentioned in (ii) above and for additional area Rs. 100/- per sq. m..
iv) 251 sq. m. to 300 sq. m.	For 250 sq. m. area as mentioned in (iii) above and for additional area Rs. 150/- per sq. m.

v) Tenants living in Old Tehri Town as on 06.06.1985 would be entitled to get flats/group houses on payment of cost. This would not, however, include Government, Semi-Government, and Institutional employees. Contractors and their employees associated with Tehri Project would also not be entitled for allotment of flats.

vi) Benap house owners who had constructed their houses before 06.06.1985 are allotted either constructed houses/flats, or plots (if available). In case a plot is given, it would be provided to a benap house owner upto a maximum size of 100 sq. m. ; those having house in the Old Tehri Town on a plot of upto 60 sq. m. are given plot size of 60 sq. mtr. and those having constructed house in the Old Tehri Town on more than 60 sq. mtr. area are given plot of 100 sq. m., at the rate of Rs. 50 per sq. m.

The normal policy, however, in case of benap house owners is to provide flats/constructed houses on payment of cost.

vii) The cost of house property acquired from an oustee at the Old Tehri Town is evaluated at the PWD rates applicable for the town at the time of acquisition. As indicated under Rural Rehabilitation, calculated cost is depreciated according to life of the house, and a solacium equal to 30% of depreciated cost is paid to the owner as an additional amount. Further, an ex-gratia payment is made to the house owner equal to the amount of depreciation subject to a maximum of Rs. 50,000 (Example for calculation is already given under Rural Rehabilitation Policy).

From 28.09.1988, for houses constructed prior to 1978, a minimum of Rs. 20,000 was paid to each family even if the evaluated cost of the house structure was less than the above amount. The minimum amount of compensation was enhanced to Rs. 40,000 from 1991-92 after the Project was taken over by THDC.

III. FRESH IMPROVEMENT MEASURES

With a view to improve the existing compensation and rehabilitation package, as outlined above, the following new measures have been approved by the THDC for implementation with effect from 01.09.1995 :

RURAL REHABILITATION

i) **Minimum Cash Compensation**

The minimum amount of cash compensation in lieu of land upto 2 acres, admissible to those oustees who opt to draw cash compensation instead of land allotment, would be increased from Rs. 60,000 to Rs. 2.00 lakh per oustee family.

Land acquired from him upto 2 acres will be evaluated for compensation as per the norms indicated in the Policy and in case the amount of compensation works out to less than Rs. 2 lakh, he would be given the minimum of Rs. 2 lakh. In case, however, the compensation admissible works out to more than Rs. 2 lakh, he would be paid the actual admissible amount. Compensation for land more than 2 acres would be paid in cash calculated as per the normal rates.

ii) **Compensation for House Structures**

The minimum amount of compensation payable for house structures is raised from Rs. 20,000 to Rs. 40,000.

iii) **Allotment of Land Adjoining Municipal Limits of Hardwar**

As in case of Dehradun, 1/2 acre land could also be allotted to oustees, at their option, adjoining the municipal limits of Hardwar city, subject to availability.

iv) **Incentive Grant**

In addition to the normal admissible cash grant of Rs. 5,000 given for shifting of household effects, an additional incentive grant of Rs. 15,000 per displaced family would be given to those who shift to the new rehabilitation sites by end of March, 1996, or within six months from the date of award of compensation for land, whichever is later, after handing over their acquired property to the THDC.

v) **Stamp Duty**

Stamp Duty payable, if any, by the oustees for registration of allotted land/plots in favour of them would be borne by THDC. Registration charges, if any, will however be paid by the oustees themselves.

vi) **Cash Grant for Seeds/Fertilizers**

The amount of grant admissible for purchase of seeds and fertilizers is further increased to Rs. 4,000 as against Rs. 2,000 earlier admissible.

vii) **Interest Subsidy on Loan**

The THDC would subsidise interest upto 50% of the normal applicable rate on loan of upto Rs. 1 lakh availed by an oustee, from the Public Sector Financial Institution/Bank, for construction of his house on the allotted plot in the resettlement colony. No subsidy would, however, be admissible on additional interest that may become payable by an oustee due to defaults in repayments, as per terms agreed by him with the loaning Institution.

- d) Stadium, Town-hall, Parks, Bus-stand, and other public utilities in the NTT are constructed at the cost of the Project.
- e) For Semi-Govt. Offices, like, Jal Nigam, UPSEB, and Jal Sansthan, same policy as applicable for State Govt. Offices will be followed. However, extra office space or additional residences shall be constructed for them after getting the necessary cost in advance from the concerned Offices/Undertakings.
- f) Religious places would also be constructed by the Project to the extent possible, keeping in view requirements of the affected population, excepting where compensation for the existing structures of places of worship in Old Tehri Town has been taken from the THDC.
- x) Displaced persons of the Tehri Town are also given cash displacement grants (enhanced from time to time) at the following rates :

(In Rupees)

Items	Those who settle at NTT		Those who shift to other places	
	As on 1989-90	From 1991-92	As on 1989-90	From 1991-92
— For transportation of house-hold effects	1000	2000	1500	3000
— For transportation of commercial goods				
i) Upto one truck load (75 quintals)	500	1000	500	1000
ii) For more than one truck load	750	1500	750	1500

- xii) For employment in the THDC, preference is given to the dependents of the displaced families, subject to vacancies and their meeting the necessary laid down qualifications and experience requirements.
- xiii) Those oustees whose land comes under the notified Tehri Nagar Palika area and which is recorded as agricultural land in the revenue records, would be entitled to rehabilitation benefit either in rural rehabilitation or in urban rehabilitation as per their choice. For the same land, two facilities would not be admissible.
- All tenants and shopkeepers who were living in the Nagar Palika area prior to 06.06.1985 would also be treated at par with the tenants and shopkeepers of the Old Tehri Town.
- xiii) To a shopkeeper, compensation will be paid for 'Saaj-Sajja' as per valuation done by THDC provided owner of the shop has not already taken compensation for these items. In addition, he would be allowed to carry these items free of cost.

iii) **Incentive Grant**

To those entitled families who hand over their acquired property to THDC and shift to the new allotted sites by the end of March, 1996 or within a period of six months from the date of allotment of plot/flat/shop, whichever is later, an incentive grant of Rs. 12,000 per family would be paid.

iv) **Subsidised Cost of Flat**

In calculating cost of group houses/flats/shops to be recovered from the entitled oustees, site development cost would not be charged (this will not be applicable to the group houses/flats constructed by THDC for the Govt. Offices/Institutions).

v) **Hire Purchase Scheme for Flats/Group Houses**

Tenants/Banar house owners who are allotted constructed group houses/flats on payment of cost would be extended by THDC the facility of payment on the following easier terms under the 'Hire Purchase Scheme'

- 30% of cost of flat would be payable as cash-down by the concerned person before taking possession.
- Remaining 70% of the cost would be recovered in installments extended over a maximum period of 20 years (240 months) as per the conditions of Hire-Purchase Scheme ; the oustee would be free to opt for lower repayment period.
- A subsidised rate of interest of 8% per annum would be charged and repayment would be in Equated Monthly Instalments on monthly rest basis.
- In case, however, of default in payment of due instalment over a continuous period of 3 months, the interest of 16% would be payable on the defaulted amount over the entire period of default.
- As security for loan, the allotted flat/group house shall remain property of the THDC, who shall have first right on the property till full repayment of principal amount and interest has been made to THDC.
- In case an oustee chooses to pay the entire chargeable cost in lump-sum at the time of taking possession, he would be allowed a rebate of 20% on the portion of cost payable in instalments (i.e., on 70% of the cost of flat).

vi) **Stamp Duty**

Stamp duty payable by the oustees for registration of Conveyance Deeds for the allotted land/plots, flats etc. in favour of them would be borne by the THDC. Registration charge, if any, will however be paid by the oustees themselves.

viii) **Partially Affected Families**

In addition to the cash compensation for land coming under submergence or allotment of alternate land taken over from fully affected families, Partially Affected Families may further be given submerged reservoir land on patta, on a nominal rent, during the low reservoir level period, for temporary cultivation.

- ix) Villages where 75% or more families are treated as fully affected, the remaining partially affected families would also be treated as fully affected subject to the condition that they would be entitled to payment of cash compensation for their entire holding as per norms applicable for fully affected families and would not be entitled for allotment of land.
- x) Such Partially Affected Families, as are given cash compensation for their entire land as for fully affected families, would also be entitled to get other compensations as per settled norms viz., compensation for house structures, shifting and incentive grant, cash for seeds and fertilizers.

URBAN REHABILITATION

- i) **Construction of houses for those who received compensation limited upto minimum admissible amount**

In case of those owners who have received compensation amount upto only Rs. 40,000 or less for their old structures, THDC would construct one room houses (Plinth Area of 23.75 sq. m. approx including Kitchen, Bath/Toilet) on plots allotted to the concerned oustees, at the THDC's cost on the condition that the compensation received to be received by them is returned/deposited with the Corporation for partially meeting the construction cost.

In case of those house owners who wish to undertake themselves the construction of one room house on their plot, instead of getting it done through THDC, they would be allowed payment of an amount equal to the difference in compensation already paid to the concerned person and Rs. 80,000 towards cost of construction. The amount thus payable would be given in instalments connected with the stage of construction, as under :

— Upto plinth	-	NIL
— After laying of roof	-	50%
— On completion	-	30%
— On shifting	-	20%

- ii) **One-room Flats for EWS**

For allotment to the economically weaker landless oustees (identified as per the Survey of June, 1985) one room flats, upto a maximum of 100 numbers, would be constructed by the THDC at its cost and given to the EWS landless oustees free of cost.

Item	In Case loan is availed both from THDC & FI	In Case entire loan is availed from FI only
— Construction of house on plot upto 100 sq. m.	Rs. 1 lakh	Rs. 2 lakh.
— Construction of house on a plot above 100 sq. m. and upto 200 sq. m.	Rs. 1.5 lakh	Rs. 2.5 lakh
— Construction of house on a plot of above 200 sq. m. size.	Rs. 2 lakh	Rs. 3 lakh

No interest subsidy would be admissible on additional interest that may become payable on account of default in repayment to the FI/Bank as per the agreed terms of loan.

x) **Cash in Lieu of Allotment of Plot/Flat/Shop**

The oustees would have an option to get cash payment in lieu of allotment of a residential plot/flat/shop as per their entitlement. The cash in lieu of allotment would be admissible as under :

Plots	(Rs. in lakh)
— 60 sq. m.	1.10
— 100 sq. m.	1.25
— 150 sq. m.	1.75
— 200 sq. m.	2.00
— 250 sq. m.	2.50
— 300 sq. m.	3.00
Flats	1.00
Shops	
— Shop upto 20 sq. m.	0.40
— Shop above 20 sq. m.	0.60
— Others	0.25

Even on accepting the option of cash in lieu of allotment, as above, the oustee would be entitled to get other rehabilitation grants as admissible to him under the policy. However, he would unconditionally surrender his right for getting residential plot, flat, or shop, as the case may be.

xi) **Development Cost at Dehradun**

For construction of houses on plots allotted to the oustees at Nehrupuram (Dehradun), it has been confirmed by MDDA that development charge will not be levied by them from the oustees while approving construction plans.

vii) **Increase In Cash Grants**

The admissible cash grants have been further increased as under :

(In Rupees)

Item	To those who settle at NTT	To those who shift to other places
— For transportation of House-hold effects	3,000	4,000
— For transportation of Commercial goods :		
- Upto one truck load (75 Quintal)	1,500	1,500
- For more than one truck load	2,000	2,000

viii) **Loan to Plot Allottees by THDC**

Loan upto Rs. 1 lakh each would be granted by THDC from its own funds to the urban land/house owners, who are allotted plots for construction of residential houses in the new resettlement colonies, to enable them to undertake construction.

The amount would be disbursed in instalments related to the stage of construction. The loan amount would be repayable in a maximum of 240 monthly instalments with interest at the subsidised rate of 8% per annum, in Equated Monthly Instalments on monthly rests basis. Default in repayment of due instalment over a period of 3 months would attract higher interest rate of 16% on the defaulted amount for the entire period of default. As security for loan, the allotted plot/house structure shall be mortgaged to THDC by the loanee.

ix) **Loans from Housing FIs/Banks**

The allottees shall be free to avail loans, separately or in conjunction with loan granted by THDC, from the Public Sector Housing Financial Institutions/Banks to enable them to undertake construction of a residential house on the allotted plot. For this purpose, THDC would be willing to allow the right of first mortgage in favour of the concerned FI/Bank in case loans are availed both from the THDC and FI/Bank.

The THDC would also subsidise interest charged by the Public Sector FI/Bank on the loan amount granted to an allottee for construction of house on the allotted plot, upto the extent of 50% of normal applicable interest rate. The limits of loan amount on which 50% interest subsidy would be admissible are as under :

RURAL REHABILITATION

S. No.	Village Name	Area (In Acres)	No. of Families likely to be affected
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FIRST PHASE : DUE TO CONSTRUCTION OF COFFER DAM**A) Full Submergence**

1.	Jogiyada	27.00	70
2.	Khand (Athur)	171.30	195
3.	Kandal	81.40	103
4.	Sunargaon	94.10	194
5.	Bagi (Athur)	47.70	76
6.	Pajaun	23.60	70
7.	Padiyar Goan.	372.80	202
8.	Khasir	11.50	22
9.	Rampur	79.11	69
10.	Dob Lamoli	77.10	132
11.	Punsara	47.21	42
12.	Hatwal Gaon	54.61	39
13.	Bayali	23.015	12
14.	Goran	84.3997	85
15.	Godi Sirai	272.833	397

B) Due to Construction of Project Colonies and Project work & NTT

16.	Koti	117.20	161
17.	Panchkot	12.65	23
18.	Balsi	13.60	13

xii) Flat Allotment to Persons having House on Father's land

Those affected persons who had constructed houses on their father's land before the cut-off-date of 06.06.1985 and had taken compensation, would be allowed to have a built-up flat on payment of cost as applicable to tenants.

xiii) Depot for Construction Material

A Depot would be set up at NTT for providing construction materials like cement, steel and CC blocks to the oustees at actual cost, without Sales Tax, for construction of their houses; Sales Tax, if applicable, would be paid by THDC.

The above announced additional benefits / improvements in the Rehabilitation Package would be applicable with affect from 01.09.1995. Cases already settled in the past either by the State Government or the THDC would not be reopened.

It is the earnest desire of THDC to adequately resettle the population affected by the Tehri Dam Project in their new resettlement colonies and to attend to their genuine difficulties coming in the way of their shifting. The above additional measures have been devised in that context and it is hoped that the oustee families would fully cooperate with the Corporation in completing this difficult task and to successfully implement this important Project.

42.	Dharwalgaon	2.37	10
43.	Chham	155.49	56
44.	Bandrakoti	147.20	296
45.	Khandbirkot	110.848	110
46.	Bhanger	53.42	19
47.	Sarot	23.037	52
48.	Doman	34.754	107
49.	Nakot	19.435	41
50.	Jakhiagga/Jyudasu	1.955	83
51.	Sillá-appu	3.86	67
52.	Saur-appu	27.58	67
53.	Bhanetisera	55.15	442
54.	Syasu	90.45	73
55.	Chowdhar	6.77	83
56.	Motna	27.78	300
57.	Gawar	3.47	158
58.	Okhla	2.084	17
59.	Chathi	5.18	47
60.	Rolakot	62.148	168
61.	Kangashali	114.168	53
62.	Ratwari	4.20	08
63.	Chopra	2.23	26
64.	Hatiyari	1.494	51
65.	Chinyalisaur	1.083	276
66.	Sunargaon Mai Tulyada	0.966	108
67.	Kumrada	2.892	103

19.	Thapla	33.65	52
20.	Gajna	17.90	37
21.	Mokri	19.25	14
22.	Inia	20.00	06
23.	Dibnu	50.80	31
24.	Kathia Gaon	80.37	32
25.	Bagi (Sarjuala)	32.495	100
26.	Kulna	149.00	89
27.	Moldhar	105.00	42
28.	Baurari	200.00	83

SECOND PHASE : DUE TO MAIN DAM

A) Fully Affected

29.	Bilyasaur	97.50	112
30.	Chaksaur	18.5733	06
31.	maladewai	139.128	195
32.	Biryani	38.5015	30
33.	Dewal	133.1528	105
34.	Joglyada (Uttar kashi)	44.613	45
35.	Badkot	116.39	100

B) Partially Affected

36.	Tiradgaon	28.60	50
37.	Ramgaon	1.95	37
38.	Plas	31.25	79
39.	Dobra	61.55	61
40.	Talla Appu	47.522	282
41.	Bhalgavana	82.148	175

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95.	Pipola Dugamdhar	30.02	96
96.	Chol Gaon	28.88	98
97.	Nunwa	12.80	52
98.	Baur	10.37	42
99.	Chakrusera	3.278	04
100.	Nandgaon	40.97	24
101.	Bartyakhund	6.46	02
102.	Asena - I	7.33	
	Asena - II	36.67	129
103.	Padagali	21.87	149
104.	Pilkhi	34.55	154
105.	Kailbagi	28.39	58
106.	Sarfal	6.60	21
107.	Ramolgaon	30.00	70
108.	Gojyanã	18.80	70
109.	Gadoli	29.88	70

68.	Badimani	-	45
69.	Chotimani	1.67	25
70.	Baldogi	1.08	66
71.	Hatiyara	0.104	39
72.	Nairi	4.447	17
73.	Nagnibadi	0.033	43
74.	Badethi	-	62
75.	Bhaldgaon	0.354	31
76.	Manjoli	7.512	49
77.	Badhangaon	72.00	95
78.	Gailadi	10.80	10
79.	Jangi	5.98	05
80.	Bhaiga	2.85	05
81.	Nagni Chothi	8.70	20
82.	Jaspur Madhya Chak	12.52	25
83.	Ojha Nataur	3.84	10
84.	Timli Khal	5.36	20
85.	Kandi	5.99	05
86.	Nargarh	2.66	11
87.	Nyuda	4.90	28
88.	Ghonti Dugman Dhar	44.02	61
89.	Chahgadolia	3.73	21
90.	Bhatkanda	8.78	37
91.	Pipola Khas	36.83	129
92.	Uthar	47.52	44
93.	Khand-dharmadai	172.766	289
94.	Sandna	13.10	164

	ADMISSIBLE AS ON 1989-90	ADMISSIBLE FROM 1991-92	ADMISSIBLE FROM 01.09.1995
<u>URBAN REHABILITATION</u>			
1. Minimum amount of compensation payable for the acquired house	20,000	40,000	40,000
2. Grant amount for transportation of household effects			
- For settling in NTT	1,000	2,000	3,000
- For settling at places other than NTT	1,500	3,000	4,000
3. Grant for transportation of commercial goods			
- Upto one truck load (75 quintals)	500	1,000	1,500.
- More than one truck load	750	1,500	2,000
4. Incentive Grant for shifting within the fixed notified period	--	--	12,000
5. Construction of one room house (about 24 sq.mtr. plinth) by THDC at its own cost on plots allotted to oustees who have been paid compensation upto Rs.40,000/- (subject to refund/deposit of compensation amount already paid by THDC)	--	--	New measure
6. Construction of 100 one-room flats by THDC at NTT for free allotment to EWS landless oustees	--	--	New measure (cost about Rs.1,00,000/- per oustee Family)
7. Site development cost to be excluded from the recoverable cost of Flats/group houses	--	--	New measure

IMPROVEMENTS IN REHABILITATION PACKAGE AS ON 01.09.1995

	ADMISSIBLE AS ON 1989-90	ADMISSIBLE FROM 1991-92	ADMISSIBLE FROM 01.09.1995
RURAL REHABILITATION			
1. Minimum amount admissible to oustees opting for cash compensation in lieu of land allotment	40,000	60,000	2,00,000
2. Minimum compensation for acquired house	20,000	20,000	40,000
	(for houses constructed prior to 1978)		
3. Interest subsidy of 50% on loan upto Rs.1 lakh availed from FI/Bank for construction of house	--	--	New measure
4. Grant amount for shifting of household effects	3,000	5,000	5,000 15,000 ----- 20,000 -----
5. Grant for purchase of seeds and fertilizers	1,000	2,000	4,000
6. Stamp Duty payable on execution of Conveyance Deeds for allotted land to the affected families			N New measure To be borne by THDC
7. Partially Affected Families may be given submerged land on patta on nominal rent during low reservoir level periods, for cultivation	--	--	New Step
8. Villages where 75% or more families are fully affected, remaining partially affected families would also be treated as fully affected subject to payment of cash compensation	--	--	New Step
(Additional 15,000/- to be given as an Incentive Grant for shifting within the notified period)			

	ADMISSIBLE AS ON 1989-90	ADMISSIBLE FROM 1991-1992	ADMISSIBLE FROM 01.09.1995
8. Hire Purchase Scheme from THDC for flats/group houses	--	--	New Measure
- Cash Down : 30%			
- Instalments : 70% (payable in 20 years)			
- Interest rate 8% p.a.			
20% rebate on 70% cost of flat if entire amount is paid as cash down			
9. Grant of loan of upto Rs.1 lakh to each land-owner oustee by THDC for construction of house on allotted plot at subsidised interest of 8% p.a. recoverable in 20 years.	--	--	New Measure
10. Grant of interest subsidy of 50% on the applicable interest rate charged by FI/Bank on loan granted to land-owner oustees, limited to the prescribed amount, for construction of house on allotted plot.	--	--	New Measure
11. Cash payment option to an oustee in lieu of allotment of plot/flat/shop	--	--	New Measure
12. Stamp Duty payable on registration of Conveyance Deeds to the oustees to be borne by THDC	--	--	New Measure
13. Allotment at ready built flats to persons who had constructed houses on their parents land before 06.06.1985, on payment of cost as applicable for tenants	--	--	New Measure
14. Depot for issue of construction materials to oustees at actual cost Sales Tax to be borne by THDC.	--	--	New Measure

FACILITIES IN RESETTLEMENTS

ANNEX.-II.2

SL. NO.	ITEM	UNIT	BANJARWALA	RAIWALA, JOORA PRATEET NAGAR	PATRI BLOCK	PATRI ROU	ATTATARI	BANJARWALA	PARVAL	DDIRANYS	ROHETS
1.	IRRIGATION & DRINKING WATER FACILITIES										
i)	TUBE-WELLS	NO.	08*	01	04*	02	-	01	-	01	
ii)	IRRIGATION GULS FOR T.V.S.A CANAL	KMS.	44	09*	16	10	-	04	1.8	-	
iii)	CANAL SCHEME	KMS.	-	-	-	-	-	-	-	-	
iv)	LIFT CANAL SCHEME	NO.	-	01*	-	-	-	-	-	-	
2.	ELECTRIFICATION	KMS.	22*	06*	07*	07*	3.20	4.8	0.5	4.3	* Facilities handed over to concerned deptt.
3.	ROADS & DRAINS (Biharwale)	KMS.	28	07	25	06	4.90	12	3.0	3.0	
4.	SCHOOLS										
i)	PRIMARY SCHOOL	NO.	04*	01*	01*	01	-	01	-	-	1 of tube wells handed over to concerned deptt.
ii)	JUNIOR HIGH SCHOOL	NO.	01*	-	-	01	-	-	-	-	
iii)	HIGH SCHOOL	NO.	01	-	01	-	-	-	-	-	
5.	PANCHAIAT OFFICE	NO.	03	02*	01	-	01	01	01	01	
6.	TEMPLE	NO.	03	01	02	01	-	01	01	-	\$ of purchase right handed over to concerned deptt.
7.	MEDICAL FACILITIES										
i)	PRIMARY HEALTH CENTRE	NO.	01*	01	01*	01	-	01	-	-	
ii)	MAIN HOSPITAL	NO.	-	-	-	-	-	-	-	-	
9.	SEED STORE	NO.	01*	-	01*	-	-	-	-	-	
9.	VETERINARY HOSPITAL	NO.	01*	-	01*	01	-	-	-	-	
10.	POST OFFICE	NO.	01*	-	01	01	-	-	-	-	

11.	SHOPPING FACILITIES																			
i)	SHOPPING COMPLEX	NO.	01	-	-	02	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ii)	SHOPS (In above)	NO.	01	-	-	08	-	-	-	-	02	-	-	-	-	-	-	-	-	-
12.	SECURITY																			
i)	POLICE CHAWKI	NO.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ii)	POLICE STATION	NO.	-	-	-	01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.	COMMUNITY HALL	NO.	01	-	-	01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.	DORMITARIES	NO.	-	01	-	05	-	01	-	-	-	-	-	-	-	-	-	-	-	-
15.	BARAT GHAR	NO.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.	BUS STAND	NO.	-	-	-	02	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.	KANJI HOUSE	NO.	01	-	-	01	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TEHRI HYDRO-ELECTRIC PROJECT
PUBLIC HEARINGS ON REHABILITATION AND
ENVIRONMENT

DECEMBER 19-23, 1996

Raman Mehta
Vishaish Uppal

REPORT SUBMITTED TO
THE EXPERT COMMITTEE ON REHABILITATION AND
ENVIRONMENTAL ASPECTS

JANUARY, 1997

INTRODUCTION

We were asked by some of the members of the Expert Committee on Rehabilitation and Environmental Aspects, Tehri Hydro-Electrical Project, to accompany the committee as independent rapporteurs on its field tour of the Tehri Dam Submergence Zone, as well as a few resettlement colonies.

This report is an outcome of the views expressed by the people to the committee about the various issues relating to the Tehri Hydro-Electric Project's rehabilitation and environmental aspects. While the people mostly communicated with the committee in Hindi, we have translated what was said into English for the sake of convenience of the members of the committee. During the public hearings in Chamba, Old Tehri Town and villages in the submergence zone of the Bhagirathi and Bhilangana valleys, people's statements were recorded on the basis of codes which were developed as we went along. These coded statements have been reproduced, and ascribed to each person who made them. Interviews were held separately with people of the resettled colonies, and have also been translated and reproduced. These, however, were not coded at the time of data collection, but after the transcription in English was completed. For the sake of convenience, we have also given an executive summary of the detailed report.

For the sake of brevity, we have also not included any statements made by people which were unrelated to rehabilitation, environment, or the functioning of the Tehri Hydro-electric Development Corporation regarding these two issues.

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EXECUTIVE SUMMARY

The committee to review the rehabilitation and environment related issues arising out of the construction of Tehri Dam travelled extensively in the submergence zone and listened to people's views in a series of meetings. These meetings were very well attended and over 115 people spoke to the committee. Many of them also gave written representations, which were handed over to the Secretary of the Committee. The oral statements have been recorded as accurately as possible by us, and are reproduced in this report. These statements have also been coded and classified and are given at Annexure - I.

Some of the most frequently occurring statements made by the people in the submergence zone of the Tehri Dam are given in Figure - I. Mostly, the people were not happy with the relocation package and wanted the committee to recommend that it should be substantially improved. Some of the specific suggestions and demands made by the people are given at Annexure - II.

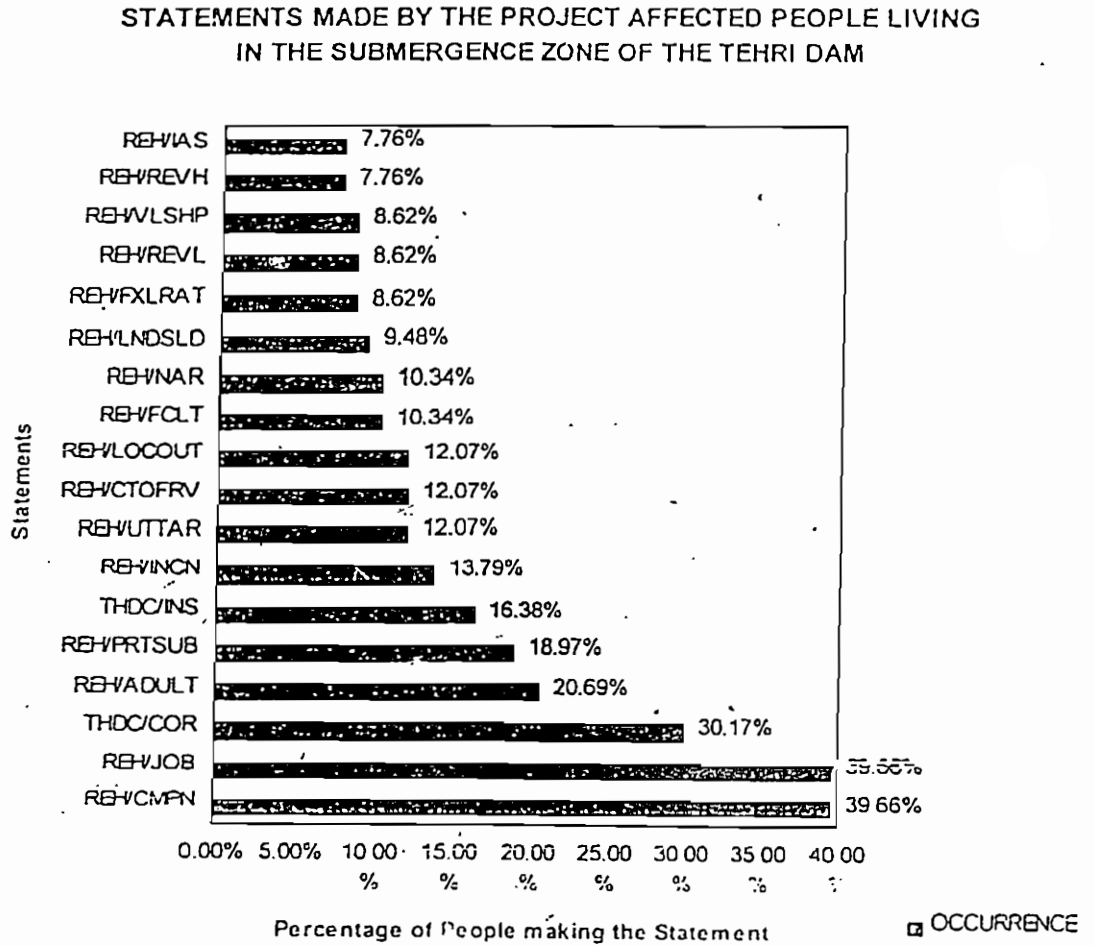
The local people were also very unhappy with the performance of the Tehri Hydro Development Corporation (THDC). Among the most frequently made statements by the people was that THDC is a corrupt organisation. Specific examples of corruption were also given. Many local people also said that the relocation issue should have been handled more sensitively by the THDC.

Other statements made by the people which are significant but were not made by too many people are the following:

ENV/CATINC	The area of the catchment should be increased.
ENV/CATPEO	Planting of trees in the catchment should be done through local people, especially "Mahila Mandals".
ENV/CMPAFF	Compensatory afforestation should not be done in the plains in places like Jhansi, but in the hills
ENV/DUST	Because of Dam construction, there is a lot of dust pollution in Old Tehri Town, and people are having health problems (eg. tuberculosis), because of it.
REH/COMM	Local people and their representatives should be members of the THDC committee which looks at issues related to relocation.
REH/IDENTOST	The THDC has still not been able to identify who is a project affected person and who is not.
REH/RIGHT	Villagers have rights for water, fodder, fuel etc. Presently all these commodities are free. When people get relocated, either these rights should be compensated in cash, or provided at the relocation sites.
THDC/SHFT	The office of the THDC should be located in Old Tehri Town and not in Delhi or Bhagirathi Puram.

The committee also visited some of the relocation sites and met the people who have already been relocated. Their statements have also been coded and are given at Annexure - III. These people also had a long list of complaints. The frequency of the statements made by them can be judged from the graph given in figure - II.

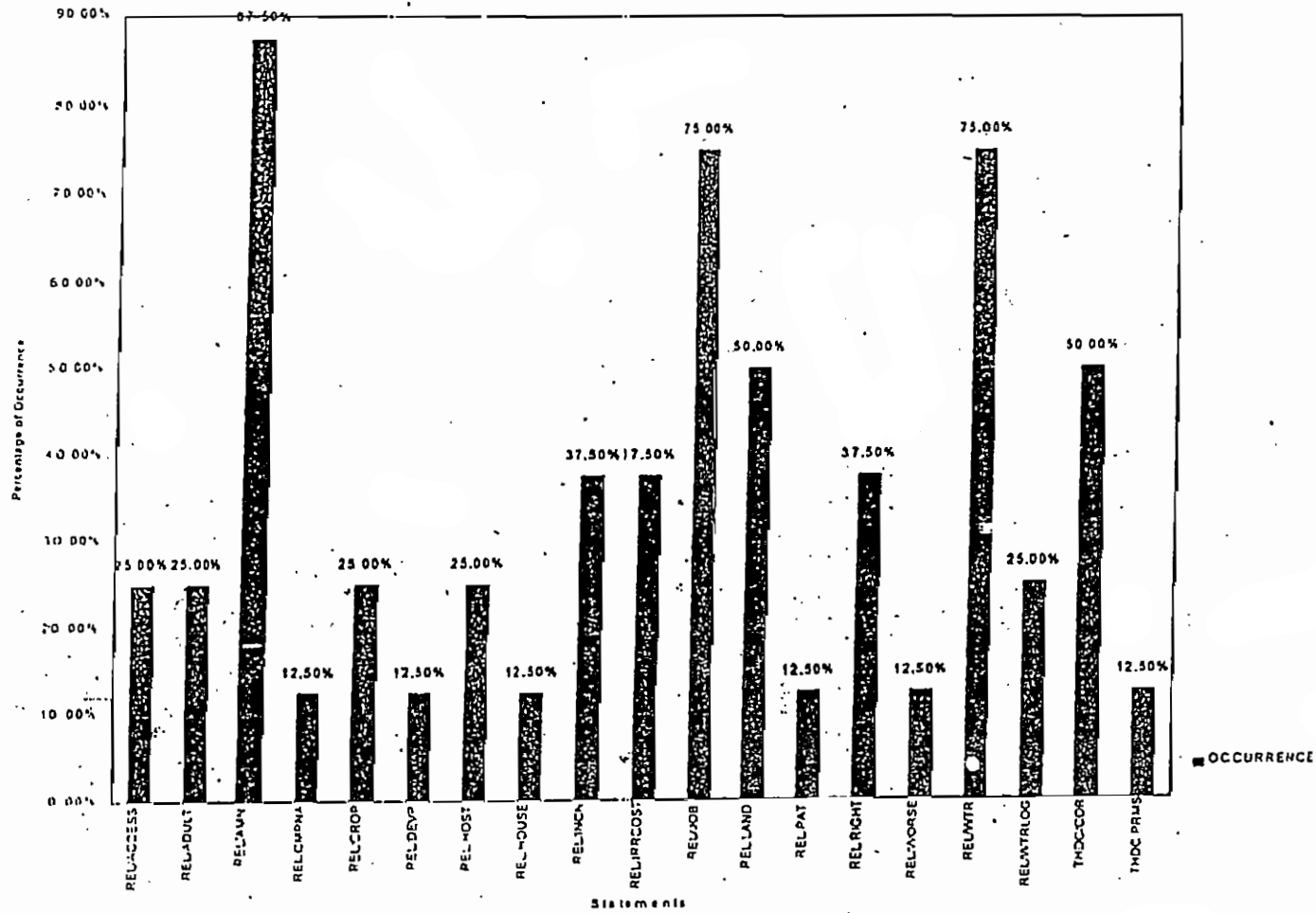
Figure - I



Detailed Statements are given at Annexure I, page 62.

Figure - II

FREQUENCY OF OCCURRENCE OF STATEMENTS MADE BY THE RESETTLED PEOPLE



**TRANSCRIPTION OF THE DISCUSSIONS OF THE COMMITTEE WITH THE
PROJECT AFFECTED PEOPLE OF TEHRI DAM IN CHAMBA, OLD TEHRI
TOWN, AND THE VILLAGES IN THE SUBMERGENCE ZONE**

CHAMBA REST HOUSE
19-12-1996
3.00 PM

J.P. NAUTIYAL

- | | |
|-------------|---|
| ENV/CAT | The catchment area is not being planted properly. All the trees which were planted have died. |
| ENV/CATPEO | Planting of trees in the catchment should be done through local people, especially "Mahila Mandals". |
| REH/UTTAR | The land for relocation should be found within the Uttarakhand region, and not outside. |
| ENV/CATINC | The area of the catchment should be increased. |
| ENV/LCLSP | Local species of trees should be planted in the catchment, and not exotics |
| REH/FCLT | The rehabilitation site should be developed with facilities like irrigation, drinking water, electricity, community centres, temples etc. |
| REH/CMPN | The compensation package is inadequate. It should be enhanced. |
| REH/DISTNTT | The District H.Q. should not be in Narendranagar but in NTT. |

CHAMBA REST HOUSE
19-12-1996
3.10 PM

CAPTAIN VIRENDER

- | | |
|------------|--|
| ENV/CAT | The catchment area is not being planted properly. All the trees which were planted have died. |
| REH/CMPN | The compensation package is inadequate. It should be enhanced. |
| ENV/CATPEO | Planting of trees in the catchment should be done through local people, especially "Mahila Mandals". |
| REH/UTTAR | The land for relocation should be found within the Uttarakhand region, and not outside |

CHAMBA REST HOUSE
19-12-1996
3.15 PM

JAI SINGH NEGI (RESIDENT OF VILLAGE DIBNU/BAGI)

REH/CMPN The compensation package is inadequate. It should be enhanced.
REH/HLFLND We still have not been given possession of the land which was allotted to us.
REH/HLFCMP The full compensation for homes and other assets has not been paid.
REH/ADULT Each adult member (18 years and over) of a family should be separately rehabilitated.
REH/PAT "Pattas" for the land which has been allotted to the project affected people have not been given.
REH/REVL The rates fixed for acquisition of land need to be revised, as they are outdated.
THDC/INS The THDC officials are insensitive to the project affected people, and are never available.
REH/LOCOUT While the local people have not yet been relocated, the outsiders, even if they have settled in Tehri after 1985, have been given all the facilities.
REH/NCMPN84 We have become landless since 1984 as our land was acquired. We have not got "pattas" for the land given to us in Pathri.
REH/LNDRTRN Land of our village was acquired for a road which has not been constructed. If this land is not needed, it should be given back to the villagers who are willing to pay back the amount they had received in compensation from the Government.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (GROUND FLOOR)
19-12-1996
5.00 PM

MAHANI NEGI. SOCIAL WORKER AND REPORTER

REH/INCN There is an inconsistency for fixing rates for land, homes, assets, within and among villages as well as in Old Tehri Town for acquisition.
THDC/GOVTOFIC While several Government Offices have been shifted to New Tehri Town, the residences are still in Old Tehri Town. This is leading to a lot of hardship.
REH/NTT The New Tehri Town is not a nice place. It is at a very high altitude, and it is very cold there. It also has a water shortage problem.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (GROUND FLOOR)

19-12-1996

5.02 PM

LEELA SAJWAN, PUNARWAS SANGHARSH SAMITI

- REH/LOGOUT While the local people have not yet been relocated, the outsiders, even if they have settled in Tehri after 1985, have been given all the facilities.
- REH/INCN There is an inconsistency for fixing rates for land, homes, assets, within and among villages as well as in Old Tehri Town for acquisition.
- REH/CMPN The compensation package is inadequate. It should be enhanced.
- REH/ADULT Each adult member (18 years and over) of a family should be separately rehabilitated.
- REH/JOB One member of each family should be given employment as per the G.O.
- REH/OWNTEN The original inhabitants/owners have not been compensated properly, while the tenants/outside/encroachers have been compensated fully.
- REH/CTOFRV The cut-off date for identification of the project affected persons should be revised.
- ENV/DUST Because of Dam construction, there is a lot of dust pollution in Old Tehri Town, and people are having health problems (eg. tuberculosis), because of it.
- THDC/GOVTOFIC While several Government Offices have been shifted to New Tehri Town, the residences are still in Old Tehri Town. This is leading to a lot of hardship.
- REH/SCHL The schools of Old Tehri Town should be shifted to New Tehri Town only after all rehabilitation is completed.
- REH/PNSN Retired government officials and other pensioners should also be rehabilitated.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (GROUND FLOOR)

19-12-1996

5.05 PM

USHA NEGI, MAHILA SANGHARSH SAMITI

- ENV/DUST Because of Dam construction, there is a lot of dust pollution in Old Tehri Town, and people are having health problems (eg. tuberculosis), because of it.
- ENV/FORRES The forest mafia, in the garb of clearing the submergence zone, is taking away all the resources of the region. There is an acute shortage of fodder, fuel etc. Valuable herbs found in the forest are disappearing. The worst sufferers of all this are women

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (GROUND FLOOR)

19-12-1996

5.07 PM

PREMA RAWAT, MAHILA SANGHARSH SAMITI

- ENV/CATPEO Planting of trees in the catchment should be done through local people, especially "Mahila Mandals"
- REH/CMPN The compensation package is inadequate. It should be enhanced.
- REH/JOB One member of each family should be given employment as per the G.O.
- THDC/COR The THDC is a corrupt organisation

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (GROUND FLOOR)

19-12-1996

5.10 PM

AMARNATHI (CAME FROM PAKISTAN, WEST PUNJAB, IN 1947)

- REH/SHPIIND A 60 sq m plot is not adequate for a shop/house. It should be bigger.
- REH/SHPLT We have not yet been given plots for our shops.
- REH/OWNTEN The original inhabitants/owners have not been compensated properly, while the tenants/outsideers/encroachers have been compensated fully.
- REH/NTT The New Tehri Town is not a nice place. It is at a very high altitude, and it is very cold there. It also has a water shortage problem.
- REH/IMP Under the existing circumstances, relocation is impossible.
- REH/OLDHS Our houses are old and some of them were destroyed in the earthquake. We are not able to repair them because of restrictions imposed by the THDC. Either we should be relocated properly and quickly, or allowed to repair our houses.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (GROUND FLOOR)

19-12-1996

5.12 PM

SALIM AHMED

- REH/HLFLND We still have not been given possession of the land which was allotted to us.
- REH/HLFCMP The full compensation for homes and other assets has not been paid.
- THDC/COR The THDC is a corrupt organisation
- THDC/INS The THDC officials are insensitive to the project affected people, and are never available.
- REH/CMPN The compensation package is inadequate. It should be enhanced.
- REH/JOB One member of each family should be given employment as per the G.O.

REH/SHPIND A 60 sq m plot is not adequate for a shop/house. It should be bigger.

No muslim from my locality has been employed by THDC.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (GROUND FLOOR)

19-12-1996

5.16 PM

SHAKOOR AHMED

REH/CMPN The compensation package is inadequate. It should be enhanced.

REH/HSPLT The size of the housing plots being given should be increased.

REH/HLFLND We still have not been given possession of the land which was allotted to us.

REH/JOB One member of each family should be given employment as per the G.O.

REH/OWNTEN The original inhabitants/owners have not been compensated properly while the tenants/outsideers/encroachers have been compensated fully.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (GROUND FLOOR)

19-12-1996

5.18 PM

SHAUKAT ALI KHAN

REH/OWNTEN The original inhabitants/owners have not been compensated properly while the tenants/outsideers/encroachers have been compensated fully.

REH/LST A list of all the allottees of plots in New Tehri Town should be made public, alongwith a list of the people who have surrendered their plots

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (GROUND FLOOR)

19-12-1996

5.20 PM

PREM CHAND DABHAL, TEHRI GRAM BHOOVISTHAPIT SAMITI

REH/LST A list of all the allottees of plots in New Tehri Town should be made public, alongwith a list of the people who have surrendered their plots

REH/LOCOUT While the local people have not yet been relocated, the outsideers, even if they have settled in Tehri after 1985, have been given all the facilities.

THDC/PLTALL There are irregularities in the allotment of plots. In many cases, while tenants have been given bigger plots, landlords have been allotted smaller ones.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (GROUND FLOOR)

19-12-1996

5.23 PM

PARMANAND NAUTIYAL

THDC/PLTALL There are irregularities in the allotment of plots. In many cases, while tenants have been given bigger plots, landlords have been allotted smaller ones.

REH/INCN There is an inconsistency for fixing rates for land, homes, assets, within and among villages as well as in Old Tehri Town for aquisition.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (GROUND FLOOR)

19-12-1996

5.28 PM

VIJAY KUMAR AGGARWAL

THDC/CMPVAR There are irregularities in the compensation paid by THDC. In many cases, while tenants have been given higher compensation, landlords have received compensation which is lower.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (GROUND FLOOR)

19-12-1996

5.32 PM

CHINTAMANI VYAS

REH/CMPN The compensation package is inadequate. It should be enhanced.

REH/ADULT Each adult member (18 years and over) of a family should be separately rehabilitated.

REH/CTOFRV The cut-off date for identification of the project affected persons should be revised.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (GROUND FLOOR)

19-12-1996

5.37 PM

MADAN SINGH RAWAT, BHALDIANA YUVA SANGH

- REH/JOB One member of each family should be given employment as per the G.O.
- REH/VLSHP The shopkeepers who are located in rural areas, need to be compensated in the same manner as the shopkeepers of Old Tehri Town.
- REH/JOBALLW If the THDC can not employ local people, then it must give an unemployment allowance to the unemployed youth.
- THDC/INS The THDC officials are insensitive to the project affected people, and are never available.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (GROUND FLOOR)

19-12-1996

5.39 PM

TASLIM AHMED

- REH/JOB One member of each family should be given employment as per the G.O.
- REH/REVVH The rates of evaluation of homes need to be revised.
- REH/OLDHS Our houses are old and some of them were destroyed in the earthquake. We are not able to repair them because of restrictions imposed by the THDC. Either we should be relocated properly and quickly, or allowed to repair our houses.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (GROUND FLOOR)

19-12-1996

5.41 PM

PRATAP SINGH RANA

- REH/ADULT Each adult member (18 years and over) of a family should be separately rehabilitated.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (GROUND FLOOR)

19961219

5.44 PM

PRADEEP BHATT, BARHGANGA VILLAGE

REH/PRTSUB Partial submergence villages should be treated just like full submergence villages because all the good agricultural land will be drowned. This is because most of the flat land is close to, or at, the bottom of the river valleys.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (GROUND FLOOR)

19-12-1996

5.46 PM

KIRTI SINGH NEGI (SETTLER IN PATHRI)

REH/JOB One member of each family should be given employment as per the G.O.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (GROUND FLOOR)

19-12-1996

5.48 PM

DHARMENDRA NAUTIYAL

REH/JOB One member of each family should be given employment as per the G.O.

REH/IOBLST A list of all the supposedly local people employed in THDC should be made public so that one can find out how many are frauds.

THDC/COR The THDC is a corrupt organisation

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (GROUND FLOOR)

19-12-1996

5.50 PM

DIGVIJAY KUMAR GAROLA

REH/JOB One member of each family should be given employment as per the G.O.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (GROUND FLOOR)

19-12-1996

5.51 PM

ANAND SHARAN SINGH KATIYAR

REH/JOB One member of each family should be given employment as per the G.O.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (GROUND FLOOR)

19-12-1996

5.52 PM

DINESH DHANAI, CHAIRMAN, URBAN COOPERATIVE BANK

The Urban Cooperative Bank should also be relocated to NTT. The old bus stand is now in the notified town area, but the authorities are looking at it as a rural area.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)

19-12-1996

6.10 PM

VIKRAM SINGH NEGI

REH/NAR The rehabilitation package for the project affected people of Tehri Dam should be as per the national/Narmada Dam rehabilitation policy.

REH/CTOFRV The cut-off date for identification of the project affected persons should be revised.

REH/CMPN The compensation package is inadequate. It should be enhanced.

REH/PRTSUB Partial submergence villages should be treated just like full submergence villages because all the good agricultural land will be drowned. This is because most of the flat land is close to, or at, the bottom of the river valleys.

REH/VLSHP The shopkeepers who are located in rural areas, need to be compensated in the same manner as the shopkeepers of Old Tehri Town.

REH/JOB One member of each family should be given employment as per the G.O.

REH/JOBLST A list of all the supposedly local people employed in THDC should be made public so that one can find out how many are frauds.

REH/RING A ring road around the reservoir should be constructed. This will help in developing tourism in this region.

REH BRIDGE After the reservoir has filled up, many villages will be cut off from the rest of the district. To solve this problem, two bridges at Bhalidiana (Bhagirathi valley) and Pipaldali (Bhilangana valley) should be made.

- REH/CTOFNOT The cut-off date for the identification of the project affected persons should be taken from the time when the Section 4,6 notifications are done. ENV/CATINC. The area of the catchment should be increased.
- REH/CULINTEG The cultural and social integrity of the villages should be kept intact. Atleast 1000 families should be settled together at each site.
- THDC/COR The THDC is a corrupt organisation
- REH/UTTAR The land for relocation should be found within the Uttarakhand region, and not outside.
- REH/COTIND The THDC should help in setting up cottage industries for the people who are being relocated, so that they do not have problems in earning a livelihood.

OLD TEHRI TOWN, ZILLA PARISHAD, BHAWAN (FIRST FLOOR)

19-12-1996

6.30 PM

BHANDARI (BLOCK PRAMUKH)

- REH/RIGHTS Villagers have rights for water, fodder, fuel etc. Presently all these commodities are free. When people get relocated, either these rights should be compensated in cash, or provided at the relocation sites.
- REH/SLIPS There are some villages which are located on unstable slopes. These slopes are expected to sink into the reservoir. The villages located on these slopes should also be treated like submergence villages and relocated.
- REH/PRTSUB Partial submergence villages should be treated just like full submergence villages because all the good agricultural land will be drowned. This is because most of the flat land is close to, or at, the bottom of the river valleys.
- REH/RING A ring road around the reservoir should be constructed. This will help in developing tourism in this region.
- REH/IAS Rehabilitation should be handled by an IAS officer who will be based in Tehri, and will not be employed by the THDC. THDC should hand over the Rehabilitation to the Government. The IAS officer should be a sensitive person.
- REH/CTOFRV The cut-off date for identification of the project affected persons should be revised.
- REH/JOB One member of each family should be given employment as per the G.O.
- ENV/WTR A scheme to lift water from the Bhagirathi for some of the villages in the area was stopped by the THDC. This is unfair, as the people of this region should be given the right to use the water over and above the others. (This point was made with reference to the Pratap Nagar drinking water scheme)

OLD TEHRI TOWN. ZILLA PARISHAD BHAWAN (FIRST FLOOR)

19-12-1996

6.50 PM

R.S. RANA

- REH/RIGHT Villagers have rights for water, fodder, fuel etc. Presently all these commodities are free. When people get relocated, either these rights should be compensated in cash, or provided at the relocation sites.
- REH/SLIPS There are some villages which are located on unstable slopes. These slopes are expected to sink into the reservoir. The villages located on these slopes should also be treated like submergence villages and relocated.
- REH/CMPN The compensation package is inadequate. It should be enhanced.
ENV/DUST Because of Dam construction, there is a lot of dust pollution in Old Tehri Town, and people are having health problems (e.g. tuberculosis), because of it.

OLD TEHRI TOWN. ZILLA PARISHAD BHAWAN (FIRST FLOOR)

19-12-1996

6.55 PM

SURAJ BHAN CHAUHAN

- REH/DAMSTOP Presently, all work relating to rehabilitation is at a stand still. Until this is resumed, all work on the Dam site should also be suspended.
- THDC/SHFT The office of the THDC should be located in Old Tehri Town and not in Delhi or Bhagirathi Puram.
- ENV/CATINC The area of the catchment should be increased.
- REH/UTTAR The land for relocation should be found within the Uttarakhand region, and not outside.
- REH/COMM Local people and their representatives should be members of the THDC committee which looks at issues related to relocation.
- REH/SCHI. The schools of Old Tehri Town should be shifted to New Tehri Town only after all rehabilitation is completed.
- REH/NTT The New Tehri Town is not a nice place. It is at a very high altitude, and it is very cold there. It also has a water shortage problem.
- THDC/REV 20% of the revenue earned from the Tehri Dam should be earmarked for Tehri Garhwal.
- THDC/ELECT The local people should be supplied with free electricity after the Tehri Dam becomes operational.
- ENV/CMPAFF Compensatory afforestation should not be done in the plains in places like Jhansi, but in the hills

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)

19-12-1996

RAM CHAND BISHT

- REH/JOB One member of each family should be given employment as per the G.O.
- REH/SCHL The schools of Old Tehri Town should be shifted to New Tehri Town only after all rehabilitation is completed.
- THDC/COR The THDC is a corrupt organisation
- REH/COMM Local people and their representatives should be members of the THDC committee which looks at issues related to relocation.
- REH/LST A list of all the allottees of plots in New Tehri Town should be made public, alongwith a list of the people who have surrendered their plots.
- REH/LNDSLD If a landowner has sold or gifted a part of his land, the THDC does not recognise him as a project affected person. This procedure should be changed and the original landowner should be treated as a project affected person and relocated.
- REH/BOYDIED Because of the shifting of the primary convent school to NTT, our children have to travel long distances everyday. One three year old boy died in an accident when he was returning from school. The bus involved in the accident belonged to the THDC.
- REH/PVTEMPL All the local people can not be directly employed by THDC. But it should be ensured that the Jai Prakash and Thapar groups, who are the main contractors for THDC, employ local people.
- REH/EDUINS The creation of the reservoir will lead to a reorganisation of the development blocks in Tehri District. It should be ensured that after the reorganisation, each block has the same number of educational institutions like ITIs and colleges as before.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)

19-12-1996

ANONYMOUS

- REH/LNDSLD If a landowner has sold or gifted a part of his land, the THDC does not recognise him as a project affected person. This procedure should be changed and the original landowner should be treated as a project affected person and relocated.
- REH/CMFN The compensation package is inadequate. It should be enhanced.
- REH/EDUINS The creation of the reservoir will lead to a reorganisation of the development blocks in Tehri District. It should be ensured that after the reorganisation, each block has the same number of educational institutions like ITIs and colleges as before.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)
19-12-1996
9.35 AM

DR. T. SAMUEL (TEACHER'S ASSOCIATION)

- REH/NTTUNIV The new University Campus to be made in NTT should be as per the blue print which has been approved. Currently, the blue print is not being followed.
- REH/UNIVGST A guest house should be made in the new University Campus coming up in NTT.
- REH/UNIVSTA The new University Campus coming up in NTT, should be given a community centre and a sports complex.
- REH/CMPN The compensation package is inadequate. It should be enhanced.
- REH/EMPLRLCN Government employees including teachers as well as university lecturers should also be treated as project affected persons and relocated to NTT with all facilities.
- REH/PNSN Retired government officials and other pensioners should also be rehabilitated. (With special reference to teachers)

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)
20-12-1996
9.45 AM

R.S. BISHT (TEACHER'S ASSOCIATION)

- REH/EMPLRLCN Government employees including teachers as well as university lecturers should also be treated as project affected persons and relocated to NTT with all facilities.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)
20-12-1996
9.50 AM

SACHIDANAND SAKLANI

- REH/CMPN The compensation package is inadequate. It should be enhanced

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)

20-12-1996

9.53 AM

SHAUKAT ALI

REH/LOCOUT While the local people have not yet been relocated, the outsiders even if they have settled in Tehri after 1985, have been given all the facilities.

REH/ADULT Each adult member (18 years and over) of a family should be separately rehabilitated.

REH/HSPLT The size of the housing plots being given should be increased.

REH/JOBALLW If the THDC can not employ local people, then it must give an unemployment allowance to the unemployed youth.

THDC/COR The THDC is a corrupt organisation

THDC/PLTALL There are irregularities in the allotment of plots. In many cases, while tenants have been given bigger plots, landlords have been allotted smaller ones.

REH/CMPN The compensation package is inadequate. It should be enhanced.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)

20-12-1996

ANONYMOUS (PERSON FROM BORANI VILLAGE)

THDC/INS The THDC officials are insensitive to the project affected people, and are never available.

REH/INCN There is an inconsistency for fixing rates for land, homes, assets, within and among villages as well as in Old Tehri Town for acquisition

REH/CMPN The compensation package is inadequate. It should be enhanced.

REH/PRTLND Some houses in our village have been given land and compensation. Others were only given part compensation. The ones leftout should also be given land and compensated properly.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)

20-12-1996

DHIRENDRA KHANDURI

THDC/INS The THDC officials are insensitive to the project affected people, and are never available.

REH/CMPN The compensation package is inadequate. It should be enhanced.

REH/REVH The rates of evaluation of homes need to be revised.

THDC/CMPVAR There are irregularities in the compensation paid by THDC. In many cases, while tenants have been given higher compensation, landlords have received compensation which is lower.

REH/LOCOUT While the local people have not yet been relocated, the outsiders, even if they have settled in Tehri after 1985, have been given all the facilities.

THDC/INS The THDC officials are insensitive to the project affected people, and are never available.

THDC/ESTIND We have come to think of THDC like we once thought of the East India Company and traitors like Mir Jaffer.

REH/IDENTOST The THDC has still not been able to identify who is a project affected person and who is not.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)

20-12-1996

GOVIND SHAH BALLABH

REH/JOB One member of each family should be given employment as per the G.O.

THDC/COR The THDC is a corrupt organisation

REH/CMPN The compensation package is inadequate. It should be enhanced.

REH/FCLT The rehabilitation site should be developed with facilities like irrigation, drinking water, electricity, community centres, temples etc.

THDC/MISLED THDC has been misleading people. An example of this is their assertion that 70% relocation work has been completed, which is just not true.

THDC/FLOOD This year (1996) in the month of June, the THDC tried to spread panic in Tehri, by announcing that the town was going to get flooded. However, Tehri was declared to be a water scarce area by the U.P. Government.

THDC/SCAM The construction of shelters by THDC for the floods announced this year (1996) is a scam, fit for investigation by the CBI. These shelters comprising of tin sheets have been constructed at a cost of between Rs 3 to Rs 5 crore in the submergence zone.

REH/IDENTOST The THDC has still not been able to identify who is a project affected person and who is not.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)

20-12-1996

SHIV PRASAD PAINULI

REH/GRIE A grievance cell should be set up in the Old Tehri Town to solve people's rehabilitation related problems.

THDC/COR The THDC is a corrupt organisation

REH/PRTSUB Partial submergence villages should be treated just like full submergence villages because all the good agricultural land will be drowned. This is because most of the flat land is close to, or at, the bottom of the river valleys.

REH/SLIPS	There are some villages which are located on unstable slopes. These slopes are expected to sink into the reservoir. The villages located on these slopes should also be treated like submergence villages and relocated.
REH/CUTOFRV	The cut-off date for identification of the project affected persons should be revised.
REH/IDENTOST	The THDC has still not been able to identify who is a project affected person and who is not.
REH/RING	A ring road around the reservoir should be constructed. This will help in developing tourism in this region.
REH/BRIDGE	After the reservoir has filled up, many villages will be cut off from the rest of the district. To solve this problem, two bridges at Bhalldiana (Bhagirathi valley) and Pipaldali (Bhilangana valley) should be made.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)
20-12-1996

BANMALI PRASAD PAINULI (BHOO SWAMI SANGATHAN)

ENV/CATPEO	Planting of trees in the catchment should be done through local people, especially "Mahila Mandals".
ENV/CMPAFF	Compensatory afforestation should not be done in the plains in places like Jhansi, but in the hills
THDC/COR	The THDC is a corrupt organisation
REH/ADULT	Each adult member (18 years and over) of a family should be separately rehabilitated.
REH/JOBALLW	If the THDC can not employ local people, then it must give an unemployment allowance to the unemployed youth.
REH/FXLRAT	The compensation rates should be fixed for all categories of land (eg. irrigated, unirrigated, less fertile etc.) in the submergence zone and should be applicable for all villages. There should be no difference in compensation rates among the villages.
REH/IDENTOST	The THDC has still not been able to identify who is a project affected person and who is not.
THDC/NTT	The THDC is not following the master plan which was approved for NTT. There are no sports complexes, cultural centres, or community halls in NTT. The trees being planted are exotics. There are no health amenities, especially for women.
RF/CMPN	The compensation package is inadequate. It should be enhanced.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)
20-12-1996

BACHIRAM KOSWAL

- REH/DAMSTOP Presently, all work relating to rehabilitation is at a stand still. Until this is resumed, all work on the Dam site should also be suspended.
- REH/REVL The rates fixed for aquisition of land need to be revised, as they are outdated.
- REH/CTOFNOT The cut-off date for the identification of the project affected persons should be taken from the time when the Section 4.6 notifications are done.
- REH/LNDSLD If a landowner has sold or gifted a part of his land, the THDC does not recognise him as a project affected person. This procedure should be changed and the original landowner should be treated as a project affected person and relocated.
- REH/PRTSUB Partial submergence villages should be treated just like full submergence villages because all the good agricultural land will be drowned. This is because most of the flat land is close to, or at, the bottom of the river valleys.
- REH/PAT "Pattas" for the land which has been allotted to the project affected people have not been given.
- REH/COMMTRST We do not trust this committee. We expect delays in its final report, and several notes of dissent.
- REH/IDENSITE Several villages are to be relocated, but relocation sites have not yet been identified. 9000 acres was to be taken over in Pathri in 1978, but this has not been done till date.
- REH/GDLND The people who went to Bhaniawala, Ranipur and Pathri almost a decade ago are still facing problems of water and irrigation. It should be ensured that good agricultural land is found for the project affected persons.
- REH/CULINTEG The cultural and social integrity of the villages should be kept intact. Atleast 1000 families should be settled together at each site.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)
20-12-1996

PREM DUTT JUYAL

- REH/FCLT The rehabilitation site should be developed with facilities like irrigation, drinking water, electricity, community centres, temples etc.
- REH/RING A ring road around the reservoir should be constructed. This will help in developing tourism in this region.
- REH/BRIDGE After the reservoir has filled up, many villages will be cut off from the rest of the district. To solve this problem, two bridges at Bhaldiana (Bhagirathi valley) and Pipaldali (Bhilangana valley) should be made.
- THDC/COR The THDC is a corrupt organisation

REH/EDUINS The creation of the reservoir will lead to a reorganisation of the development blocks in Tehri District. It should be ensured that after the reorganisation, each block has the same number of educational institutions like ITIs and colleges as before.

ENV/CATHORT Agricultural land should be developed in the catchment of the Tehri Dam for horticulture, and then handed back to the farmers.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)
20-12-1996

HARI OM, SECRETARY, TEHRI VYAPAR MANDAL

REH/CMPN The compensation package is inadequate. It should be enhanced.
REH/SCHL The schools of Old Tehri Town should be shifted to New Tehri Town only after all rehabilitation is completed.

ENV/DUST Because of Dam construction, there is a lot of dust pollution in Old Tehri Town, and people are having health problems (eg. tuberculosis), because of it.

REH/DAMSTOP Presently, all work relating to rehabilitation is at a stand still. Until this is resumed, all work on the Dam site should also be suspended.

REH/ADULT Each adult member (18 years and over) of a family should be separately rehabilitated.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)
20-12-1996

BADRI PRASAD, TEHRI VYAPAR MANDAL

THDC/COR The THDC is a corrupt organisation
REH/SCHL The schools of Old Tehri Town should be shifted to New Tehri Town only after all rehabilitation is completed.

ENV/DUST Because of Dam construction, there is a lot of dust pollution in Old Tehri Town, and people are having health problems (eg. tuberculosis), because of it.

THDC/GOVTOFIC While several Government Offices have been shifted to New Tehri Town, the residences are still in Old Tehri Town. This is leading to a lot of hardship.

REH/ADULT Each adult member (18 years and over) of a family should be separately rehabilitated.

REH/CMPN The compensation package is inadequate. It should be enhanced.
REH/FCLT The rehabilitation site should be developed with facilities like irrigation, drinking water, electricity, community centres, temples etc.

THDC/FLOOD This year (1996) in the month of June, the THDC tried to spread panic in Tehri by announcing that the town was going to get flooded. However, Tehri was declared to be a water scarce area by the U.P. Government.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)
20-12-1996

MANIRAM BAHUGUNA

THDC/COR	The THDC is a corrupt organisation
REH/COMM	Local people and their representatives should be members of the THDC committee which looks at issues related to relocation.
REH/OWNTEN	The original inhabitants/owners have not been compensated properly, while the tenants/outsiders/encroachers have been compensated fully.
REH/CMPN	The compensation package is inadequate. It should be enhanced.
REH/JOB	One member of each family should be given employment as per the G.O.
REH/SCHL	The schools of Old Tehri Town should be shifted to New Tehri Town only after all rehabilitation is completed.
THDC/REHLST	The THDC has been giving false lists of the rehabilitated people. This is illustrated by the list of beneficiaries published in the Dainik Jagaran on 15.8.1990. Many of the people in this list do not exist.
THDC/FLOOD	This year (1996) in the month of June, the THDC tried to spread panic in Tehri by announcing that the town was going to get flooded. However, Tehri was declared to be a water scarce area by the U.P. Government.
THDC/SCAM	The construction of shelters by THDC for the floods announced this year (1996) is a scam, fit for investigation by the CBI. These shelters comprising of tin sheets have been constructed at a cost of between Rs 3 to Rs 5 crore in the submergence zone.
REH/BOYDIED	Because of the shifting of the primary convent school to NTT, our children have to travel long distances everyday. One three year old boy died in an accident when he was returning from school. The bus involved in the accident belonged to the THDC.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)
20-12-1996

SACHIDANAND PAIWALI, FREEDOM FIGHTER'S ASSOCIATION

REH/IAS	Rehabilitation should be handled by an IAS officer who will be based in Tehri, and will not be employed by the THDC. THDC should hand over the Rehabilitation to the Government. The IAS officer should be a sensitive person.
REH/IMP	Under the existing circumstances, relocation is impossible.
THDC/INS	The THDC officials are insensitive to the project affected people, and are never available.
THDC/COR	The THDC is a corrupt organisation
REH/LOCOUT	While the local people have not yet been relocated, the outsiders, even if they have settled in Tehri after 1985, have been given all the facilities.
REH/CMPN	The compensation package is inadequate. It should be enhanced.

- REH/REVL The rates fixed for aquisition of land need to be revised. as they are outdated.
- THDC/SHFT The office of the THDC should be located in Old Tehri Town and not in Delhi or Bhagirathi Puram.
- REH/SELLER About 2,000 families earn their livelihood by sale of milk, vegetables, and fruits in Tehri Town. They will not be submerged. However, their livelihood will be affected after the Dam comes up. They should also be treated as project affected persons.
- REH/RING A ring road around the reservoir should be constructed. This will help in developing tourism in this region.
- REH/LNDSTL Before anybody is relocated, the land settlement, which was last done in 1918, should be done by the revenue authorities. Only then can a reliable list of people to be relocated can be prepared.
- THDC/RSDNT THDC asks people to give proof of their residence in the submergence zone. This gives room for a lot of harassment of the public. It should be the job of the THDC to establish whether a person is a bonafide resident of the area or not.
- REH/OTHTWN The residents of Tehri should be relocated to other towns like Dehradun, Rishikesh, Hardwar etc., if they so desire. No imposition to move to NTT should be there.
- REH/COTIND The THDC should help in setting up cottage industries for the people who are being relocated, so that they do not have problems in earning a livelihood.
- REH/GRIE A grievance cell should be set up in the Old Tehri Town to solve people's rehabilitation related problems.
- THDC/PROOF Even after compensation has been paid, we are supposed to give proof of our residence to THDC, before being relocated. This procedure should be changed.

OLD TEHRI TOWN. ZILLA PARISHAD BHAWAN (FIRST FLOOR)
20-12-1996

SHYAM SINGH PASCHIMI

- REH/DAMSTOP Presently, all work relating to rehabilitation is at a stand still. Until this is resumed, all work on the Dam site should also be suspended.
- THDC/COR The THDC is a corrupt organisation
- REH/LOCOUT While the local people have not yet been relocated, the outsiders, even if they have settled in Tehri after 1985, have been given all the facilities.
- ENV/WTR A scheme to lift water from the Bhagirathi for some of the villages in the area was stopped by the THDC. This is unfair, as the people of this region should be given the right to use the water over and above the others.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)
20-12-1996

SUMAN PRAKASH

- REH/OWNTEN The original inhabitants/owners have not been compensated properly, while the tenants/outside/encroachers have been compensated fully.
- REH/ADULT Each adult member (18 years and over) of a family should be separately rehabilitated.
- REH/LAND A person whose existing land holding is more than 2 acres should be given an equivalent amount of land at the relocation site and not just 2 acres. Land should be compensated with land and not money.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)
20-12-1996
GULSHAN RAI (TRADER)

- REH/FCLT The rehabilitation site should be developed with facilities like irrigation, drinking water, electricity, community centres, temples etc.
- REH/CMPN The compensation package is inadequate. It should be enhanced. Can't get loans from the bank because of the Dam.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)
20-12-1996
ANONYMOUS (OLD LADY)

- REH/CMPN The compensation package is inadequate. It should be enhanced.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)
20-12-1996

JAGDAMBA PRASAD DHATURI

- THDC/GOVTOFIC While several Government Offices have been shifted to New Tehri Town, the residences are still in Old Tehri Town. This is leading to a lot of hardship.
- THDC/COR The THDC is a corrupt organisation
- REH/UTTAR The land for relocation should be found within the Uttarakhand region, and not outside.
- THDC/CMPNPRH The THDC gives compensation only after the existing house is broken. However, even after compensation is paid, one has to stay somewhere until the new house is made on the plot which is allotted. This procedure should be changed as it leads to problems.
- REH/EMPLRLCN Government employees including teachers as well as university lecturers should also be treated as project affected persons and relocated to NTT with all facilities.

REH/ADMN

The District Administration is insensitive to the needs of the project affected people. Officers who are willing to deal with our problems should be transferred to Tehri.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR):

20-12-1996

DINESH PRASAD DHOBAL (RESETTLED TRADER OF NTT)

REH/NAR

The rehabilitation package for the project affected people of Tehri Dam should be as per the national/Narmada Dam rehabilitation policy.

REH/PAT

"Pattas" for the land which has been allotted to the project affected people have not been given.

REH/CMPN

The compensation package is inadequate. It should be enhanced.

REH/NTT

The New Tehri Town is not a nice place. It is at a very high altitude, and it is very cold there. It also has a water shortage problem.

REH/FCLT

The rehabilitation site should be developed with facilities like irrigation, drinking water, electricity, community centres, temples etc.

ENV/LCLSP

Local species of trees should be planted in the catchment, and not exotics

REH/ADULT

Each adult member (18 years and over) of a family should be separately rehabilitated.

THDC/NTT

The THDC is not following the master plan which was approved for NTT. There are no sports complexes, cultural centres, or community halls in NTT. The trees being planted are exotics. There are no health amenities, especially for women.

REH/RIGHTS

Villagers have rights for water, fodder, fuel etc. Presently all these commodities are free. When people get relocated, either these rights should be compensated in cash, or provided at the relocation sites.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)

20-12-1996

VANSHI LAL (JOURNALIST)

REH/LOCOUT

While the local people have not yet been relocated, the outsiders, even if they have settled in Tehri after 1985, have been given all the facilities.

REH/ADULT

Each adult member (18 years and over) of a family should be separately rehabilitated.

THDC/CMPVAR

There are irregularities in the compensation paid by THDC. In many cases, while tenants have been given higher compensation, landlords have received compensation which is lower.

REH/JOB

One member of each family should be given employment as per the G.O.

THDC/INS

The THDC officials are insensitive to the project affected people, and are never available.

THDC/COR

The THDC is a corrupt organisation

COR/REH/OUT The actual project affected people have still not been relocated, while outsiders who came and settled in order to get compensation have been given all the benefits.

REH/IAS Rehabilitation should be handled by an IAS officer who will be based in Tehri, and will not be employed by the THDC. THDC should hand over the Rehabilitation to the Government. The IAS officer should be a sensitive person.

REH/JOBLST A list of all the supposedly local people employed in THDC should be made public so that one can find out how many are frauds.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)

20-12-1996

KARTAR SINGH

REH/SHPLT

THDC/NTTGRD

We have not yet been given plots for our shops.

The Gurudwara in NTT should not be next to a Masjid, as it is being planned now. Land for the Gurudwara should be given near the bus stand in NTT.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)

20-12-1996

RAJENDRA DUJT

REH/PAT

"Pattas" for the land which has been allotted to the project affected people have not been given.

REH/NAR

The rehabilitation package for the project affected people of Tehri Dam should be as per the national/Narmada Dam rehabilitation policy.

THDC/INS

The THDC officials are insensitive to the project affected people, and are never available.

REH/CMPN

The compensation package is inadequate. It should be enhanced.

THDC/RSDNT

THDC asks people to give proof of their residence in the submergence zone. This gives room for a lot of harassment of the public. It should be the job of the THDC to establish whether a person is a bonafide resident of the area or not.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)

20-12-1996

R. R. SUYAL

REH/EMPLRLCN

Government employees including teachers as well as university lecturers should also be treated as project affected persons and relocated to NTT with all facilities. Offices in NTT have not been constructed properly.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)

20-12-1996

DEV PRASAD NAUTIYAL (THE OLD MAN WHO BROKE DOWN)

He was given Rs. 40,000 as compensation for his house. Compensation for his land has not yet been given. To get the money sanctioned by THDC, he spent Rs. 11,000 on travel to the THDC offices, and on paying bribes. His house is now broken, and he has no money to make another house. He is too old to work. His son-in-law has run away, and his grandson who is only seven years old is totally dependent on him. He wants the committee to help him. Mr. Shaukat Ali added that he had personally taken Mr. Nautiyal to the CMD, THDC, but no action has been taken.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)

20-12-1996

RAM SWARUP NAUTIYAL

THDC/COR	The THDC is a corrupt organisation
REH/JOB	One member of each family should be given employment as per the G.O.
REH/NAR	The rehabilitation package for the project affected people of Tehri Dam should be as per the national/Narmada Dam rehabilitation policy.
REH/INCN	There is an inconsistency for fixing rates for land, homes, assets, within and among villages as well as in Old Tehri Town for aquisition.
REH/LOCOUT	While the local people have not yet been relocated, the outsiders, even if they have settled in Tehri after 1985, have been given all the facilities.
REH/SHPIND	A 60 sq m plot is not adequate for a shop/house. It should be bigger.
REH/CMPN	The compensation package is inadequate. It should be enhanced.
REH/UTTAR	The land for relocation should be found within the Uttarakhand region, and not outside.
THDC/ESTIND	We have come to think of THDC like we once thought of the East India Company and traitors like Mir Jaffer.
REH/ASENA	The THDC has not even rehabilitated village Asena properly, where they plan to start quarrying of stones to be used in the construction of the Tehri Dam.
REH/ADULT	Each adult member (18 years and over) of a family should be separately rehabilitated.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)

20-12-1996

SUKHLAL VALMIK (OLD MAN, RESIDENT OF TEHRI) Please look after us.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)
20-12-1996

BHAGWAN SINGH RANA

- REH/CTOFSAME The difference in the cut-off date for the identification of the project affected persons between the rural areas and Old Tehri Town should not be there.
- REH/CTOFNOT The cut-off date for the identification of the project affected persons should be taken from the time when the Section 4.6 notifications are done.
- REH/CMPN The compensation package is inadequate. It should be enhanced.
- REH/FXLRAT The compensation rates should be fixed for all categories of land (eg. irrigated, unirrigated, less fertile etc.) in the submergence zone and should be applicable for all villages. There should be no difference in compensation rates among the villages.
- REH/REVL The rates fixed for aquisition of land need to be revised, as they are outdated.
- REH/BADLND The land allotted to us is not very fertile. Therefore, we can not shift there.
- REH/PRTSUB Partial submergence villages should be treated just like full submergence villages because all the good agricultural land will be drowned. This is because most of the flat land is close to, or at, the bottom of the river valleys.
- REH/COMM Local people and their representatives should be members of the THDC committee which looks at issues related to relocation.
- THDC/INS The THDC officials are insensitive to the project affected people, and are never available.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)
20-12-1996

B. B. KAVI

- REH/ADULT Each adult member (18 years and over) of a family should be separately rehabilitated.
- REH/JOB One member of each family should be given employment as per the G.O.
- REH/REVL The rates of evaluation of homes need to be revised.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)

20-12-1996

KAMAL SINGH ATWAL

- REH/OWNTEN The original inhabitants/owners have not been compensated properly, while the tenants/outside/encroachers have been compensated fully.
- THDC/PLTALL There are irregularities in the allotment of plots. In many cases, while tenants have been given bigger plots, landlords have been allotted smaller ones.
- REH/WARD12 Nobody from Ward 1 and Ward 2 of the Old Tehri Town has been given any compensation of allotted any land by the THDC. There is a primary school for poor children in Old Tehri Town, which is not being given any space in NTT. However the convent school has been given space. This anomaly should be rectified.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)

20-12-1996

SAFAR SINGH NEGI

- THDC/COR The THDC is a corrupt organisation
- REH/ENCLND The land allotted to us has been encroached. Therefore, we are unable to take possession.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)

20-12-1996

SAFAR SINGH RANA

- THDC/COR The THDC is a corrupt organisation
- REH/NAR The rehabilitation package for the project affected people of Tehri Dam should be as per the national/Narmada Dam rehabilitation policy.
- REH/REH The rates of evaluation of homes need to be revised.
- REH/REH/OUT The actual project affected people have still not been relocated, while outsiders who came and settled in order to get compensation have been given all the benefits.
- REH/OWNTEN The original inhabitants/owners have not been compensated properly, while the tenants/outside/encroachers have been compensated fully.
- REH/ADULT Each adult member (18 years and over) of a family should be separately rehabilitated.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)
20-12-1996

DR. M. P. GORALA

THDC/COR

The THDC is a corrupt organisation

REH/INCN

There is an inconsistency for fixing rates for land, homes, assets, within and among villages as well as in Old Tehri Town for aquisition.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)
20-12-1996

S. P. NAUTIYAL

REH/EMPLRLCN

Government employees including teachers as well as university lecturers should also be treated as project affected persons and relocated to NTT with all facilities.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)
20-12-1996

DEVI SINGH PAWAR

THDC/COR

The THDC is a corrupt organisation

THDC/FLOOD

This year (1996) in the month of June, the THDC tried to spread panic in Tehri by announcing that the town was going to get flooded. However, Tehri was declared to be a water scarce area by the U.P. Government.

THDC/SCAM

The construction of shelters by THDC for the floods announced this year (1996) is a scam, fit for investigation by the CBI. These shelters comprising of tin sheets have been constructed at a cost of between Rs 3 to Rs 5 crore in the submergence zone.

REH/VILFST

The villages in the submergence zone should be relocated first. Old Tehri Town should be relocated only after the villages have been properly relocated.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)
20-12-1996

KIRTI SINGH NEGI (BAR ASSOCIATION)

THDC/COR

The THDC is a corrupt organisation

REH/CTOFRV

The cut-off date for identification of the project affected persons should be revised

REH/NAR

The rehabilitation package for the project affected people of Tehri Dam should be as per the national/Narmada Dam rehabilitation policy.

COR/REH/OUT The actual project affected people have still not been relocated, while outsiders who came and settled in order to get compensation have been given all the benefits.

REH/LOCOUT While the local people have not yet been relocated, the outsiders, even if they have settled in Tehri after 1985, have been given all the facilities.

THDC/GOVT/OFFIC While several Government Offices have been shifted to New Tehri Town, the residences are still in Old Tehri Town. This is leading to a lot of hardship.

REH/CMPN / The compensation package is inadequate. It should be enhanced.

REH/INCN There is an inconsistency for fixing rates for land, homes, assets, within and among villages as well as in Old Tehri Town for acquisition.

REH/NTT The New Tehri Town is not a nice place. It is at a very high altitude, and it is very cold there. It also has a water shortage problem.

ENV/DUST Because of Dam construction, there is a lot of dust pollution in Old Tehri Town, and people are having health problems (eg. tuberculosis), because of it. Jobs have been given in THDC on the basis of false certificates.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)

20-12-1996

BRIJWAL (TEACHER, MEMBER, KARMCHARIS ASSOCIATION)

REH/EMPLRLCN Government employees including teachers as well as university lecturers should also be treated as project affected persons and relocated to NTT with all facilities.

THDC/NTT The THDC is not following the master plan which was approved for NTT. There are no sports complexes, cultural centres, or community halls in NTT. The trees being planted are exotics. There are no health amenities, especially for women.

OLD TEHRI TOWN, ZILLA PARISHAD BHAWAN (FIRST FLOOR)

20-12-1996

RAJENDRA KOTIYAL

THDC/COR The THDC is a corrupt organisation

REH/LOCOUT While the local people have not yet been relocated, the outsiders, even if they have settled in Tehri after 1985, have been given all the facilities.

REH/NTT The New Tehri Town is not a nice place. It is at a very high altitude, and it is very cold there. It also has a water shortage problem.

REH/CTOFRV The cut-off date for identification of the project affected persons should be revised.

REH/EMPLRLCN Government employees including teachers as well as university lecturers should also be treated as project affected persons and relocated to NTT with all facilities.

OLD TEHRI TOWN. ZILLA PARISHAD BHAWAN (FIRST FLOOR)
20-12-1996

RAMANAND BADHANI

REH/CMPN The compensation package is inadequate. It should be enhanced.
(Claims that his compensation has been reduced by the THDC because
he has been raising "uncomfortable" questions.)

OLD TEHRI TOWN. ZILLA PARISHAD BHAWAN (FIRST FLOOR)
20-12-1996

DINESH CHAND SEMWAL

REH/CTOFRV The cut-off date for identification of the project affected persons
should be revised.

THDC/COR The THDC is a corrupt organisation

REH/INCN There is an inconsistency for fixing rates for land, homes, assets,
within and among villages as well as in Old Tehri Town for acquisition.

REH/NAR The rehabilitation package for the project affected people of Tehri Dam
should be as per the national/Narmada Dam rehabilitation policy.

REH/LOCOUT While the local people have not yet been relocated, the outsiders, even
if they have settled in Tehri after 1985, have been given all the
facilities.

ENV/DUST Because of Dam construction, there is a lot of dust pollution in Old
Tehri Town, and people are having health problems (eg. tuberculosis),
because of it.

REH/WARD12 Nobody from Ward 1 and Ward 2 of the Old Tehri Town has been
given any compensation of allotted any land by the THDC.

REH/SURVEY The survey of the villages to identify people who have to be relocated
has not been done properly.

REH/PNSN Retired government officials and other pensioners should also be
rehabilitated.

VILLAGE: LAMBUGRI. GRAM SABHA: PIPOLA, BHILANGANA VALLEY
20-12-1996
3.30 PM

GRAM PRAMUKH

REH/PRTSUB Partial submergence villages should be treated just like full
submergence villages because all the good agricultural land will be
drowned. This is because most of the flat land is close to, or at, the
bottom of the river valleys.

REH/CMPN The compensation package is inadequate. It should be enhanced.

REH/JOB One member of each family should be given employment as per the
G.O.

REH/UTTAR The land for relocation should be found within the Uttarakhand region, and not outside.

REH/NODEVP Because of the construction of the Tehri Dam, all development work in our village has been stopped. We are not even given loans by banks. This is creating a lot of hardship for us.

THDC/COR The THDC is a corrupt organisation

VILLAGE: BARKOT, SHETRA PANCHAYAT: JAKHNI DHAR, BHILANGANA VALLEY
20-12-1996
3.40 PM

GRAM PRAMUKH

REH/PRTSUB Partial submergence villages should be treated just like full submergence villages because all the good agricultural land will be drowned. This is because most of the flat land is close to, or at, the bottom of the river valleys.

REH/CMPN The compensation package is inadequate. It should be enhanced.

REH/JOB One member of each family should be given employment as per the G.O.

REH/UTTAR The land for relocation should be found within the Uttarakhand region, and not outside.

REH/RING A ring road around the reservoir should be constructed. This will help in developing tourism in this region.

REH/BRIDGE After the reservoir has filled up, many villages will be cut off from the rest of the district. To solve this problem, two bridges at Bhaldiana (Bhagirathi valley) and Pipaldali (Bhilangana valley) should be made.

REH/COMM Local people and their representatives should be members of the THDC committee which looks at issues related to relocation.

VILLAGE: BARKOT, SHETRA PANCHAYAT: JAKHNI DHAR, BHILANGANA VALLEY
20-12-1996
3.45 PM

KUSHAL SINGH

REH/COMM Local people and their representatives should be members of the THDC committee which looks at issues related to relocation.

ENV/CATINC The area of the catchment should be increased.

ENV/CATPEO Planting of trees in the catchment should be done through local people, especially "Mahila Mandals".

ENV/CMPAFF Compensatory afforestation should not be done in the plains in places like Jhansi, but in the hills

REH/REVL The rates fixed for acquisition of land need to be revised, as they are outdated.

REH/PRTSUB Partial submergence villages should be treated just like full submergence villages because all the good agricultural land will be drowned. This is because most of the flat land is close to, or at, the bottom of the river valleys.

REH/REVA The rates of evaluation of assets like trees, irrigation channels, flour mills ("Gharaat") etc. need to be revised.

VILLAGE: BARKOT, SHETRA PANCHAYAT: JAKHNI DHAR, BHILANGANA VALLEY

20-12-1996

3.50 PM

RAGHUNATH SINGH RANA (FORMER PRAMUKH)

REH/PRTSUB Partial submergence villages should be treated just like full submergence villages because all the good agricultural land will be drowned. This is because most of the flat land is close to, or at, the bottom of the river valleys.

REH/JOB One member of each family should be given employment as per the G.O.

ENV/CATPEO Planting of trees in the catchment should be done through local people, especially "Mahila Mandals".

ENV/CATINC The area of the catchment should be increased.

REH/SLIPS There are some villages which are located on unstable slopes. These slopes are expected to sink into the reservoir. The villages located on these slopes should also be treated like submergence villages and relocated.

REH/FXLRAT The compensation rates should be fixed for all categories of land (eg. irrigated, unirrigated, less fertile etc.) in the submergence zone and should be applicable for all villages. There should be no difference in compensation rates among the villages. (Wanted a green belt to be created around the reservoir)

VILLAGE: BARKOT, SHETRA PANCHAYAT: JAKHNI DHAR, BHILANGANA VALLEY

20-12-1996

3.55 PM

VIKRAM SINGH NEGI

REH/REVL The rates fixed for acquisition of land need to be revised, as they are outdated.

THDC/INS The THDC officials are insensitive to the project affected people and are never available.

REH/CMPN The compensation package is inadequate. It should be enhanced.

REH/CTOFRV The cut-off date for identification of the project affected persons should be revised.

REH/CTOFSAME The difference in the cut-off date for the identification of the project affected persons between the rural areas and Old Tehri Town should not be there.

REH/NAR The rehabilitation package for the project affected people of Tehri Dam should be as per the national/Narmada Dam rehabilitation policy.

- REH/LNDSLD If a landowner has sold or gifted a part of his land, the THDC does not recognise him as a project affected person. This procedure should be changed and the original landowner should be treated as a project affected person and relocated.
- REH/PRTSUB Partial submergence villages should be treated just like full submergence villages because all the good agricultural land will be drowned. This is because most of the flat land is close to, or at, the bottom of the river valleys.
- REH/BRIDGE After the reservoir has filled up, many villages will be cut off from the rest of the district. To solve this problem, two bridges at Bhaldiana (Bhagirathi valley) and Pipaldali (Bhilangana valley) should be made.
- REH/RING A ring road around the reservoir should be constructed. This will help in developing tourism in this region.
- REH/VLSHP The shopkeepers who are located in rural areas, need to be compensated in the same manner as the shopkeepers of Old Tehri Town.
- REH/IAS Rehabilitation should be handled by an IAS officer who will be based in Tehri, and will not be employed by the THDC. THDC should hand over the Rehabilitation to the Government. The IAS officer should be a sensitive person.
- ENV/CMPAFF Compensatory afforestation should not be done in the plains in places like Jhansi, but in the hills

VILLAGE: NANDA GAON, PANCHAYAT: NANDA GAON, BHILANGANA VALLEY

20-12-1996

4.20 PM

BLOCK PRAMUKH (SPEAKER 1)

- REH/PRTSUB Partial submergence villages should be treated just like full submergence villages because all the good agricultural land will be drowned. This is because most of the flat land is close to, or at, the bottom of the river valleys.
- REH/IAS Rehabilitation should be handled by an IAS officer who will be based in Tehri, and will not be employed by the THDC. THDC should hand over the Rehabilitation to the Government. The IAS officer should be a sensitive person.
- REH/JOB One member of each family should be given employment as per the G.O.
- REH/LNDSTL Before anybody is relocated, the land settlement, which was last done in 1918, should be done by the revenue authorities. Only then can a reliable list of people to be relocated can be prepared.

VILLAGE: ASENA, PANCHAYAT: PRAGALI, BHILANGANA VALLEY

20-12-1996

4.35 PM

KANWAL SINGH (EX-PRADHAN)

- REH/PRTSUB Partial submergence villages should be treated just like full submergence villages because all the good agricultural land will be drowned. This is because most of the flat land is close to, or at, the bottom of the river valleys.
- ENV/CAT The catchment area is not being planted properly. All the trees which were planted have died.
- REH/ASENA2 The THDC is taking over a part of our land for quarrying of stones to be used in the construction of Tehri Dam. Because of this our only water source will be destroyed. In addition, our forests will also disappear.
- REH/SURVEY The survey of the villages to identify people who have to be relocated has not been done properly.
- REH/NODEVP Because of the construction of the Tehri Dam, all development work in our village has been stopped. We are not even given loans by banks. This is creating a lot of hardship for us.
- REH/VILRLC Our entire village should be relocated together and not be split up.

VILLAGE: ASENA, PANCHAYAT: PRAGALI, BHILANGANA VALLEY

20-12-1996

4.40 PM

JAYANTI PRASAD SEMWAL

- REH/REVL The rates fixed for aquisition of land need to be revised, as they are outdated.
- REH/FXL RAT The compensation rates should be fixed for all categories of land (eg. irrigated, unirrigated, less fertile etc.) in the submergence zone and should be applicable for all villages. There should be no difference in compensation rates among the villages.
- REH/REVA The rates of evaluation of assets like trees, irrigation channels, flour mills ("Gharaat") etc. need to be revised.
- THDC/SHFT The office of the THDC should be located in Old Tehri Town and not in Delhi or Bhagirathi Puram.
- REH/ADULT Each adult member (18 years and over) of a family should be separately rehabilitated.
- REH/DAMSTOP Presently, all work relating to rehabilitation is at a stand still. Until this is resumed, all work on the Dam site should also be suspended.
- REH/NAR The rehabilitation package for the project affected people of Tehri Dam should be as per the national/Narmada Dam rehabilitation policy.
- REH/JOB One member of each family should be given employment as per the G.O.

REH/UTTAR

The land for relocation should be found within the Uttarakhand region, and not outside.

REH/VILRLC

Our entire village should be relocated together and not be split up.

VILLAGE: GHOSANA, BHILANGANA VALLEY

20-12-1996

NATHI LAL KANSWAL

THDC/COR

The THDC is a corrupt organisation

ENV/CAT

The catchment area is not being planted properly. All the trees which were planted have died.

REH/CMPN

The compensation package is inadequate. It should be enhanced.

REH/NAR

The rehabilitation package for the project affected people of Tehri Dam should be as per the national/Narmada Dam rehabilitation policy.

REH/IAS

Rehabilitation should be handled by an IAS officer who will be based in Tehri, and will not be employed by the THDC. THDC should hand over the Rehabilitation to the Government. The IAS officer should be a sensitive person.

REH/CTOFRV

The cut-off date for identification of the project affected persons should be revised.

REH/ADULT

Each adult member (18 years and over) of a family should be separately rehabilitated.

REH/NODEVP

Because of the construction of the Tehri Dam, all development work in our village has been stopped. We are not even given loans by banks. This is creating a lot of hardship for us. (Alternatives to the Tehri Dam should be seriously looked at)

VILLAGE: GHONTI, GRAM SABHA: GHONTI, BHILANGANA VALLEY

20-12-1996

5.20 PM

BLOCK PRADHAN (SPEAKER 1)

REH PRTSUB

Partial submergence villages should be treated just like full submergence villages because all the good agricultural land will be drowned. This is because most of the flat land is close to, or at, the bottom of the river valleys.

VILLAGE: MALI DEWAL, BLOCK: THAULDHAR, BHAGIRATHI VALLEY

21-12-1996

10.30 AM

HARI SINGH BHANDARI

- REH/FXLRAT The compensation rates should be fixed for all categories of land (eg. irrigated, unirrigated, less fertile etc.) in the submergence zone and should be applicable for all villages. There should be no difference in compensation rates among the villages.
- REH/INCN There is an inconsistency for fixing rates for land, homes, assets, within and among villages as well as in Old Tehri Town for acquisition.
- REH/JOB One member of each family should be given employment as per the G.O.
- REH/RIGHT Villagers have rights for water, fodder, fuel etc. Presently all these commodities are free. When people get relocated, either these rights should be compensated in cash, or provided at the relocation sites.
- THDC/COR
REH/REVA The THDC is a corrupt organisation
The rates of evaluation of assets like trees, irrigation channels, flour mills ("Gharaat") etc. need to be revised.
- COR/REH/OUT The actual project affected people have still not been relocated, while outsiders who came and settled in order to get compensation have been given all the benefits.
- REH/PAT "Pattas" for the land which has been allotted to the project affected people have not been given.
- THDC/SCAM2 There are houses in our village which have been made by THDC for the purpose of compensation. However, these will also be submerged. This should be investigated and the guilty punished.

VILLAGE: MALI DEWAL, BLOCK: THAULDHAR, BHAGIRATHI VALLEY

21-12-1996

10.33 AM

BALDEV SINGH PARIHAR, SECRETARY, YOUTH CONGRESS

- REH/NAR The rehabilitation package for the project affected people of Tehri Dam should be as per the national/Narmada Dam rehabilitation policy.
- REH/LNDSL D If a landowner has sold or gifted a part of his land, the THDC does not recognise him as a project affected person. This procedure should be changed and the original landowner should be treated as a project affected person and relocated.
- REH/CTOFSAME The difference in the cut-off date for the identification of the project affected persons between the rural areas and Old Tehri Town should not be there.
- REH/CTOFNOT The cut-off date for the identification of the project affected persons should be taken from the time when the Section 4.6 notifications are done.
- REH/JOB One member of each family should be given employment as per the G.O.

REH/DAMSTOP

Presently, all work relating to rehabilitation is at a stand still. Until this is resumed, all work on the Dam site should also be suspended.

THDC/COR

The THDC is a corrupt organisation

REH/LOCOUT

While the local people have not yet been relocated, the outsiders, even if they have settled in Tehri after 1985, have been given all the facilities.

VILLAGE: MALI DEWAL, BLOCK: THAULDHAR, BHAGIRATHI VALLEY

21-12-1996

10.36 AM

PREM DUTT GHILDIYAL

THDC/COR

The THDC is a corrupt organisation

THDC/INS

The THDC officials are insensitive to the project affected people, and are never available.

REH/REVA

The rates of evaluation of assets like trees, irrigation channels, flour mills ("Gharaat") etc. need to be revised.

REH/CMPN

The compensation package is inadequate. It should be enhanced.

REH/GRIE

A grievance cell should be set up in the Old Tehri Town to solve people's rehabilitation related problems.

VILLAGE: MALI DEWAL, BLOCK: THAULDHAR, BHAGIRATHI VALLEY

21-12-1996

10.40 AM

S. S. PAWAR

People were not informed about the visit of the committee. In future, the schedule of all the visits should be given in advance. THDC spreads propaganda that local people are not willing to do wage labour, but this is not true.

VILLAGE: MALI DEWAL, BLOCK: THAULDHAR, BHAGIRATHI VALLEY

21-12-1996

10:43 AM

UPENDRA GHILDIYAL

Construction of the ring road around the reservoir should be given to the PWD, as the PWD employs local people for its works.

REH/JOB

One member of each family should be given employment as per the G.O.

THDC/INS The THDC officials are insensitive to the project affected people, and are never available.

REH/RING A ring road around the reservoir should be constructed. This will help in developing tourism in this region.

VILLAGE: GORAL, GRAM SABHA: SIRANGI, BLOCK: THAULDIHAR, BHAGIRATHI
21-12-1996

10.50 AM

SEVERAL PEOPLE IN THE CROWD

REH/FXL RAT The compensation rates should be fixed for all categories of land (eg. irrigated, unirrigated, less fertile etc.) in the submergence zone and should be applicable for all villages. There should be no difference in compensation rates among the villages.

REH/REVII The rates of evaluation of homes need to be revised.

REH/JOB One member of each family should be given employment as per the G.O.

REH/DAMSTOP Presently, all work relating to rehabilitation is at a stand still. Until this is resumed, all work on the Dam site should also be suspended.

THDC/SUBPHASE While the THDC has given compensation to several villages which are in the second phase of submergence, several villages to be submerged in the first phase have still not been compensated.

VILLAGE: GORAL, GRAM SABHA: SIRANGI, BLOCK: THAULDIHAR, BHAGIRATHI
21-12-1996

10.54 AM

KHEM SINGH CHAUHAN, BLOCK PRADHAN

REH/CMPN The compensation package is inadequate. It should be enhanced.

REH/JOB One member of each family should be given employment as per the G.O.

REH/INCN — There is an inconsistency for fixing rates for land, homes, assets, within and among villages as well as in Old Tehri Town for acquisition.

REH/FXL RAT The compensation rates should be fixed for all categories of land (eg. irrigated, unirrigated, less fertile etc.) in the submergence zone and should be applicable for all villages. There should be no difference in compensation rates among the villages.

VILLAGE: GORAL, GRAM SABHA: SIRANGI, BLOCK: THAULDIHAR, BHAGIRATHI
21-12-1996

10.56 AM

KAMAL SINGH BISHT

REH/LNDSLID If a landowner has sold or gifted a part of his land, the THDC does not recognise him as a project affected person. This procedure should be changed and the original landowner should be treated as a project affected person and relocated.

REH/CTOFSAME The difference in the cut-off date for the identification of the project affected persons between the rural areas and Old Tehri Town should not be there.

REH/JOB One member of each family should be given employment as per the G.O.

REH/LNDRTRN Land of our village was aquired for a road which has not been constructed. If this land is not needed, it should be given back to the villagers who are willing to pay back the amount they had received in compensation from the Government.

VILLAGE: GORAL. GRAM SABHA: SIRANGI, BLOCK: THAULDHAR, BHAGIRATHI
21-12-1996
10.58 AM

SWAROB SINGH BISHT

REH/LNDSLD If a landowner has sold or gifted a part of his land, the THDC does not recognise him as a project affected person. This procedure should be changed and the original landowner should be treated as a project affected person and relocated.

REH/CNCL The allotment of the plots which were given to some of the project affected people has been cancelled.

VILLAGE: GORAL. GRAM SABHA: SIRANGI, BLOCK: THAULDHAR, BHAGIRATHI
21-12-1996
11.00 AM

SARASWATI AND SHAMBHU PRASAD

REH/HLFCMP The full compensation for homes and other assets has not been paid.

REH/HLFLND We still have not been given possession of the land which was allotted to us.

REH/CMPN The compensation package is inadequate. It should be enhanced.

VILLAGE: GODI SERAIN. GRAM SABHA: SERAIN, BLOCK: THAULDHAR, BHAGIRAT

21-12-1996
11.10 AM

SURAJ SINGH RANA (BLOCK PRAMUKH)

THDC/COR The THDC is a corrupt organisation.

REH/ADULT Each adult member (18 years and over) of a family should be separately rehabilitated.

REH/UTTAR	The land for relocation should be found within the Uttarakhand region, and not outside.
REH/CMPN	The compensation package is inadequate. It should be enhanced.
REH/VLSHP	The shopkeepers who are located in rural areas, need to be compensated in the same manner as the shopkeepers of Old Tehri Town.
REH/FCLT	The rehabilitation site should be developed with facilities like irrigation, drinking water, electricity, community centres, temples etc.
REH/REVVH	The rates of evaluation of homes need to be revised.
REH/JOB	One member of each family should be given employment as per the G.O.
THDC/SUBPHASE	While the THDC has given compensation to several villages which are in the second phase of submergence, several villages to be submerged in the first phase have still not been compensated.
REH/NODEVP	Because of the construction of the Tehri Dam, all development work in our village has been stopped. We are not even given loans by banks. This is creating a lot of hardship for us.
REH/GUN	We do not trust the communities which are living at the sites where we will be relocated. In order to protect ourselves, we should be given licensed guns.

VILLAGE: SERAIN, BLOCK: THAUDHAR, BHAGIRATHI VALLEY

21-12-1996

UTTAM SINGH BHANDARI (EX-PRAMUKH)

ENV/CAT	The catchment area is not being planted properly. All the trees which were planted have died.
REH/SLIPS	There are some villages which are located on unstable slopes. These slopes are expected to sink into the reservoir. The villages located on these slopes should also be treated like submergence villages and relocated.
REH/PRTSUB	Partial submergence villages should be treated just like full submergence villages because all the good agricultural land will be drowned. This is because most of the flat land is close to, or at the bottom of the river valleys.
REH/FCLT	The rehabilitation site should be developed with facilities like irrigation, drinking water, electricity, community centres, temples etc.
ENV/WTR	A scheme to lift water from the Bhagirathi for some of the villages in the area was stopped by the THDC. This is unfair, as the people of this region should be given the right to use the water over and above the others.

VILLAGE: SERAIN, BLOCK: THAULDHAR, BHAGIRATHI VALLEY
21-12-1996

ROSHAN LAL SEMWAL (BLOCK PRAMUKH, PRATAP NAGAR)

- REH/RING A ring road around the reservoir should be constructed. This will help in developing tourism in this region.
- REH/BRIDGE After the reservoir has filled up, many villages will be cut off from the rest of the district. To solve this problem, two bridges at Bhaldiana (Bhagirathi valley) and Pipaldali (Bhilangana valley) should be made.
- REH/PRTSUB Partial submergence villages should be treated just like full submergence villages because all the good agricultural land will be drowned. This is because most of the flat land is close to, or at, the bottom of the river valleys.
- ENV/CATINC The area of the catchment should be increased.
- ENV/WTR A scheme to lift water from the Bhagirathi for some of the villages in the area was stopped by the THDC. This is unfair, as the people of this region should be given the right to use the water over and above the others.
- REH/EDUINS The creation of the reservoir will lead to a reorganisation of the development blocks in Tehri District. It should be ensured that after the reorganisation, each block has the same number of educational institutions like ITIs, and colleges as before.

VILLAGE: SERAIN, BLOCK: THAULDHAR, BHAGIRATHI VALLEY
21-12-1996

GYAN SINGH RANA

- REH/JOB One member of each family should be given employment as per the G.O.
- REH/REVL The rates fixed for aquisition of land need to be revised, as they are outdated.
- REH/REVH The rates of evaluation of homes need to be revised.
- REH/REVA The rates of evaluation of assets like trees, irrigation channels, flour mills ("Gharaat") etc. need to be revised.
- REH/RIGHT Villagers have rights for water, fodder, fuel etc. Presently all these commodities are free. When people get relocated, either these rights should be compensated in cash, or provided at the relocation sites.
- REH/NODEV P Because of the construction of the Tehri Dam, all development work in our village has been stopped. We are not even given loans by banks. This is creating a lot of hardship for us.

VILLAGE: SERAIN, BLOCK: THAULDHAR, BHAGIRATHI VALLEY
21-12-1996

KHEM SINGH CHAUHAN (BLOCK PRAMUKH THAULDHAR)

- REH/LNDSL D If a landowner has sold or gifted a part of his land, the THDC does not recognise him as a project affected person. This procedure should be changed and the original landowner should be treated as a project affected person and relocated.
- ENV/CATINC The area of the catchment should be increased.
REH/JOB One member of each family should be given employment as per the G.O.
- REH/VLSHP The shopkeepers who are located in rural areas, need to be compensated in the same manner as the shopkeepers of Old Tehri Town.
- REH/CMPN The compensation package is inadequate. It should be enhanced.
REH/NODEVP Because of the construction of the Tehri Dam, all development work in our village has been stopped. We are not even given loans by banks. This is creating a lot of hardship for us.
- THDC/SUBPHASE While the THDC has given compensation to several villages which are in the second phase of submergence, several villages to be submerged in the first phase have still not been compensated.
- REH/EDUINS The creation of the reservoir will lead to a reorganisation of the development blocks in Tehri District. It should be ensured that after the reorganisation, each block has the same number of educational institutions like ITIs and colleges as before.

VILLAGE: SERAIN, BLOCK: THAULDHAR, BHAGIRATHI VALLEY
21-12-1996

GAJANAND DUTT RATURI

- THDC/COR The THDC is a corrupt organisation
REH/JOB One member of each family should be given employment as per the G.O.
- REH/FXLRAT The compensation rates should be fixed for all categories of land (eg. irrigated, unirrigated, less fertile etc.) in the submergence zone and should be applicable for all villages. There should be no difference in compensation rates among the villages.
- REH/LOCOUT While the local people have not yet been relocated, the outsiders, even if they have settled in Tehri after 1985, have been given all the facilities.
- COR/REH/PLOT There has been corruption in the allotment of plots to the project affected people.
- REH/IAS Rehabilitation should be handled by an IAS officer who will be based in Tehri, and will not be employed by the THDC. THDC should hand

over the Rehabilitation to the Government. The IAS officer should be a sensitive person.

THDC/SUBPHASE While the THDC has given compensation to several villages which are in the second phase of submergence, several villages to be submerged in the first phase have still not been compensated.

VILLAGE: SERAIN. BLOCK: THAULDHAR, BHAGIRATHI VALLEY
21-12-1996

JYOT SINGH BISHT

REH/DAMSTOP Presently, all work relating to rehabilitation is at a stand still. Until this is resumed, all work on the Dam site should also be suspended.

THDC/COR The THDC is a corrupt organisation

THDC/INS The THDC officials are insensitive to the project affected people, and are never available.

REH/JOB One member of each family should be given employment as per the G.O.

REH/ADULT Each adult member (18 years and over) of a family should be separately rehabilitated.

REH/INCN There is an inconsistency for fixing rates for land, homes, assets, within and among villages as well as in Old Tehri Town for aquisition.

REH/IAS Rehabilitation should be handled by an IAS officer who will be based in Tehri, and will not be employed by the THDC. THDC should hand over the Rehabilitation to the Government. The IAS officer should be a sensitive person.

REH/FXL RAT The compensation rates should be fixed for all categories of land (eg. irrigated, unirrigated, less fertile etc.) in the submergence zone and should be applicable for all villages. There should be no difference in compensation rates among the villages.

THDC/ELECT The local people should be supplied with free electricity after the Tehri Dam becomes operational.

VILLAGE: SERAIN. BLOCK: THAULDHAR, BHAGIRATHI VALLEY
21-12-1996

UTTAM SINGH TOMAR (STUDENT LEADER)

REH/EMPL

COR/REH/OUT The actual project affected people have still not been relocated, while outsiders who came and settled in order to get compensation have been given all the benefits.

VILLAGE: SERAIN. BLOCK: THAULDHAR. BHAGIRATHI VALLEY
21-12-1996

SAKLANI

REH/REVL The rates fixed for aquisition of land need to be revised, as they are outdated.

THDC/COR The THDC is a corrupt organisation

REH/LNDRTRN Land of our village was aquired for a road which has not been constructed. If this land is not needed, it should be given back to the villagers who are willing to pay back the amount they had received in compensation from the Government.

VILLAGE: SERAIN. BLOCK: THAULDHAR. BHAGIRATHI VALLEY
21-12-1996

BRIJENDRA SINGH UNIYAL

THDC/SHFT The office of the THDC should be located in Old Tehri Town and not in Delhi or Bhagirathi Puram.

THDC/
SUBPHASE While the THDC has given compensation to several villages which are in the second phase of submergence, several villages to be submerged in the first phase have still not been compensated.

VILLAGE: PALASH. GRAM SABHA SERAIN. BLOCK. THAULDHAR. BHAGIRATHI
21.12.1996

JAGDISH PRASAD

REH/PRTSUB Partial submergence villages should be treated just like full submergence villages because all the good agricultural land will be drowned. This is because most of the flat land is close to or at the eastern end of the river valleys.

REH/CNCL The allotment of the plots which were given to some of the project affected people has been cancelled.

REH/INCM There is an inconsistency for fixing rates for land, homes, assets, within and among villages as well as in Old Tehri Town for acquisition.

REH/LNDSLD If a land owner has sold or gifted a part of his land, the THDC does not recognise him as a project affected person. This procedure should be

changed and the original landowner should be treated as a project affected person and relocated.

REH/CTOFRV

The cut-off date for identification of the project affected persons should be revised.

REH/PAT

"Pattas" for the land which has been allotted to the project affected people have not been given.

REH/REVI

The rates of evaluation of homes need to be revised.

REH/JOB

One member of each family should be given employment as per the G.O.

REH/LNDSTL

Before anybody is relocated, the land settlement, which was last done in 1918, should be done by the revenue authorities. Only then can a reliable list of people to be relocated can be prepared.

VILLAGE: PALASHI, GRAM SABHA SERAIN, BLOCK: THAULDIHAR, BHAGIRATHI
21-12-1996

MOTI RAM TIAPLIYAL

REH/CMPN

The compensation package is inadequate. It should be enhanced.

REH/CTOFRV

REH/PAT "Pattas" for the land which has been allotted to the project affected people have not been given.

REH/JOB

One member of each family should be given employment as per the G.O.

REH/REVA

The rates of evaluation of assets like trees, irrigation channels, flour mills ("Gharat") etc. need to be revised.

VILLAGE: DOBRA, BLOCK: THAULDIHAR, BHAGIRATHI VALLEY
21-12-1996

SURENDRA SINGH RANA

REH/CMPN

The compensation package is inadequate. It should be enhanced.

REH/PRTSUB

Partial submergence villages should be treated just like full submergence villages because all the good agricultural land will be drowned. This is because most of the flat land is close to, or at, the bottom of the river valleys.

REH/ADULT

Each adult member (18 years and over) of a family should be separately rehabilitated.

REH/JOB

One member of each family should be given employment as per the G.O.

- REH/VLSHP The shopkeepers who are located in rural areas, need to be compensated in the same manner as the shopkeepers of Old Tehri Town.
- REH/FXLRAT The compensation rates should be fixed for all categories of land (eg irrigated, unirrigated, less fertile etc.) in the submergence zone and should be applicable for all villages. There should be no difference in compensation rates among the villages.
- REH/UTTAR The land for relocation should be found within the Uttarakhand region and not outside.
- REH/RIGHT Villagers have rights for water, fodder, fuel etc. Presently all these commodities are free. When people get relocated, either these rights should be compensated in cash, or provided at the relocation sites.
- REH/FCLT The rehabilitation site should be developed with facilities like irrigation, drinking water, electricity, community centres, temples etc.
- REH/LAND A person whose existing land holding is more than 2 acres should be given an equivalent amount of land at the relocation site and not just 2 acres. Land should be compensated with land and not money.
- REH/LNDLS All persons living in the submergence zone villages of Tehri Dam should be given land in compensation, even if they happen to be landless.

VILLAGE: DOBRA, BLOCK: THAUDHAR, BHAGIRATHI VALLEY
21-12-1996

PURAN SINGH RANA

- REH/LAND A person whose existing land holding is more than 2 acres should be given an equivalent amount of land at the relocation site and not just 2 acres. Land should be compensated with land and not money.

VILLAGE: DOBRA, BLOCK: THAUDHAR, BHAGIRATHI VALLEY

21-12-1996

RATAN SINGH RANA

- REH/INCN There is an inconsistency for fixing rates for land, homes, assets, within and among villages as well as in Old Tehri Town for acquisition.
- THDC/COR The THDC is a corrupt organisation
- REH/BADLND The land allotted to us is not very fertile. Therefore, we can not shift there.
- REH/JOB One member of each family should be given employment as per the G.O.
- REH/NODEVP Because of the construction of the Tehri Dam, all development work in our village has been stopped. We are not even given loans by banks. This is creating a lot of hardship for us.

REH/VILRUR The villagers would like to be shifted to rural areas only, as they are scared to go to towns.
REH/VILRLC Our entire village should be relocated together and not be split up.

VILLAGE: DOBRA, BLOCK: THAUDHAR, BHAGIRATHI VALLEY
21-12-1996

ROLI DEVI AND SUSHILA DEVI

REH/JOB One member of each family should be given employment as per the G.O.
THDC/INS The THDC officials are insensitive to the project affected people, and are never available.
REH/UTTAR The land for relocation should be found within the Uttarakhand region, and not outside.
REH/INCN There is an inconsistency for fixing rates for land, homes, assets, within and among villages as well as in Old Tehri Town for acquisition.

VILLAGE: DOBRA, BLOCK: THAUDHAR, BHAGIRATHI VALLEY
21-12-1996

KETAKI DEVI

THDC/INS The THDC officials are insensitive to the project affected people, and are never available.
REH/FCLT The rehabilitation site should be developed with facilities like irrigation, drinking water, electricity, community centres, temples etc.
REH/UTTAR The land for relocation should be found within the Uttarakhand region, and not outside. (For the past 50 years, we have been working on this land and improving on it every year. Now we have to shift to a completely new place and start from scratch.)
REH/VILRLC Our entire village should be relocated together and not be split up.

VILLAGE: UPPU, BLOCK: THAUDHAR, BHAGIRATHI VALLEY
21-12-1996

KRISHINANAND JUYAL

REH/CTOFRV The cut-off date for identification of the project affected persons should be revised.
REH/CMPN The compensation package is inadequate. It should be enhanced.
REH/PRTSUB Partial submergence villages should be treated just like full submergence villages because all the good agricultural land will be

drowned. This is because most of the flat land is close to, or at, the bottom of the river valleys.

REH/JOB One member of each family should be given employment as per the G.O.

THDC/CANAL Our irrigation channel has been destroyed by the THDC. We have problems in irrigating our fields now.

REH/NODEVP Because of the construction of the Tehri Dam, all development work in our village has been stopped. We are not even given loans by banks. This is creating a lot of hardship for us.

REH/LNDSTL Before anybody is relocated, the land settlement, which was last done in 1918, should be done by the revenue authorities. Only then can a reliable list of people to be relocated can be prepared.

REH/SURVEY The survey of the villages to identify people who have to be relocated has not been done properly.

VILLAGE: UPPU, BLOCK: THAULDHAR, BHAGIRATHI VALLEY
21-12-1996

RAJENDRA JUYAL

REH/CTOFRV The cut-off date for identification of the project affected persons should be revised.

REH/CMPN The compensation package is inadequate. It should be enhanced.

REH/ADULT Each adult member (18 years and over) of a family should be separately rehabilitated.

REH/JOB One member of each family should be given employment as per the G.O.

REH/PRTSUB Partial submergence villages should be treated just like full submergence villages because all the good agricultural land will be drowned. This is because most of the flat land is close to, or at, the bottom of the river valleys.

REH/COMM Local people and their representatives should be members of the THDC committee which looks at issues related to relocation.

REH/VILRLC Our entire village should be relocated together and not be split up.

REH/VLSHP The shopkeepers who are located in rural areas, need to be compensated in the same manner as the shopkeepers of Old Tehri Town.

THDC/PROOF Even after compensation has been paid, we are supposed to give proof of our residence to THDC, before being relocated. This procedure should be changed.

VILLAGE: TALLA, BLOCK: THAULDHAR, BHAGIRATHI VALLEY
21-12-1996

BHAGWAN SINGH RANA, EX-PRADHAN AND CPI-M MEMBER

- REH/INCN There is an inconsistency for fixing rates for land, homes, as etc. within and among villages as well as in Old Tehri Town for aquisition.
- REH/PRTSUB Partial submergence villages should be treated just like full submergence villages because all the good agricultural land will be drowned. This is because most of the flat land is close to, or at, the bottom of the river valleys.
- REH/CTOFNOT The cut-off date for the identification of the project affected persons should be taken from the time when the Section 4,6 notifications are done.
- REH/ADULT Each adult member (18 years and over) of a family should be separately rehabilitated.
- REH/JOB One member of each family should be given employment as per the G.O.
- THDC/INS The THDC officials are insensitive to the project affected people, and are never available.
- THDC/PROOF Even after compensation has been paid, we are supposed to give proof of our residence to THDC, before being relocated. This procedure should be changed. (The District Magistrate has passed orders banning registration of all land transactions in the submergence zone. This makes it impossible for us to prove ownership of land. Because of this we often get compensation which is lower than what we are entitled to)
- REH/LNDSIL Before anybody is relocated, the land settlement, which was last done in 1918, should be done by the revenue authorities. Only then can a reliable list of people to be relocated can be prepared.
- REH/LNDSLID If a landowner has sold or gifted a part of his land, the THDC does not recognise him as a project affected person. This procedure should be changed and the original landowner should be treated as a project affected person and relocated.

VILLAGE: TALLA, BLOCK: THAULDHAR, BHAGIRATHI VALLEY
21-12-1996

BHAV SINGH NEGI (Old Sadhu) Do not build the Tehri Dam. Take away all the other rivers of Garhwal, but let the Bhagirathi flow like it always has. The river is our mother and we should not sell it away for profit.

VILLAGE: BHALDIANA. GRAM SABHA: BHALDIANA, BHAGIRATHI VALLEY
21-12-1996

MADAN SINGH RAWAT

- REH/JOB One member of each family should be given employment as per the G.O.
- THDC/INS The THDC officials are insensitive to the project affected people, and are never available.
- REH/CTOFNOT The cut-off date for the identification of the project affected persons should be taken from the time when the Section 4.6 notifications are done.
- REH/ADULT Each adult member (18 years and over) of a family should be separately rehabilitated.
- REH/NAR The rehabilitation package for the project affected people of Tehri Dam should be as per the national/Narmada Dam rehabilitation policy.
- REH/REVL The rates fixed for acquisition of land need to be revised, as they are outdated.
- REH/CMPN The compensation package is inadequate. It should be enhanced.
- REH/IAS Rehabilitation should be handled by an IAS officer who will be based in Tehri, and will not be employed by the THDC. THDC should hand over the Rehabilitation to the Government. The IAS officer should be a sensitive person. THDC should start a bus service from Bhaldiana to Bhagirathipuram for making it convenient for people to visit the rehabilitation offices.
- REH/VLSHP The shopkeepers who are located in rural areas, need to be compensated in the same manner as the shopkeepers of Old Tehri Town. People who have died due to pollution caused by the construction of Tehri Dam should be compensated.

VILLAGE: BHALDIANA. GRAM SABHA: BHALDIANA, BHAGIRATHI VALLEY
21-12-1996

NATHI SINGH

- REH/PRTSUB Partial submergence villages should be treated just like full submergence villages because all the good agricultural land will be drowned. This is because most of the flat land is close to, or at, the bottom of the river valleys.
- THDC/INS The THDC officials are insensitive to the project affected people, and are never available.

VILLAGE: BIRANI, BLOCK: THAUDHAR, GRAM SABHA: CHHAM, BHAGIRATHI,
21-12-1996

JYOT SINGH BISHT

- REH/UTTAR The land for relocation should be found within the Uttarakhand region and not outside.
- REH/FCLT The rehabilitation site should be developed with facilities like irrigation, drinking water, electricity, community centres, temples etc.
- REH/LNDREG The land given to the relocated people should be registered and "pattas" should be given to them as soon as they shift.
- REH/CMPN The compensation package is inadequate. It should be enhanced.
- REH/VLSHP The shopkeepers who are located in rural areas, need to be compensated in the same manner as the shopkeepers of Old Tehri Town.
- REH/LNDSTL Before anybody is relocated, the land settlement, which was last done in 1918, should be done by the revenue authorities. Only then can a reliable list of people to be relocated can be prepared.
- REH/ADULT Each adult member (18 years and over) of a family should be separately rehabilitated.
- REH/JOB One member of each family should be given employment as per the G.O.
- THDC/RES The THDC should have a 2% job reservation for people of the submergence zone.
- THDC/EDUINS The creation of the reservoir will lead to a reorganisation of the development blocks in Tehri District. It should be ensured that after the reorganisation, each block has the same number of educational institutions like ITIs and colleges as before.
- REH/CTOFNOT The cut-off date for the identification of the project affected persons should be taken from the time when the Section 4,6 notifications are done.
- THDC/WTR The THDC should water for drinking and irrigation free of cost for villages of this region after the Dam is completed.

VILLAGE: BIRANI, BLOCK: THAUDHAR, GRAM SABHA: CHHAM, BHAGIRATHI
21-12-1996

MANI RAM BHAT

- REH/CMPN The compensation package is inadequate. It should be enhanced.
- REH/ADULT Each adult member (18 years and over) of a family should be separately rehabilitated.
- REH/FCLT The rehabilitation site should be developed with facilities like irrigation, drinking water, electricity, community centres, temples etc.
- THDC/COR The THDC is a corrupt organisation
- REH/REVII The rates of evaluation of homes need to be revised.

REH/JOB	One member of each family should be given employment as per the G.O.
REH/REVA	The rates of evaluation of assets like trees, irrigation channels, flour mills ("Gharat") etc. need to be revised.
REH/VLSHP	The shopkeepers who are located in rural areas, need to be compensated in the same manner as the shopkeepers of Old Tehri Town.
REH/LNDSLD	If a landowner has sold or gifted a part of his land, the THDC does not recognise him as a project affected person. This procedure should be changed and the original landowner should be treated as a project affected person and relocated.
REH/VILRLC	Our entire village should be relocated together and not be split up.
REH/INCN	There is an inconsistency for fixing rates for land, homes, assets, within and among villages as well as in Old Tehri Town for acquisition.
REH/RIGHTS	Villagers have rights for water, fodder, fuel etc. Presently all these commodities are free. When people get relocated, either these rights should be compensated in cash, or provided at the relocation sites.

TRANSCRIPTION OF INTERVIEWS WITH THE RELOCATED PEOPLE IN PATHRI FOREST BLOCK, BHALIAWALA AND PATHRI ROH

COLONY NO. 2, PATHRI FOREST BLOCK

22-12-1996

5:15 pm

INTERVIEWERS: SHRI NALINI JAYAL AND RAMAN MEHTA

DOM SINGH, CHHATAR SINGH, GOVIND SINGH AND MUKANDRAM (ALL OF THEM WERE RELOCATED FROM VILLAGE DOB)

128 families have so far been settled at this site. They came in various phases between 1983 and 1993. Four families are of Brahmins while the rest are scheduled castes.

So far the facilities given to them include:

- Two acres of agricultural land per family
- A 17 metres x 12 metres residential plot per family, for which they have paid Rs 340 per sq. metre.
- They were given between Rs 20,000/- and 40,000/- per family for the houses they left behind in their village.

The following promises were made to them by the government but have not yet been fulfilled:

- Pattas have not yet been given for their agricultural land (REL/PAT).
- Atleast one person from each family was promised a job (REL/JOB).
- They were to be given agricultural plots which had been levelled (REL/LAND).
- Water for irrigation was to be provided to them free of cost (REL/WTR).
- Aminities like hospital/dispensary and school etc. were to be provided (REL/AMN).
- A regular bus service between Tehri and their relocation site was to be provided (REL/AMN).
- Potable drinking water was to be arranged (REL/WTR).
- A sewer line was to be arranged (REL/AMN).
- Paved roads in their colony were to be made (REL/AMN).
- They were to be given compensation for assets like irrigation channels, household and farm implements etc (REL/CMPNA).
- A separate electrical sub station for all the relocation colonies was to be commissioned (REL/AMN).

The problems they are facing include:

- They do not have access to bank loans and other developmental facilities of the government (REL/ACCESS).
- There is no post office nearby (REL/AMN).
- There is no outlet for purchase of seeds, fertilisers etc (REL/AMN).

- The nearest bus station is 7 kms. away from their colony. This is the minimum that they have to walk in order to get provisions for their domestic requirements, as well as inputs for agriculture (REL/ACCESS).
- Crop raiding by wild animals was a major problem. They claimed that the THDC had promised them a barbed wire and a trench around their fields for crop protection. However, this promise has also not been fulfilled (REL/CROP, THDC/PRMS).
- During rains, their colony gets waterlogged and they have problems in moving around (REL/WTRLOG).
- They haven't yet been integrated into the host community and feel threatened by the local people. At present the only interaction between the host community and the relocated population is that the latter hire the local people to do wage labour on their fields (REL/HOST).
- They have to pay Rs 22/- per hour for irrigating their fields. This rankles especially because water for irrigation was free of cost in their village (REL/IRRCOST).

They alleged that the THDC was a corrupt organisation. This, they felt, was one of the major reasons why many of the promises made to them had still not been kept. They also stated that if they were able to recover the cost of their house in this colony they would very happily go back to their village (THDC/COR).

COLONY NO. 2, PATHRI FOREST BLOCK

22-12-1996

5:15 pm

INTERVIEWER: VISHAISH UPPAL

Group of women were spoken to. Their names are given below. The number of years that they have been staying at this relocation site is given in brackets next to their names. All of them were from village Dob.

Bhopali Devi (7 yrs.)	Ansali Devi (3 yrs.)	Bhagul Devi (8 yrs.)
Kamli Devi (8 yrs.)	Rusna Devi (6 yrs.)	Muli Devi (9 yrs.)
Leela Devi (9 yrs.)	Hastu Devi (1 yr.)	Basanta Devi (8 yrs.)
Surma (5 yrs.)	Labni Devi (7 yrs.)	Asari Devi (7 yrs.)
Ganga Devi (11 yrs.)	Sumati Devi (10 yrs.)	Asha Devi (10 yrs.)
Binda Devi (6 months)	Sita Devi (6 months)	Indua Devi (6 yrs.)
Peola Devi (6 yrs.)		

The facilities given to them are similar to the ones described in the previous interview.

Their major complaints were:

- They have no access to water, electricity, fuel, fodder etc. While fuel, fodder and water were free for them in their village, they have to pay for water in this place, and have no access to any common property resources from where they use to get fuel and fodder (REL/AMN).
- Crop damage is a major problem (REL/CROP).
- They feel that the host community is hostile (REL/HOST).

- The land that they were given had not been levelled. For the women who have shifted recently, it was a big problem (REL/LAND).
- While they have been provided land for a house it does not have a building. Until they are able to build a house they have to stay in a temporary jhuggi (REL/HOUSE).
- They were promised jobs by the government, but this has not been fulfilled (REL/JOB).
- During rains their colony gets water logged (REL/WTRLOG).
- Since they are quite far away from the nearest town, they have a problem in being able to sell produce like vegetables which used to be quite easy in their village (REL/ACCESS).
- There is no medical facility in the colony. This is a big problem, especially for sick children and pregnant women (REL/AMN).
- The women also complained about the high cost of water which has to be paid for irrigation (REL/IRRCOST).
- There were some specific problems which were also raised. Leela Devi (widow) said that her agricultural plot is far away in the jungle. It should be changed and brought near the colony as she works in her fields all alone. Some other women requested that the liquor shop should be removed from their locality. They also added that they had forcibly locked the shop and complained to the District Magistrate but nothing came out of it.

GRAM SABHA: ATHURWALA, RELOCATION SITE: BHALIAWALA, DEHRADUN
DIST.

23-12-1996

11:00 am

INTERVIEWER: SHRI S. PARSURAMAN AND RAMAN MEHTA

People from villages Jogiana, Khand, Balsi, Panchkot, Kulna, Boradi, and Maldar have been settled at this site. The last three villages were located where now new Tehri town has come up. These villages were relocated in 1983. The problems which were communicated by the people are given below. The main speaker was one Shri Jayadev Dobhal.

- Tubewells in the area are not working properly, and most farmers have a problem in irrigating their fields. Wanted a canal to be brought to Bhaliawala to permanently solve their irrigation problem (REL/WTR).
- The government had promised a job for atleast one person from each relocated family. However, less than 5% of all the families staying in Bhaliawala had a person with a job (REL/JOB).
- The supply of electricity is erratic and irregular. Because of this also irrigation becomes a problem. Wanted a special feeder line for the relocation site to be installed at the UPSEB sub station nearby (REL/AMN).
- When the people came to this site the agricultural land which was given was full of stones and not levelled. They were given a sum of Rs 5,000/- to clear the land and level it. However, many people have spent over Rs 15,000/- for this task. In many agricultural plots there are still so many stones that it is impossible to get anything substantial out of it (REL/LAND).
- One of the grouse of a part of the group was that families from villages Kulna, Boradi, and Maldar have been given a plot each in new Tehri town which was unfair to the rest of them. They all wanted a plot in new Tehri town for each family (REL/ANCN).

- In their villages they had rights to collect fuel and fodder and graze their livestock. These rights have not been transferred at the current site and have also not been compensated (REL/RIGHT).
- They also felt that the principle of treating each adult as a separate family should have been followed (REL/ADULT).
- A specific case of corruption by the THDC was also mentioned. Tubewell No. 7 had temporarily dried up. The THDC officials dug another borewell very close to the original borewell saying that it had become permanently dry. However, when the second borewell also did not work, the original borewell was operationalised and is now working. The local people felt that the whole operation had been a complete waste of time and money, and would not have been undertaken unless there was some corruption (THDC/COR).

GRAM SABHA: ATHURWALA, RELOCATION SITE: BHALIAWALA, DEHRADUN DIST.

23-12-1996

11:30 am

INTERVIEWER: SHRI S. PARSURAMAN AND RAMAN MEHTA

A group of scheduled castes were interviewed. They were Mr. Gobind Singh, Mr. Bhure Lal (both from village Khand), Mr. Purni Singh and Mr. Gom Singh (both from village Jogiana). All of them had come to Bhaliawala in 1978. All of them have been given plots of two acres each. Their current land holdings are bigger than what they had in their village. However, the quality of land which is been to them is poor and all of them have little or no food for about two months in a year.

- There is little or no wage labour available in Bhaliawala. In their village, wage labour was the main stay of their livelihood (REL/WORSE).
- There are still a lot of stones in their fields, making agriculture a very unproductive enterprise (REL/LAND).
- They also complained that irrigation was a problem (REL/WTR).
- They do not have access to bank loans or any other developmental schemes of the government, because they have still not been given their pattas (REL/DEVP).
- They were promised that atleast one member of their family would be given a government job. However, nobody has so far got a job (REL/JOB).
- The relocation colony in Bhaliawala has only a primary school. In order to study further, their children have to go to Rani Pokhri, which is 5 kms. away (REL/AMN).

GRAM SABHA: ATHURWALA, RELOCATION SITE: BHALIAWALA, DEHRADUN
DIST.

23-12-1996

12:00 noon

INTERVIEWER: SHRI S. PARSURAMAN AND RAMAN MEHTA

Spoke to a very angry and militant young man who called himself Kamlesh Saklani. There are 15 people in his family. His major problems were:

- When they shifted, their family had 5 adults. However, since the head of the family was still alive, they were given only one plot. This is not sufficient for their family (REL/ADULT).
- He has been educated upto class XII. He has been to the THDC office many times with a request for a job, but has always come back empty handed. He now supplements the families income by doing small contractual works. He had requested the THDC to commission small works (below Rs 50,000/-) through him, but he has not been given a single contract. He alleged that the THDC is a corrupt organisation. Many of the contracts which were earmarked for execution by the relocated people in Bhaliawala have gone to one Nagalia Transport Company of Dehradun (REL/JOB, THDC/COR).

GRAM SABHA: ATHURWALA, RELOCATION SITE: BHALIAWALA, DEHRADUN
DIST.

23-12-1996

11:40 am

INTERVIEWER: VISHAISH UPPAL

The persons spoken to were Mr. Padam Singh Krishali, Mr. Chandan Singh Sajwan, Mr. Chandrashekhar Bhatt and Mr. Ram Prasad Saklani. In 1978, 16 villages from the Bhagirathi valley and one from the Bhilangan valley were settled here. These 17 villages belonged to eight gram sabhas in Tehri, but they have been clubbed into only one Gram Sabha at the site. The major problems highlighted were:

- Improper functioning of the tubewells and the associated problem of irrigation (REL/WTR).
- Erratic supply of electricity (REL/AMN).
- Residential plots have still not been distributed to all the families (REL/INCN).
- Their rights of grazing, fuel, fodder etc. in Tehri have not been transferred, and have also not been compensated. Also, the CPRs which they had access to in their villages have not been provided (REL/RIGHT).
- The THDC is corrupt as it has given two residential plots to some villagers in this area (THDC/COR).

GRAM SABHA: ATHURWALA, RELOCATION SITE: BHALIAWALA, DEHRADUN
DIST.

23-12-1996

12:00 noon

INTERVIEWER: VISHAISH UPPAL

Spoke to Munni Devi, Basanti Devi, Kamla Devi, Kaushalya Devi, Jashoda Devi, Nirmala Devi, Sushila Devi, Jumla Devi, Anarli Devi, Panchdi Devi, Baisakhi Devi, and Gulabi Devi. All these women belong to Jogiana village and has been settled here for the past 15-18 years. The main issues highlighted were:

- No drinking water (REL/WTR)
- Irrigation water is scarce and canal do not have shutters (REL/WTR).
- No jobs as promised by the THDC has been given to one person from each family (REL/JOB).
- No electricity (REL/AMN)
- Rights like fuelwood and fodder collection cannot be exercised as the Gujjars and the forest department do not allow them to enter the forest (REL/RIGHT).
- Water tax should not be levied (REL/IRRCOST).
- Agricultural land is very bad (REL/LAND).
- The nearby forest should be given to us.
- As no jobs have been provided, our children especially boys have started indulging in thefts.
- There is already a training centre for women without any facilities. This centre should be expanded and activities like embroidery, stitching, beautician course, knitting, non formal education and anganwari training etc. should be started (REL/AMN).
- The high school which is run by THDC should be recognised alongwith the training centre.
- There should be bus service from Athurwala to Dehradun and Rishikesh (REL/AMN).
- A gas agency should be available in Athurwala (REL/AMN).
- All widows should get a widow pension.
- Mandir land of village Jogiana should not be cancelled by the THDC.
- The police chowky near tubewell No. 1 should be removed as the policemen trouble the women who go to collect water at night.
- Some Boradi, Kulna and Moldar villages have got residential plot in new Tehri town as well as Athurwala. We should also get this in (REL/INCN).

Also spoke to Smt. Bajni Devi, Gotindi Devi, Bharosi Devi, Bachu Devi, Saraswati Devi, Sangita Dobal, Rajeshwari and Sundari of Kundal village. These women also highlighted the above mentioned issues but added that there is no irrigation water available for their hamlet and the canals and tubewells should be repaired as soon as possible (REL/WTR). They also added that in their village no mandir or village bhawan has been made.

These women also introduced to the interviewer a person called Sundar Das, a scheduled caste. This person was the caretaker of their village devta, and used to play the "dholki" during the religious fairs and other ceremonies held in their village. This has been the traditional occupation of this person as well as his ancestors. The village people were duty bound to feed and clothe him, and he used to stay in the premises of the village temple.

He was landless. Due to this reason, he has not been allotted any land at the relocation site. However, when the village was relocated, he also migrated with the rest of the village. As usual, he made arrangements for himself to stay in the plot allotted for the temple by the THDC. However, he has been evicted from his shelter in the temple plot. While the villagers still take care of his needs of food and clothes, he does not have a place to stay. All he wants is a plot where he can build a shelter for himself.

RELOCATION SITE: PATHRI ROH, HARIDWAR DIST.

23-12-1996

4:15 pm

INTERVIEWER: RAMAN MEHTA

Spoke to Shri Govind Singh from village Biliawara. Very few people have permanently shifted to this colony. Shri Govind Singh himself is still in possession of his land house in Biliawara. The reason why people have not yet shifted to this relocation site is that there is no electricity and no water in the colony (REL/WTR, REL/AMN). In addition, there are no facilities like schools and shops in the site (REL/AMN). The people who have taken possession of their lands in the colony are hiring local people on the basis of share cropping to do agriculture in their fields. Out of the 264 plots in the colony, 158 have been allotted.

ANNEXURE - I

Broad Statements Made by the Project Affected People of Tehri Dam

Code	Statement
COR/REH/OUT	The actual project affected people have still not been relocated, while outsiders who came and settled in order to get compensation have been given all the benefits.
COR/REH/PLOT	There has been corruption in the allotment of plots to the project affected people.
ENV/CAT	The catchment area is not being planted properly. All the trees which were planted have died.
ENV/CATHORT	Agricultural land should be developed in the catchment of the Tehri Dam for horticulture, and then handed back to the farmers.
ENV/CATINC	The area of the catchment should be increased.
ENV/CATPEO	Planting of trees in the catchment should be done through local people, especially "Mahila Mandals".
ENV/COMPAFF	Compensatory afforestation should not be done in the plains in places like Jhansi, but in the hills
ENV/DUST	Because of Dam construction, there is a lot of dust pollution in Old Tehri Town, and people are having health problems (eg. tuberculosis), because of it.
ENV/FORRES	The forest mafia, in the garb of clearing the submergence zone, is taking away all the resources of the region. There is an acute shortage of fodder, fuel etc. Valuable herbs found in the forest are disappearing. The worst sufferers of all this are women
ENV/LCLSP	Local species of trees should be planted in the catchment, and not exotics
ENV/WTR	A scheme to lift water from the Bhagirathi for some of the villages in the area was stopped by the THDC. This is unfair, as the people of this region should be given the right to use the water over and above the others.
REH/ADMIN	The District Administration is insensitive to the needs of the project affected people. Officers who are willing to deal with our problems should be transferred to Tehri.
REH/ADULT	Each adult member (18 years and over) of a family should be separately rehabilitated.
REH/ASENA	The THDC has not even rehabilitated village Asena properly, where they plan to start quarrying of stones to be used in the construction of the Tehri Dam.
REH/ASENA2	The THDC is taking over a part of our land for quarrying of stones to be used in the construction of Tehri Dam. Because of this our only water source will be destroyed. In addition, our forests will also disappear.
REH/BADLND	The land allotted to us is not very fertile. Therefore, we can not shift there.

REH/BOYDIED Because of the shifting of the primary convent school to NTT, our children have to travel long distances everyday. One three year old boy died in an accident when he was returning from school. The bus involved in the accident belonged to the THDC.

REH/BRIDGE After the reservoir has filled up, many villages will be cut off from the rest of the district. To solve this problem, two bridges at Bhaldiana (Bhagirathi valley) and Pipaldali (Bhilangana valley) should be made.

REH/CMPN The compensation package is inadequate. It should be enhanced.

REH/CNCL The allotment of the plots which were given to some of the project affected people has been cancelled.

REH/COMM Local people and their representatives should be members of the THDC committee which looks at issues related to relocation.

REH/COMMTRST We do not trust this committee. We expect delays in its final report, and several notes of dissent.

REH/COTIND The THDC should help in setting up cottage industries for the people who are being relocated, so that they do not have problems in earning a livelihood.

REH/CTOFNOT The cut-off date for the identification of the project affected persons should be taken from the time when the Section 4,6 notifications are done.

REH/CTOFRV The cut-off date for identification of the project affected persons should be revised.

REH/CTOFSAME The difference in the cut-off date for the identification of the project affected persons between the rural areas and Old Tehri Town should not be there.

REH/CULINTEG The cultural and social integrity of the villages should be kept intact. Atleast 1000 families should be settled together at each site.

REH/DAMSTOP Presently, all work relating to rehabilitation is at a stand still. Until this is resumed, all work on the Dam site should also be suspended.

REH/DISTNTT The District H.Q. should not be in Narendranagar but in NTT.

REH/EDUINS The creation of the reservoir will lead to a reorganisation of the development blocks in Tehri District. It should be ensured that after the reorganisation, each block has the same number of educational institutions like ITIs and colleges as before.

REH/EMPLRLCN Government employees including teachers as well as university lecturers should also be treated as project affected persons and relocated to NTT with all facilities.

REH/ENCLND The land allotted to us has been encroached. Therefore, we are unable to take possession.

REH/FCLT The rehabilitation site should be developed with facilities like irrigation, drinking water, electricity, community centres, temples etc.

REH/FXLRAT The compensation rates should be fixed for all categories of land (eg. irrigated, unirrigated, less fertile etc.) in the submergence zone and should be applicable for all villages. There should be no difference in compensation rates among the villages.

REH/GDLND The people who went to Bhaniawala, Ranipur and Pathri almost a decade ago are still facing problems of water and irrigation. It should

	be ensured that good agricultural land is found for the project affected persons.
REH/GOVTEMPPL	Government buildings/offices have been shifted to NTT, but residences of the Government Employees are still in Old Tehri. This leads to a lot of problems. The residences of Government Employees should also be shifted.
REH/GRIE	A grievance cell should be set up in the Old Tehri Town to solve people's rehabilitation related problems.
REH/GUN	We do not trust the communities which are living at the sites where we will be relocated. In order to protect ourselves, we should be given licensed guns.
REH/HLFCMP	The full compensation for homes and other assets has not been paid
REH/HLFLND	We still have not been given possession of the land which was allotted to us.
REH/HISPLT	The size of the housing plots being given should be increased.
REH/IAS	Rehabilitation should be handled by an IAS officer who will be based in Tehri, and will not be employed by the THDC. THDC should hand over the Rehabilitation to the Government. The IAS officer should be a sensitive person.
REH/IDENSITE	Several villages are to be relocated, but relocation sites have not yet been identified. 9000 acres was to be taken over in Pathri in 1978, but this has not been done till date.
REH/IDENTOST	The THDC has still not been able to identify who is a project affected person and who is not.
REH/IMP	Under the existing circumstances, relocation is impossible.
REH/INCN	There is an inconsistency for fixing rates for land, homes, assets, within and among villages as well as in Old Tehri Town for acquisition.
REH/JOB	One member of each family should be given employment as per the G.O.
REH/JOBALLW	If the THDC can not employ local people, then it must give an unemployment allowance to the unemployed youth.
REH/JOBLST	A list of all the supposedly local people employed in THDC should be made public so that one can find out how many are frauds.
REH/LAND	A person whose existing land holding is more than 2 acres should be given an equivalent amount of land at the relocation site and not just 2 acres. Land should be compensated with land and not money.
REH/LNDLS	All persons living in the submergence zone villages of Tehri Dam, should be given land in compensation, even if they happen to be landless.
REH/LNDREG	The land given to the relocated people should be registered and "pattas" should be given to them as soon as they shift.
REH/LNDRTRN	Land of our village was acquired for a road which has not been constructed. If this land is not needed, it should be given back to the villagers who are willing to pay back the amount they had received in compensation from the Government.
REH/LNDSLID	If a landowner has sold or gifted a part of his land, the THDC does not recognise him as a project affected person. This procedure should be

changed and the original landowner should be treated as a project affected person and relocated.

REH/LNDSTL

Before anybody is relocated, the land settlement, which was last done in 1918, should be done by the revenue authorities. Only then can a reliable list of people to be relocated can be prepared.

REH/LOCOUT

While the local people have not yet been relocated, the outsiders, even if they have settled in Tehri after 1985, have been given all the facilities.

REH/LST

A list of all the allottees of plots in New Tehri Town should be made public, alongwith a list of the people who have surrendered their plots.

REH/NAR

The rehabilitation package for the project affected people of Tehri Dam should be as per the national/Narmada Dam rehabilitation policy.

REH/NCMPN84

We have become landless since 1984 as our land was aquired. We have not got "pattas" for the land given to us in Pathri.

REH/NODEVP

Because of the construction of the Tehri Dam, all development work in our village has been stopped. We are not even given loans by banks. This is creating a lot of hardship for us.

REH/NTT

The New Tehri Town is not a nice place. It is at a very high altitude, and it is very cold there. It also has a water shortage problem.

REH/NTTUNIV

The new University Campus to be made in NTT should be as per the blue print which has been approved. Currently, the blue print is not being followed.

REH/OLDHIS

Our houses are old and some of them were destroyed in the earthquake. We are not able to repair them because of restrictions imposed by the THDC. Either we should be relocated properly and quickly, or allowed to repair our houses.

REH/OTHTWN

The residents of Tehri should be relocated to other towns like Dehradun, Rishikesh, Hardwar etc., if they so desire. No imposition to move to NTT should be there.

REH/OWNTEN

The original inhabitants/owners have not been compensated properly, while the tenants/outsideers/encroachers have been compensated fully.

REH/PAT

"Pattas" for the land which has been allotted to the project affected people have not been given.

REH/PNSN

Retired government officials and other pensioners should also be rehabilitated.

REH/PRTLND

Some houses in our village have been given land and compensation. Others were only given part compensation. The ones leftout should also be given land and compensated properly.

REH/PRTSUB

Partial submergence villages should be treated just like full submergence villages because all the good agricultural land will be drowned. This is because most of the flat land is close to, or at, the bottom of the river valleys.

REH/PVTEMPL

All the local people can not be directly employed by THDC. But it should be ensured that the Jai Prakash and Thapar groups, who are the main contractors for THDC, employ local people.

REH/REVA

The rates of evaluation of assets like trees, irrigation channels, flour mills ("Gharaat") etc. need to be revised.

REH/REVH

The rates of evaluation of homes need to be revised.

REH/REVL	The rates fixed for aquisition of land need to be revised, as they are outdated.
REH/RIGHT	Villagers have rights for water, fodder, fuel etc. Presently all these commodities are free. When people get relocated, either these rights should be compensated in cash, or provided at the relocation sites.
REH/RING	A ring road around the reservoir should be constructed. This will help in developing tourism in this region.
REH/SCHL	The schools of Old Tehri Town should be shifted to New Tehri Town only after all rehabilitation is completed.
REH/SELLER	About 2,000 families earn their livelihood by sale of milk, vegetables, and fruits in Tehri Town. They will not be submerged. However, their livelihood will be affected after the Dam comes up. They should also be treated as project affected persons.
REH/SHPIND	A 60 sq m plot is not adequate for a shop/house. It should be bigger.
REH/SHPLT	We have not yet been given plots for our shops.
REH/SLIPS	There are some villages which are located on unstable slopes. These slopes are expected to sink into the reservoir. The villages located on these slopes should also be treated like submergence villages and relocated.
REH/SURVEY	The survey of the villages to identify people who have to be relocated has not been done properly.
REH/UNIVGST	A guest house should be made in the new University Campus coming up in NTT.
REH/UNIVSTA	The new University Campus coming up in NTT, should be given a community centre and a sports complex.
REH/UTTAR	The land for relocation should be found within the Uttarakhand region, and not outside.
REH/VILFST	The villages in the submergence zone should be relocated first. Old Tehri Town should be relocated only after the villages have been properly relocated.
REH/VILRLC	Our entire village should be relocated together and not be split up.
REH/VILRUR	The villagers would like to be shifted to rural areas only, as they are scared to go to towns.
REH/VLSHP	The shopkeepers who are located in rural areas, need to be compensated in the same manner as the shopkeepers of Old Tehri Town.
REH/WARD12	Nobody from Ward 1 and Ward 2 of the Old Tehri Town has been given any compensation of allotted any land by the THDC.
THDC/CANAL	Our irrigation channel has been destroyed by the THDC. We have problems in irrigating our fields now.
THDC/CMPNPRH	The THDC gives compensation only after the existing house is broken. However, even after compensation is paid, one has to stay somewhere until the new house is made on the plot which is allotted. This procedure should be changed as it leads to problems.
THDC/CMPVAR	There are irregularities in the compensation paid by THDC. In many cases, while tenants have been given higher compensation, landlords have received compensation which is lower.
THDC/COR	The THDC is a corrupt organisation

THDC/ELECT	The local people should be supplied with free electricity after the Tehri Dam becomes operational.
THDC/ESTIND	We have come to think of THDC like we once thought of the East India Company and traitors like Mir Jaffer.
THDC/FLOOD	This year (1996) in the month of June, the THDC tried to spread panic in Tehri by announcing that the town was going to get flooded. However, Tehri was declared to be a water scarce area by the U.P. Government.
THDC/GOVTOFIC	While several Government Offices have been shifted to New Tehri Town, the residences are still in Old Tehri Town. This is leading to a lot of hardship.
THDC/INS	The THDC officials are insensitive to the project affected people, and are never available.
THDC/MISLED	THDC has been misleading people. An example of this is their assertion that 70% relocation work has been completed, which is just not true.
THDC/NTT	The THDC is not following the master plan which was approved for NTT. There are no sports complexes, cultural centres, or community halls in NTT. The trees being planted are exotics. There are no health amenities, especially for women.
THDC/NTTGRD	The Gurudwara in NTT should not be next to a Masjid, as it is being planned now. Land for the Gurudwara should be given near the bus stand in NTT.
THDC/PLTALL	There are irregularities in the allotment of plots. In many cases, while tenants have been given bigger plots, landlords have been allotted smaller ones.
THDC/PROOF	Even after compensation has been paid, we are supposed to give proof of our residence to THDC, before being relocated. This procedure should be changed.
THDC/REHLST	The THDC has been giving false lists of the rehabilitated people. This is illustrated by the list of beneficiaries published in the Dainik Jagaran on 15.8.1990. Many of the people in this list do not exist.
THDC/RES	The THDC should have a 2% job reservation for people of the submergence zone.
THDC/REV	20% of the revenue earned from the Tehri Dam should be earmarked for Tehri Garhwal.
THDC/RSDNT	THDC asks people to give proof of their residence in the submergence zone. This gives room for a lot of harassment of the public. It should be the job of the THDC to establish whether a person is a bonafide resident of the area or not.
THDC/SCAM	The construction of shelters by THDC for the floods announced this year (1996) is a scam, fit for investigation by the CBI. These shelters comprising of tin sheets have been constructed at a cost of between Rs 3 to Rs 5 crore in the submergence zone.
THDC/SCAME	There are houses in our village which have been made by THDC for the purpose of compensation. However, these will also be submerged. This should be investigated and the guilty punished.

THDC/SIHT The office of the THDC should be located in Old Tehri Town and not in Delhi or Bhagirathi Puram .

THDC/SUBPHASE: While the THDC has given compensation to several villages which are in the second phase of submergence, several villages to be submerged in the first phase have still not been compensated.

THDC/WTR The THDC should water for drinking and irrigation free of cost for villages of this region after the Dam is completed.

ANNEXURE - II

Specific Suggestions/Demands Made by the Project Affected People to Improve the Relocation Package

A. Suggestions/Demands made on behalf of the traders in Tehri town.

1. Evaluation of houses and shops should be on the basis of current market prices.
2. The level of compensation should be raised to atleast Rs 5,00,000/- from the current level of around Rs 40,000/- .
3. The size of the plot being allotted in new Tehri town should be about 300 sq. mts.
4. The payment for shops being allotted in new Tehri town should be taken in instalments.
5. An allowance of Rs 2,00,000/- should be given for setting up/furnishing of the shop.
6. In case a trader does not want to go to new Tehri town he should be given a lumpsum of Rs 10,00,000/- .
7. In addition to all the above Rs 10,00,000/- should be paid as compensation for foregoing the goodwill built up in Tehri town. Also, Rs 5,00,000/- should be paid as compensation for the loss of trade.
8. An interest free loan of Rs 5,00,000/- should be given to each trader in order to help in setting up business in a new location.

B. Suggestions/Demands made on behalf of the rural population

1. All evaluation for houses, land, and other assets should be at current market prices.
2. Each person should be given two acres of irrigated land within the Uttarakhand region or Rs 10,00,000/- cash in lieu.
3. If land is available in Uttarakhand but a person does not want the land then he should be compensated at Rs 3,00,000/- per acre.
4. An ex gratia payment of Rs 50,000/- per acre should be given for irrigated land to each person.
5. Those who are landless should be given two acres of land and atleast Rs 1,50,000/- as compensation for their homes.
6. Transportation allowance to go to the new site should be Rs 20,000/-.
7. Rs 20,000/- should be given as allowance to procure seeds/fertilizers etc. at the new site.
8. 600 mt. plots should be given for a homestead.
9. Rs 5,00,000/- should be given for construction of houses at the new site.
10. A disturbance allowance of Rs 1,00,000/- should be given to each person who is relocated.
11. Construction material like cement, sand, stones, bricks etc. should be provided through depots at a subsidised rate.
12. For land given to a person over and above the two acres provided in the package the rate should be fixed at Rs 60,000/- per acre instead of the current level of Rs 2,00,000/-.

Suggestions/Demands made on behalf of Educated, Unemployed Youth

1. Atleast one educated unemployed youth from each family should be given a **government job**.
2. In case this is not possible an unemployment allowance of Rs 1,500/- per month should be paid

ANNEXURE - III

Broad Statements made by the Relocated People at Pathri Forest Block, Bhaliawala and Pathri Roh

CODE	STATEMENT
REL/ACCESS	We do not have access to towns or other markets for our produce.
REL/ADULT	Each adult member of our family should have been treated as a separate entity and given the benefits which go to a family.
REL/AMN	We were promised amenities like electricity, hospitals/dispensaries, schools, bus service, sewer line, post office, gas agency, depot for purchase of construction material, depot for purchase of seeds and fertiliseer etc. However, this has not been done.
REL/CMPNA	We were promised compensation for the assets like our irrigation channels, flour mills ("gharaat"), trees, household and farm implements etc. which we left behind in our village. However, this has not been done.
REL/CROP	One of the biggest problems which we face here is that of crop damage.
REL/DEVP	We do not have access to bank loans or any other developmental schemes of the government.
REL/HOST	The relationship of the resettled population with the host community is one of hostility.
REL/HOUSE	While people have been allotted residential plots, the houses have to be built by the resettled people themselves. Many of whom can not afford to do so. Therefore, many people are staying in temporary "jhuggis".
REL/INCN	There are inconsistencies in the implementation of the relocation package. Some people have received more than others.
REL/IRRCOST	We have to pay between Rs. 20 to Rs. 25 per hour for irrigation. This is very expensive, and we should be provided canal irrigation.
REL/JOB	Atleast one person from each relocated family was promised a job. However, this has still not been done.
REL/LAND	We were promised that the land given to us would be ready for agriculture. However, we have had to ourselves level our land and pick up stones etc. from it, to make it fit for agriculture.
REL/PAT	We were promised "pattas" for our agricultural land. However, this has still not been done.
REL/RIGHT	In our village we had rights for grazing, and fuel and fodder collection. These rights have not been transferred to the relocation site. They also have not been compensated.
REL/WORSE	We are worse off than we were before relocation.

REL/WTR

We were promised supply of free water for irrigation and
inking. However, this has not been done.

REL/WTRLOG

Our colony gets waterlogged during rains. This is a big
problem.

THDC/COR

The THDC is a corrupt organisation

THDC/PRMS

Many of the promises which the THDC has made to us have
not been kept

ANALYSIS OF WRITTEN REPRESENTATIONS
ON
REHABILITATION AND ENVIRONMENT

Amar Deo
Binay Guota

REPORT SUBMITTED TO
THE EXPERT COMMITTEE ON REHABILITATION AND
ENVIRONMENTAL ASPECTS

JANUARY, 1997

Introduction

The Expert Committee in its meeting on 16th November, 1996 decided that the committee will visit the site in 3rd & 4th week of December, 1996 and shall invite the representations from the people through notification to be published in local newspapers. Accordingly, on 16th November, 1996 a notification was issued by the Chairperson of the Expert Committee for publication in the newspapers intimating that Members of the Expert Committee will be visiting the area between 3rd & 4th week of December, 1996 and any one who wants to make any representation in this connection may send his representation in writing to the Commissioner, Garhwal, Dehradun by 7th December, 1996. This notification was published in the Amar Ujala, Dainik Jagran, Rashtriya Sahara and Times of India.

In response to this notification, representations of individual persons and various groups were received at Commissioner's Office and also directly by the Chairperson, at his residential address. These representations were then categorised as follows :

- A. Representations directly received on Chairperson's residential address.
- B. Representations received at Commissioner's Office till 7th December, 1996.
- C. Representations received in the Commissioner's Office after 7th December, 1996.

The Committee then met, during its visit to the site between December 19-23, 1996, the people at Chamba, Zilla Parishad Hall, Villages in Bhilangana as well as Bhagirathi Valley and various re-settlement colonies and took the representations. These representations, 491 in numbers, were translated in English, in brief, and the copies of each was provided to the Members of the Expert Committee.

The analysis of issues reflected in these representations regarding rehabilitation and environmental aspects have been prepared and given in this report.

Executive Summary .

The written representations received by the Chairperson, Commissioner, Garhwal and by the Expert Committee were translated in English, in brief, and analysis of the issues raised in their representations concerning to the rehabilitation and environmental aspects was made.

The analysis is based on these 491 representations in which suggestions/demands related to the improvement in package/policy, difficulties being experienced in implementation, suggestions for implementation, problems related to re-settled people & their demands and personal grievances etc., while analysing these issues - individual grievances have not been considered (except for the purpose of computing the percentage) and only broad issues pertaining to rehabilitation and environmental aspects have been analysed for the information of the Expert Committee.

These 491 applications were grouped as A to K according to the date, place and who who received the applications Annexure-I. Out of these representations, various issues raised by the representationist have been listed and these are indicated at Annexure-II.

All these issues listed have then been categorised into 24 major issues attached at Annexure-III.

These 24 major issues have then been presented in the percentage in tabular form and also in the graph form.

The list giving these issues in descending percentagewise is also given in report and issues which were raised by a large number of persons have been indicated on graphs enclosed with the report.

COMMISSIONER OF ISRAEL

DETAILS OF WRITTEN REPRESENTATIONS RECEIVED

Sl.No.	Category	Date & Place of representation	Number of Representations Received
1.	'A'	Directly by Chairperson	28
// 2.	'B'	Upto 7.12.96 by commissioner Garhwal Office	70
3.	'C'	After 7.12.96 by Commissioner Garhwal office by Chairperson	41
4.	'D'	19.12.96/Zila Panchayat office. Tehri.	62
5.	'E'	20.12.96/Zila Panchayat offices. Tehri	169
6.	'F'	20.12.96/Bhila-langana Valley. Tehri	29
7.	'G'	21.12.96/Bhadirathi Valley. Tehri	46
8.	'H'	22.12.96/Top Terrace. Tehri	08
9.	'I'	22.12.96/Pathri Block. Harwar	11
10.	'J'	23.12.96/Bhanjawa. Dehradun	28
11.	'K'	After 23.12.96 by Chairperson	08
TOTAL :			491

GRAND TOTAL : 491

MAJOR ISSUES RAISED IN THE REPRESENTATIONS

- | S.N. | Category of Issues |
|------|---|
| 1. | Compensation Package needs improvement. |
| 2. | Rates of compensation for residential & agricultural plots are different at different times and at different places and not matching with rates of other areas. |
| 3. | Condition for sale /purchase of land after 1976 be removed. |
| 4. | Needs larger size /uniform size of residential plots. |
| 5. | Shops also be given to shop owners although not running them/to rural shop owners/Hire Purchase Scheme be introduced for shops. |
| 6. | Needs 5 acres agricultural plot/good quality land. |
| 7. | Rehabilitation Policy/Package needs revision. |
| 8. | Cut-off date be advanced/reversed. |
| 9. | Family be redefined/major son/adult members be treated as separate family. |
| 10. | Partially affected villages be treated as fully affected village. |
| 11. | Employment to one member from each family/to all unemployed/reservation in State & Central Government. |
| 12. | Self Employment Scheme be introduced. |
| 13. | Free construction material/houses be given. |
| 14. | Senior IAS be given the work of rehabilitation. |
| 15. | There is corruption in THDC - enquiry be conducted |
| 16. | There is corruption in other Govt. Deptt.-enquiry be conducted. |
| 17. | Facilities related to GOUP departments need be improved. |
| 18. | Facilities be improved by THDC in resettlements. |
| 19. | Royalty / Free electricity / Har-Hakook facilities development in the area. |
| 20. | People be involved in rehabilitation/policy making. |

21. Land titles be given/Land Bandobast be done.
22. Miscellaneous.
23. Environment.
24. National Rehabilitation Policy be formed.

Major Issues in Representations

(Percentage Category Wise)

S. No.	Category	Representations	Percentage
1	Compensation	25	5.09%
2	Rates	18	3.67%
3	1976/78	11	2.24%
4	Plots	12	2.44%
5	Shop	11	2.24%
6	Land	9	1.83%
7	Package/Policy Revision	13	2.65%
8	Cut-Off Date	11	2.24%
9	Def. of Family/Adults as Family	24	4.89%
10	Partial to Full	6	1.22%
11	Employment by THDC & Govt.	47	9.57%
12	Self Employment	14	2.85%
13	Free Const Material/Bldg	4	0.81%
14	I.A.S./THDC Capability	11	2.24%
15	Corruption / Enquiry in THDC	27	5.50%
16	Corruption /Enquiry in Other Deptt	11	2.24%
17	Facilities by GOUP	19	3.87%
18	Facilities by THDC	17	3.46%
19	Royalty/Free Electricity/Hak Hakook	27	5.50%
20	People Involvement	10	2.04%
21	Land Title/Land Bandobast	16	3.26%
22	Misc.	36	7.33%
23	Environment	4	0.81%
24	Nation Rehab. Policy	5	1.02%

Total Written Representations = 491

ISSUE RAISED IN WRITTEN REPRESENTATIONS

I. COMPENSATION PACKAGE NEEDS IMPROVEMENT :

INCREASE

SL. NO.	DEMAND NO.		BRIEF DEMAND
1.	A-7/G-19/H-6	(a)	Increase in compensation, grants and subsistence allowance.
	A-7/A-9/B-25/ B-31/G-27	(b)	Increase in compensation-Rs.1.5 lakhs whether urban or rural/Rs.1.0 lakh for 2 room set/Rs.3.0 lakhs, 1.0 lakh & 0.60 lakh per Nali for various types.
2.	B-20		15% of extra soletium be paid.
3.	B-20 ✓		Compensation in case of drought be paid.
4.	C-20	(a)	Minimum cash compensation should be Rs.10 lakhs.
	C-21/C-19	(b)	Minimum compensation for land should be Rs.5 lakhs.
	D-48	(c)	Increase compensation by 20% every year.

NAP & BENAP

5.	A-2/E-37	(a)	People having Benap land at Tenri may be given plots at NTT in the same limit like land owners.
	A-5/C-14	(b)	Benap given 100-300 Sq.Mtr. land in NTT original oustees 60 M./Benap house owners got maximum benefit.

LAND OWNERS GIVEN LESS

6.	A-5		Tenants given Rs.1.20 lakhs while land owners only Rs.4000/-.
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SHOP INCLUDING SAJ-SAJJA

7. A-9/E-63 Shops allotment as per the area and payment of their decoration.

HOUSE

8. A-5/B-34/E-67 Assessment of rural houses is very less/villagers are not satisfied with valuation of PWD.

TREE

9. A-6/B-6/A-13/C-13/
C-19/G-38 Compensation for fruit trees/
non-fruit trees be made at
present rates.

LANDS

10. A-6/A-13/B-67/
C-21 (a) Deduction for land should be Rs.60,000/- only/Same or pay Rs.5.00 lakhs.
- A-9/C-20/D-48/
C-21 (b) Minimum cash compensation should be Rs.12.0 lakhs/10.0 lakhs/5.0 lakhs.
- C-13 (c) Some people given land near Dehradun having commercial value while others non-fertile land.
- C-14 (d) Expenditure incurred on bluiding and preparing land in steps in hilly areas be reimbursed.
- C-21 (e) Compensation for guls made in villages acquired may also be given.

II. RATES OF COMPENSATION FOR RESIDENTIAL & AGRICULTURAL PLOTS ARE DIFFERENT AT DIFFERENT PLACES AND MATCHING WITH RATES OF OTHER AREAS. not

URBAN

11. A-3/E-21 (a) Earlier PAFs people be given loan at subsidised rates from Nationalised Banks, since received less.
- A-25/B-31 (b) Landlords may be given loan facilities for the purchase of flats/shops or construction of their houses in NTT (Land rights being pursued with

GOUP).

- E-132 (c) Compensation paid at very low rates.
- E-134/E-150/
E-115/A-4/A-7/A-21 (d) Most people paid compensation @ Rs.5.40/Sq.Ft. while a few being paid @ Rs.30.00/Sq.Ft. This discrimination should be looked into.
- B-45 (e) Different rates of compensation - Rs.10 lakhs/Nali in Chamba but THDC is paying only Rs.2.0 lakhs lumpsum. It should be Rs.10.0 lakhs.

RURAL

12. 15 (a) Earlier PAFs people be given loan at subsidised rates from Nationalised Banks, since received less.
- E-113/E-94/H-1/
G-14/G-19. (b) People in same gram sabha have got different facilities and cash compensation, e.g. Baurari PAFs have got more as compared to Kulna PAFs.
- / E-113 (c) THDC has not properly considered the cash compensation paid to persons displaced between 1970 and 1995.

III. 1976-CONDITION

13. A-6/A-3/B-1 /
E-21/F-8/G-19/
G-25/G-38/G-40 (a) Govt. orders of 1976 and 1978 may be cancelled/It should be date of Sec.4(1) notification/ This is against the wishes.
- B-67/C-21/F-8/
G-19/G-25/G-38/
G-40 (b) Govt. order for base year of 1976/78 for rural is not right.

IV. NEEDS LARGER SIZE/UNIFORM SIZE OF RESIDENTIAL PLOTS.

RESIDENTIAL PLOT SIZE

14. A-2/B-6/A-7/A-9/
A-25/ /B-20/
C-19/E-37 (a) Minimum Urban Plot-300 Sq.Mtr./ 200 Sq.Mtr./original allottees be given 150 M. plot or Rs.2.0 lakhs.
- B-23 (b) Some are given 300 Sq.Mtr., some 60 Sq.Mtr. and some 100 Sq.Mtr., no proper Policy.

E-168

- (c) Urban PAFs should be allotted residential plot of 300 Sq.Ft. and payment of Rs.12 lakhs to each family affected by THDC.

HOUSE PLOT

15. E-137

- (a) Rural PAFs should be given atleast Rs.60,000/- for completing foundation work.

A-97

- (b) Reserved plots be converted to residential plots.

V. SHOPS ALSO BE GIVEN TO SHOP OWNERS ALTHOUGH NOT RUNNING THEM / TO RURAL SHOP OWNERS/HIRE-PURCHASE SCHEME BE INTRODUCED FOR SHOPS/LOANS FOR SHOPS

SHOP OWNERS

16. E-11/G-40/G-41

- (a) Land owners having shops in their houses be given shops.

G-40/G-41

- (b) Shop owners may be given commercial plots in addition to the residential plots.

A-9

- (c) Rural shopkeepers be given shops at rehabilitation sites, free of cost.

E-113

- (d) Traders in Old Tehri compensated for Saj-Sajja while same not given to people of Kulna.

H-3/E-8/E-53/H-3/
J-1

- (e) All shopkeepers who have been allotted shops should be allotted house with it.

HIRE-PURCHASE

17. A-9/E-54

- (a) Shops be given on low rent or Hire-Purchase.

H-3/E-54

- (b) The cost of shop be recovered in instalments and load of Rs.5.00 lakhs be given for carrying out the business.

E-78

- (e) Loan with subsidy be provided to oustees of OTT for construction of shops/houses.

VI. NEEDS QUALITY LAND & 5 ACRES AGRICULTURAL PLOT/GOOD QUALITY LAND:

18. A-6 (a) Quality of land should be seen at the time of acquisition and rate should not be decided on basis of old Khatoni.
- A-5/A-9/B-6 (b) Allot 5 Acres of land and not 2 Acres.
- B-20 (c) Allotment of 2 Acres with boundry pillars.
- A-5 (d) Banjarawala people got only 2½ Beegha land.
- B-30 (e) People who got less than 2 Acres be given full 2 Acres.
- E-34 (f) U.P. Govt. betrayed them, they deprived of Motherland, and were allotted stony and unirrigated land. Irrigation Deptt. Officers made commission in construction of tubewells.
- A-97 (g) Full 2 Acres land who got less land.
- J-8/J-1 (h) 5 Acres instead of 2 Acres.

VII. REHABILITATION POLICY/PACKAGE NEEDS REVISION

19. A-9/H-6 (a) Cultural, Economical and Social survey be made and Rehabilitation Policy should be made accordingly.
- A-9/E-6 (b) Report of Bhomla Committee/S.K.Roy Committee be considered in preparing Rehabilitation Policy.
- A-9 (c) Separate Policy for handicapped PAs.
- B-1 (d) Rehabilitation Scheme for Advocates not prepared.
- B-20/B-42 (e) Rehabilitates be given Rs.15,000/- as incentive.

- C-21. (f) Increase transportation grant from Rs.5,000/- to Rs.20,000/-.
- D-35 (g) compensation by 12 times since Project cost increased by 12 times since 1976.
- D-48/G-36 (h) Heir should get rehabilitation benefits even if owner dies during Section 4(1) or Section 6 (1).
- D-48 (i) Rural PAFs should get same facilities as Urban PAFs.
- E-122 (j) Make package transparent and Narmada award should be made operative in Tehri Project.
- E-134 (k) Necessary provision should be made for rehabilitation of Freedom Fighters.
- E-137 (l) Disturbance allowance should be provided @ Rs.1000/oustee.
- B-42/J-4 (m) 200 Sq.Mtr. land to those who have given land to THDC on mutual agreement.

VIII. CUT-OFF DATE ADVANCED/REVERSED

20. A-2/A-25/E-37/ (a) The cut-off date should be year
E-78/E-23/G-28/
G-29/G-33/G-34/
H-6 1975, should be same/tenants
prior to 75 should be taken.
- B-1/G-19 (b) Cut-off date is 6.6.1985. It
should be changed to Dec.,
1996.

IX. FAMILY BE REDEFINED/MAJOR SON/ADULT MEMBERS BE TREATED AS SEPARATE FAMILY

21. A-9/A-21/B-1/ (a) Definition of Rehabilitation,
C-21/E-78/G-36 family and oustees should be as
per Narmada Project/Definition
of Family/Rehabilitation be
defined.

A-2/A-3/E-21/
 A-22/A-25/B-6/
 B-9/B-20/B-25/
 C-14/C-21/E-37/
 G-25/G-27/G-28/
 H-4/J-1

(b) Every adult be treated as Family/adult as Family and 200 Sq.Mtr. plot and Rs.5.00 be given to Adults & unmarried daughter & widow/List be prepared and given employment.

82 20. X. PARTIALLY AFFECTED VILLAGES BE TREATED AS FULLY AFFECTED VILLAGES:

22. B-25/G-7/G-19/
 G-36

(a) Land left with partially PAFs is not good, they be given rehabilitation benefits.

F-1/F-12

(b) Lampogirhi Gram Sabha, Pipoli, Patti, Vikas Khand Jhaknidhar be considered in fully submergence.

XI. EMPLOYMENT TO ONE MEMBER FROM EACH FAMILY/TO ALL EMPLOYED/ALLOWANCE TO UNEMPLOYED.

23. A-6/A-13/B-31/
 B-42/B-53/E-19/
 E-27/E-54/E-65/
 E-78/E-82/E-83/
 E-84/F-1/F-2/F-3/
 F-4/F-6/F-7/F-8/
 F-9/F-14/G-4/G-9/
 G-10/G-11/G-20/G-25/
 G-26/G-28/G-31/G-36/
 J-1/J-4/J-16/H-1/H-4/
 H-6/I-3/I-6/I-10/K-1/
 K-6

(a) One Member be employed from/ Employment to unemployed.

A-2/A-9/B-6/E-37/

(b) Employment to dependents of Doobkehtra in THDC or reservation in other departments/Govt. service, land owners be given employment.

XII. SELF EMPLOYMENT SCHEME BE INTRODUCED/ALLOWANCE TO UNEMPLOYED:

B-39/G-19

(a) Shops be allotted to unemployed /Contract be given.

A-7/B-6/E-9/B-42
 E-78/G-29/G-41/

(d) Employment to Son or Daughter/ 1500/- p.m., 50000/- for self employment or Rs.5.00 lakhs loan/till employment Rs.5000 p.m. for 20 years/minimum 2.00 lakhs be given for self employment.

- A-2/E-37/G-26/ (c) Villages coming under partial Doobkehtra around lake - fruit trees should be planted and Juice/Jam factory started for employment generation.
- E-134 (d) Job avenues should be increased. Training for self employment should be provided. Cottage Industries should be developed and established near Dehradun.
- D-24 (e) Villagers around Tehri for livelihood should get Rs.500/- per month as Unemployment Allowance.

XIII. FREE CONSTRUCTION MATERIAL/HOUSE BE GIVEN:

24. A-9 (a) Free residential plot and buildings be constructed.
- A-2/E-37 (b) PAFs should get construction material free for minimum 3 room house at NTT. Cement, iron, sand, stone, wood etc.
- H-4/H-5 (c) Those who received less than Rs.50000/- as compensation be given two room built-up house free of cost.

XIV. SENIOR I.A.S. BE GIVEN THE WORK OF REHABILITATION

25. A-3/A-6/A-7/ (a) An I.A.S. Officer should be appointed for the Rehabilitation work/taken over by Central Govt.
A-22/B-25/C-19/
E-134/E-21/G-27/
G-33/F-8
- E-134/F-8/G-33 (b) People have firm belief that THDC is not able to solve and tackle issues like Rehabilitation.

XV. THERE IS CORRUPTION IN THDC/ENQUIRY BE CONDUCTED:

26. A-7/A-9/A-12 (a) Corrupt Officers be
A-16/A-18/B-2 removed and expenditure
B-26/B-36/B-38/ be enquired/Rehabilitation
B-61/C-26/C-31/ atmosphere spoiled by
C-40/D-10/D-30/ corrupt THDC officials,
D-41/E-7/E-100/ Investigation of rehab.
E-104/F-12/G-14/ irregularities.
G-21/H-1
- A-26 (b) Plots/shops/flats allotted
to tenants be re-
examined/cancel wrong
allotments after
enquiry/Illegal allotments
be cancelled/Review
rehabilitation done by U.P.
Govt. and THDC.
- A-3 (c) Allotments done by THDC
land/bldg./shop, contract
and employment be enquired.
- B-6 (d) Compensation paid to
outsiders be enquired.
- A-5 (f) THDC given employment to
outsiders.

XVI. THERE IS CORRUPTION IN OTHER GOVT. DEPTT./ENQUIRY
BE CONDUCTED:

- A-2/E-37/B-9/
B-23/B-31/E-11/
E-160/G-19/G-20/
J-25/J-27. Certificate of Doobkehtra
be checked/Irregularities
by MDDA/U.P.Jal Nigam, PWD
Irrigation Deptt., Forest
Deptt. etc.

XVII. FACILITIES RELATED TO G.O.U.P. DEPTTS. NEEDS BE IMPROVED:

27. A-2/B-1/E-37 (a) Bus service between NTT to Chamba and Pauri to be started (this relates to GOUP)/City Bus service for Advocates.
- A-2/E-37 (b) Staff Bus for Govt. employees between Badshahithaul/Chamba and NTT may be operated.
- A-2/A-3E-37/E-21 (c) The Govt. Degree College, Chamba may be shifted to NTT (Pipli Village).
- A-2/B-25/E-37/
G-27 (d) PAFs spend Rs.2000-5000 for approval of house construction plans, which should be free/free approval of Plans.
- A-2/E-37/E-56 (e) Water & Electricity connections may be got transferred to NTT like Gas connections.
- E-36 (f) Master Plan may not be disturbed.
- B-20 (g) New Panchayati Raj Bill should be implemented in the Rehabilitation villages and Village Panchayat for every 1000 persons to be constituted (Relates to GOUP).
- B-25/G-27 (h) Jr.High School of Saur Appu be upgraded as Inter College.
- B-34 (i) Villagers used to sell their products in Tehri Town, which they deprived off.

- B-39/I-3/I-10/
J-23 (j) No transport facility in Pathri.
- B-39/I-3/I-10 (k) Electric supply availability is not proper in Pathri.
- B-39/I-3/I-10 (l) Post Office be opened in Pathri.
- D-24 (m) Inter College in Dharmandal and Higher Secondary School in Jakhnidhar need to be opened after Tehri Town is shifted.
- D-47 (n) Tehsil Pratapnagar should be transferred to Tehsil Ghansali.
- B-39/B-42/I-3/
I-10 (o) More Gram Sabhas be constituted.
- F-12 (p) Govt. Pratap College, Tehri be shifted to Bhaniyawala.
- E-63 (q) Convent School from NTT be shifted to OTT.

XVIII FACILITIES BE IMPROVED IN RESETTLEMENTS BY THDC:

28. A-2/E-37 (a) Playground may be developed outside the Stadium on land being developed for PIC and GGIC at NTT.
- A-2/E-37/C-36
I-3/I-10 (b) Drinking water and sewer lines at NTT be set right.
- A-2/E-37 (c) Some Organisations like Red Cross, Relay Centre, Divine United Organisation left out.
- C-11 (d) Offices may not be shifted till full arrangements/accommodations are made in NTT.
- A-9 (e) Till proper rehabilitation, construction works be stopped and civic amenities may not be removed from Tehri.
- A-9/B-20/B-30
B-39/C-36, I-3/I-10 (f) Irrigation facilities be provided/ Irrigation be provided through canals/proper arrangements.
- A-5/J-4 (g) Quality of land at Bhaniyawala not good - No irrigation facility.
- B-20/H-6 (h) Alternative arrangements for drinking water at Raiwala and Banjarawala.

- B-30 (i) Motor Pump at Susuwa Canal is now 20 years old and needs renovation.
- B-30 (j) No sufficient drinking water in Block 2 & 3.
- B-30 (k) All plots be electrified.
- B-25/G-27 (l) Partial Doobkehtra be provided water tanks for irrigation.
- E-30 (m) Pucca roads in all areas and retaining wall still pending.
- B-30 (n) Jr.High School at Raiwala be constructed.
- E-34 (o) Cremation ground should be near.
- B-39 (p) Only one teacher, more teachers be engaged in Pathri.
- B-42 (q) Works may not be transferred to State Deptts.
- J-4 (r) Drinking water scheme for Bhaniyawala to be started.
- J-4 (s) Handpump, drinking water, school, roads are without repairs.
- J-6 (t) THDC should maintain the facilities.

XIX. ROYALTY/FREE ELECTRICITY/HAK-HAKOOK/DEVELOPMENT IN AREA/
FREE IRRIGATION & DRINKING WATER:

29. A-2/A-3/A-9/
E-3/E-9/E-25 (a) Royalty may be given to District/
Uttarakhand from electricity *of Concession*
from Tehri Dam and concession of 50% free
from electricity and water (Relates
to GOUP)/Electricity at cheaper
rates/12% electricity for
distribution to Zila Panchayat and
Nagtar Palika.
- A-7 (b) THDC to spend 10% of annual budget
on development of Doobkehtra areas.
- D-39 (c) Tehri Garhwal should get 2% of
profit of Tehri Dam Project.
- D-44 (d) Give free electricity and water to
Garhwal region.
- D-48 (e) Free electricity to Distt. Tehri for
residential use.

- D-44 (f) 5% of net profit should go into development works of Distt.
- A-3/E-21 (g) Develop Industries.
- A-3/E-21 (h) Tourism Office to be opened under Senior Govt. Officer.
- A-3/E-21 (i) NTT to be developed as tourist spot.
- H-6/J-1/G-4/
J-12 (j) Rehabilitees may be kept free of taxes on drinking water, electricity and irrigation.
- E-122/G-36 (k) More community facilities like provision of community centres, declaration of tourist complex, provision of public transport etc. should be provided.
- G-36 (l) Free water & electricity.
- A-6/A-22/A-13/
B-34/B-67/D-48
G-25G-29/J-12 (m) The right of wood, grass, goacher & fodder etc. may be given at the Rural Rehabilitation sites also/ right for water.
- D-48/G-25/G-29
J-12 (n) Free timber for construction, grazing grounds etc. should be provided to people.
- C-14/C-21/G-25
G-29/J-12 (o) Free fuel, wood, drinking water, irrigation water, fodder and fruit trees, vegetables, fisheries, good air and respective live is required.

XX. PEOPLE BE INVOLVED IN REHABILITATION/POLICY MAKING:

30. A-3/A-5/A-9/
A-24/B-6/B-20/
C-14/C-19 (a) People having property in Town be inducted in Rehab. and Allotment Committee/Policy/Actual PAPs in Rehab. Committees/Landlords be regularly consulted/Allotment Committee should have one old person from each ward.
- A-3/E-21 (b) Senior Officers, Rehab. Officer, L.A.O., F&A Officer and Pargana Magistrate may visit every ward.

XXI. LAND TITLES BE GIVEN/LAND BANDOBAST BE DONE:

31. A-2/E-37/E-97/
F-9/G-36 (a) Revenue records of houses/shops allotted be completed.

A-9/E-97/F-1/
F-2/F-3/F-6/F-7/
F-9/G-36/H-6 (b) Land Bandobast be done, as it is 30 years old.

A-7/A-9/B-39/
B-42/E-97/F-1/F-2/
F-3/F-6/F-7/G-36/
I-3/I-10/J-22/J-23 (c) Land right may be given immediately.

E-134/E-97/F-1/
F-2/F-3/F-6/F-7/
F-9/H-6/I-2/I-10/
J-22 (d) Rural Rehabilitation:
Land record discrepancies should be set right.
Partial submergence and Full submergence should be redefined.
PAFs settled in Bhaniyawala, Banjarawala, Raiwala, Pathri Block should be provided with drinking water facilities, cooperative milk schemes and other self-employment schemes.

XXII. MISCELLANEOUS:

SPEED UP REHAB.

32. D-39 (a) Tenants should get flats/shops on rent.
- A-2/B-2/B-55 (b) Employees/teachers residing in OTT before 1985 be treated as tenants and allotted plots of minimum 100 Sq.Mtr./THDC do not recognise them/No provision for them in Policy.
- A-21 (c) Policy for allotment of land for picture hall, industries.
- A-22 (d) Rehabilitation to be speeded up.
- E-113 (e) While actual acquisition of land was done in the year 1984, the Tehri Dam Project has not taken possession. This has developed lot of legal complications.
- D-48 (f) Rehabilitation within Uttrakhand region.
- B-45 (g) Villagers are lingering since 1965.
- (h) People of Bhaniyawala may again get displaced due to construction of Jolly Grant Airport.

- E-122 (j) Loan facilities should be made more easy.
- B-47 (j) THDC not taking interest in purchasing land in Distt. Dehradun.
- H-4 (k) All of Theliwala of Tehri be allotted shops/2.00 lakhs cash and two room residential set/2.00 lakhs cash and displacement grant of 1.00 lakhs.
- B-1/G-24/G-25/
G-27 (l) Advocates may be paid compensation for their business losses.
- A-9/B-1/E-63/
G-24/G-25/G-29 (m) Businessmen & Shopkeepers be given atleast 2.0 lakhs for their credibility.
- A-5/B-20/C-2/G-25 (n) Rural oustees may be allotted 400 per Sq.Mtr. in Athur area/500 Sq.Mtr. residential plots around the ring road/be given 300 Sq.Mtr. free and houses be constructed in groups.
- A-12 (o) Bahuguna's movement is at the behest of foreign powers. He is like chandraswami.
- E-23 (p) Landlords who have taken the compensation for their houses/have to take 10% balance, their houses should be taken over by THDC and given to tenants on rent.
- E-26 (q) Work and Muslim community be got done by muslims only.
- E-28 (r) Imambada and Karbala be constructed.
- E-27 (s) Kabristan, Idgah, Masjid be constructed.
- E-35 (t) For Satsang Bhawan at NTT 200 Sq.Mtr. land be allotted.
- E-44 (u) Gurudwara be constructed with all facilities at NTT near Bus Stand.
- E-65 (v) Bagi Village claims that their land has been taken without any compensation.
- F-4/G-25/G-36 (w) Bridges at Pipaldali and Siyansu be made.

- F-5 (y) Shops around ring road be given.
- G-19 (z) Compensation for common land of villages.
- H-5 Theliwalas be given shops/Rs.2.00 lakhs cash.

XXIII. ENVIRONMENT

33. A-5 (a) Dam is being constructed for the capacity of 8.5 Ha., but the lake will destroy the Dam.
- A-5 (b) The water of Ganga will be spoiled and it will create land sliding.
- A-5 (c) The original source of water have been stopped due to blasting.
- B-23 (d) Situation of environment is grave. No tree planted.
- C-19 (e) Heavy vehicles are spreading dust.
- E-13 (f) No regular Environment Cell constituted.

XXIV. NATIONAL REHABILITATION POLICY BE MADE:

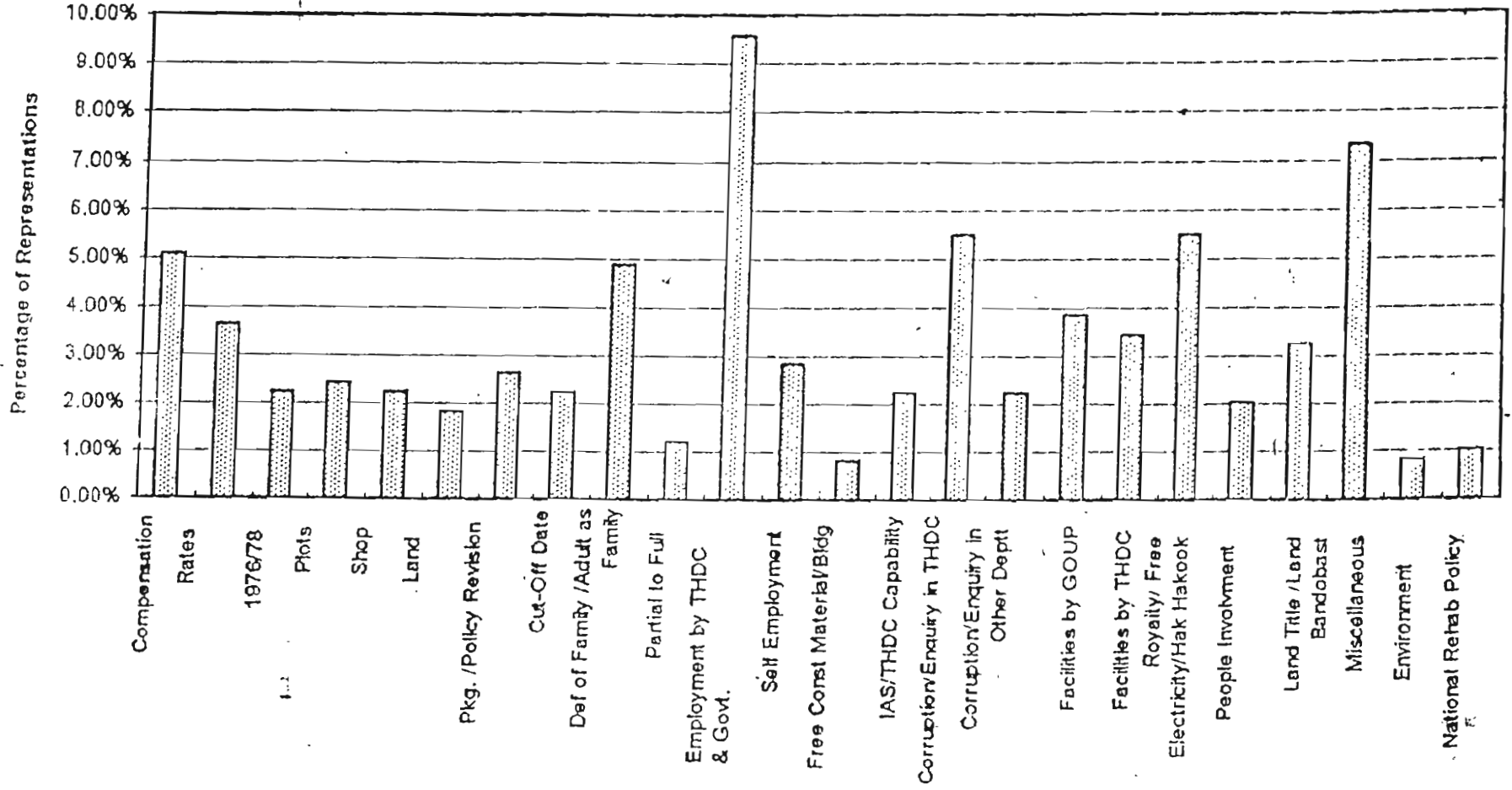
E-54/F-12/G-33/
G-40/J-12/E-115/C-13

Major Issues in Representations
(Percentage in Descending Order)

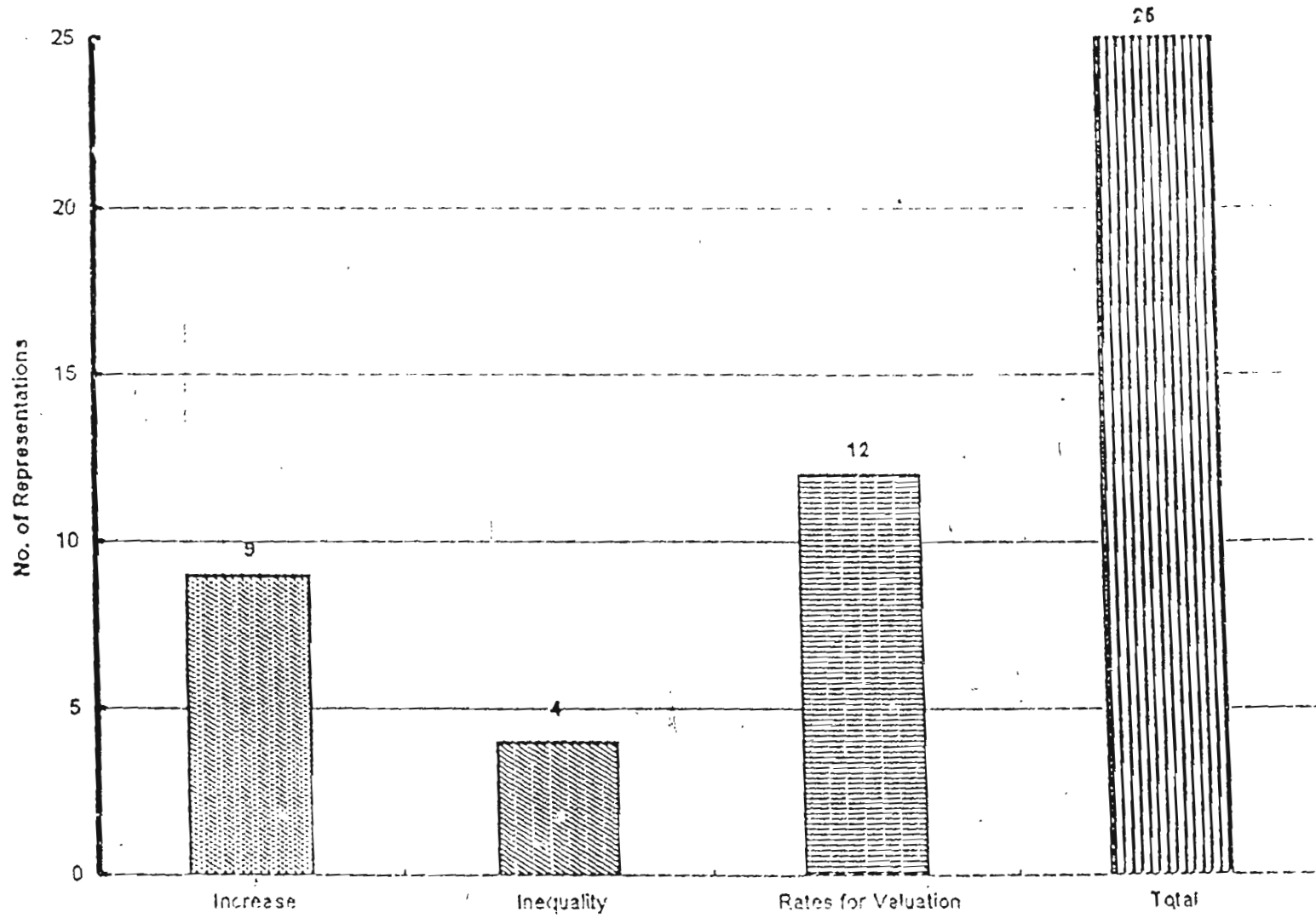
S. No.	Category	Representations	Percentage
1	Employment by THDC & Govt.	47	9.57%
2	Misc.	36	7.33%
3	Royalty/Free Electricity/Hak Hakook	27	5.50%
4	Corruption / Enquiry in THDC	27	5.50%
5	Compensation	25	5.09%
6	Def. of Family/Adults as Family	24	4.89%
7	Facilities by GOUP	19	3.87%
8	Rates	18	3.67%
9	Facilities by THDC	17	3.46%
10	Land Title/Land Bandobast	16	3.26%
11	Self Employment	14	2.85%
12	Package/Policy Revision	13	2.65%
13	Plots	12	2.44%
14	1976/78	11	2.24%
15	Shop	11	2.24%
16	Cut-Off Date	11	2.24%
17	I.A.S./THDC Capability	11	2.24%
18	Corruption / Enquiry in Other Deptt	11	2.24%
19	People Involvement	10	2.04%
20	Land	9	1.83%
21	Partial to Full	6	1.22%
22	Nation Rehab. Policy	5	1.02%
23	Free Const Material/Bldg	4	0.81%
24	Environment	4	0.81%

Total Written Representations = 491

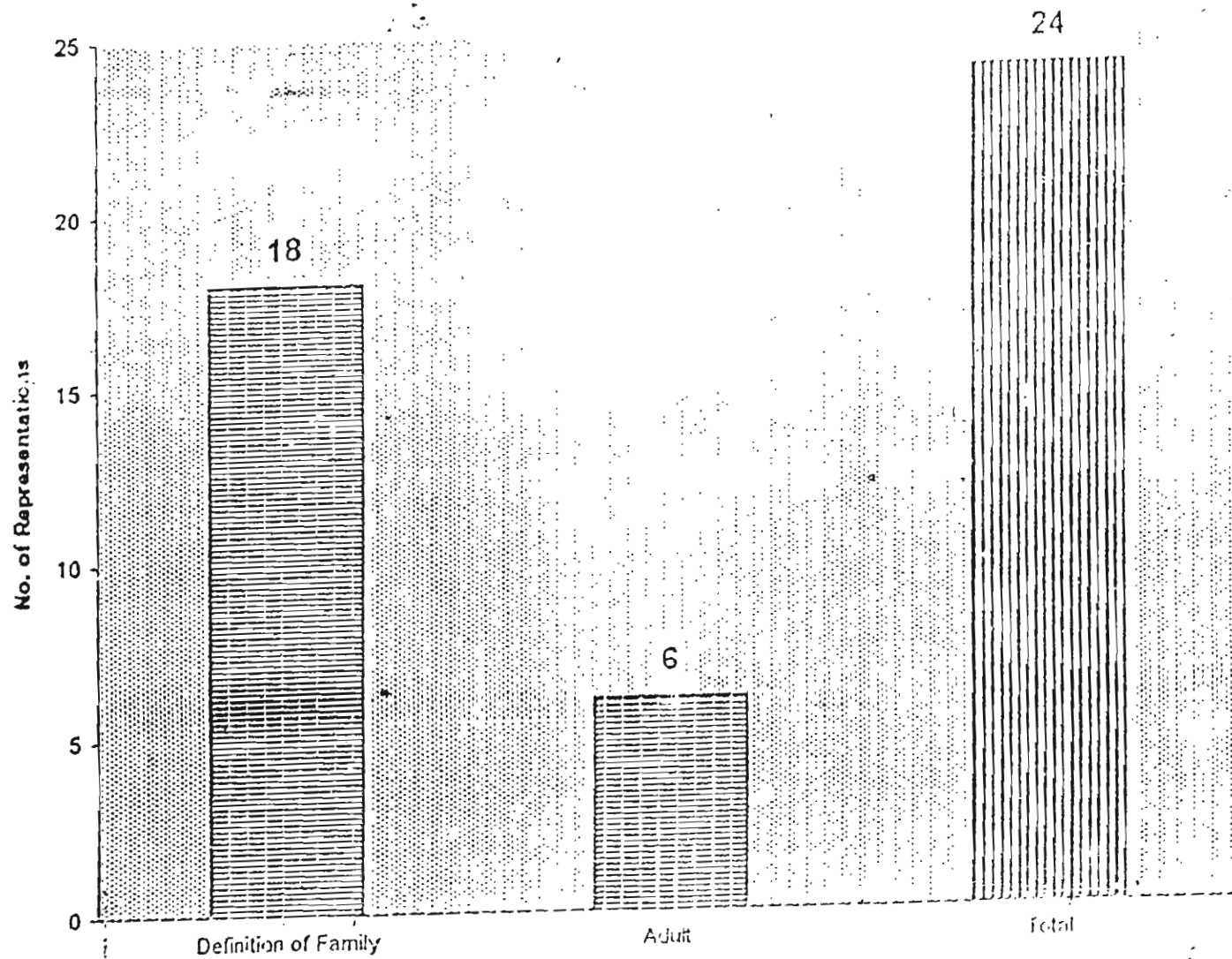
Graphical Presentation of Major Issues



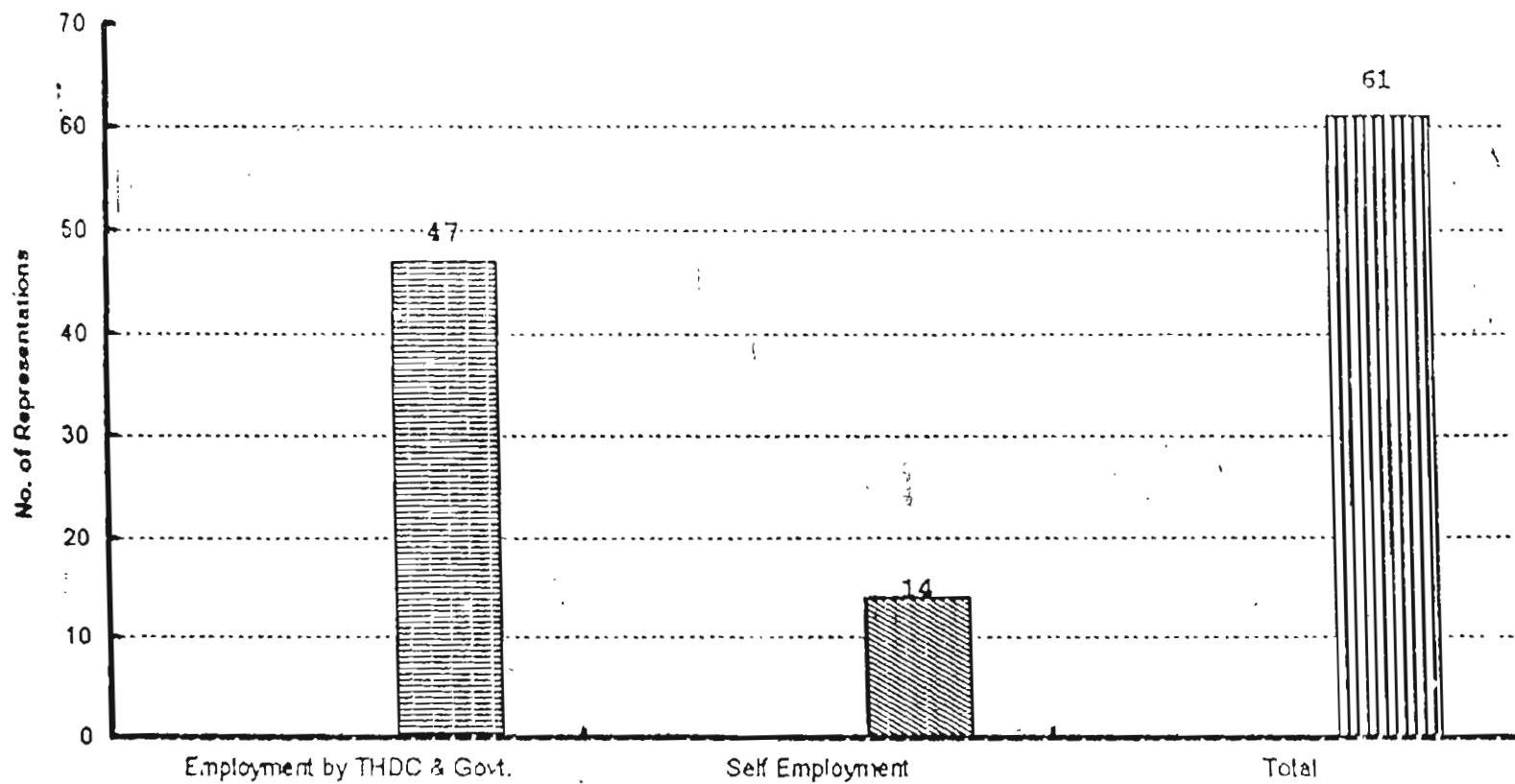
Graphical Representation Of Compensation (S. No. 1)



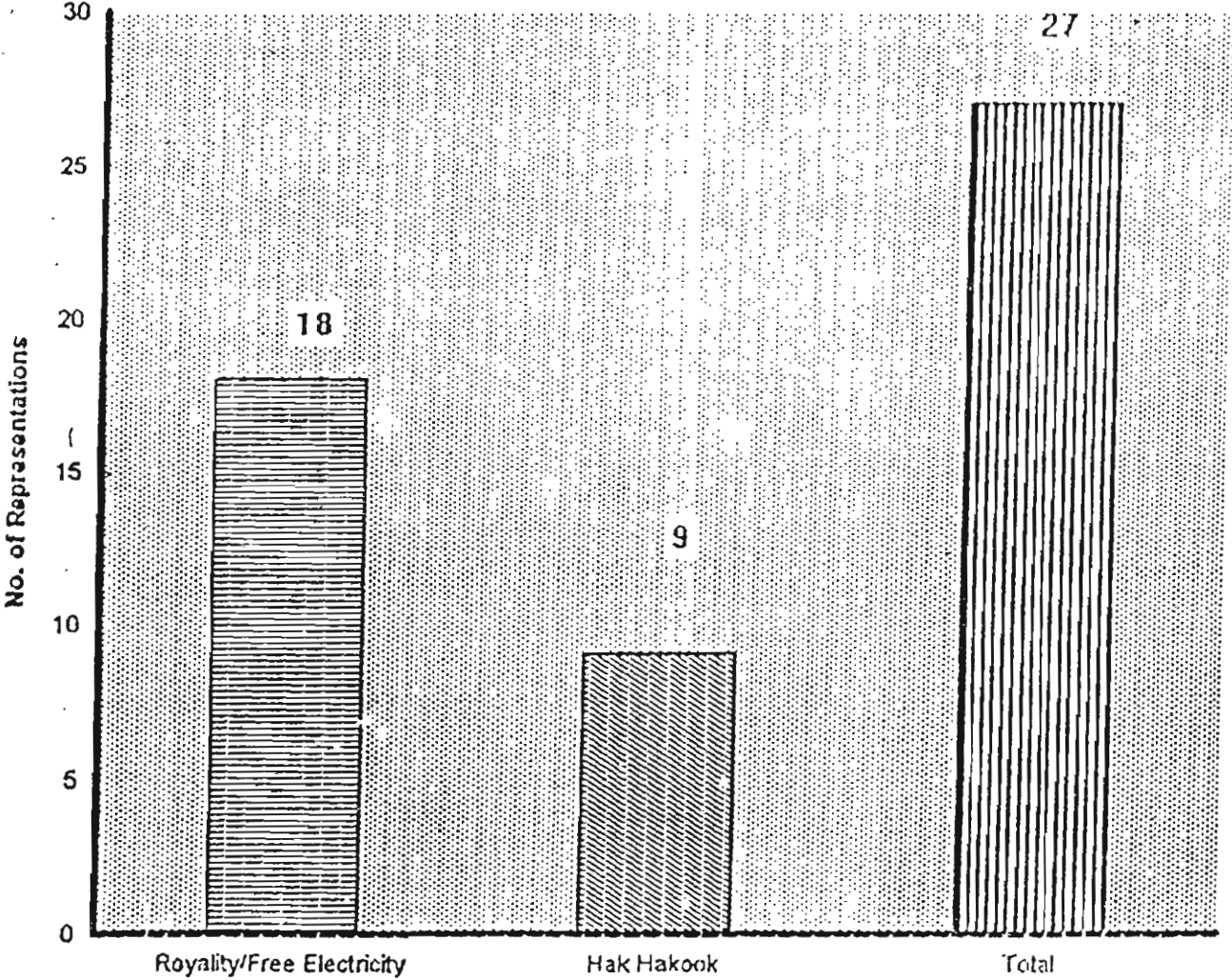
Graphical Representation of Family (S. No.)



Graphical Presentation of Employment (S. No. XI)



Graphical Presentation of Rights (S. No. XIX)



R&R POLICY AND CHANGING ENTITLEMENT PATTERNS

Examination of R&R Policy Evolution In Important Projects

(Contributed by Prof. Parasaraman)

Introduction:

The Resettlement and Rehabilitation entitlement experiences of people affected by large and medium reservoir projects in the country have been uneven and heterogeneous. In the absence of a uniform R & R policy, the state governments in most cases have designed their own policy. These would differ in content for different projects. Thus each state would have its own policy guidelines which would change for different projects in different points of time. With each project the scope of entitled categories as well as the nature of entitlement has changed. Increasing emphasis towards a uniform R & R policy has led to the incorporation and consolidation of the alterations in the earlier policy guidelines, towards creating a general policy applicable to the later and forthcoming projects. *In many cases where the rehabilitation work of earlier projects had reached some stage of completion, the incorporated changes in policy were made applicable and entitlements redefined accordingly. The policy changes generated many more entitlements which were honoured sometimes decades after displacement and resettlement had taken place.*

The following exercise is an attempt to trace the nature of changes in the R & R policy over a period in time with specific reference to:

- The Upper Krishna Project in Karnataka
- The Major and Medium reservoir projects of Orissa, esp. the Rengali Multipurpose Project and the Upper Indravati Project
- The Sardar Sarovar Project in the states of Gujarat, Maharashtra and Madhya Pradesh.

The Upper Krishna Project.

The Upper Krishna Project, stage 1 has been divided into phases 1), 2) and 3).

Phase 1 : Constructing a dam at Narayanpur.

Phase 2 : Constructing a dam over river Krishna at Almatti.

The phase 1 began in the late sixties. Between 1978 and 1986, the World Bank assistance was obtained for phase 1.

In 1988 the project proposal for phase 2 was sent to the WB for appraisal.

The first land acquisitions for phase 1 took place in the early '70's. Coherent Rehabilitation policy was non-existent at that point of time. A series of government orders and resolutions from time to time would define the nature of rehabilitation options made available to the displaced families. These would keep changing from time to time.

To understand the nature of impact these changes would have on the erstwhile displaced families as also the ones to be displaced eventually as the projects grows, it would be useful to look at how R & R policies have taken shape over a period of time.

January 1986	The project proposal for UKP Phase II) sent to the Govt for discussion with the World Bank for assistance.
February 1988	The WB appraises project phase II)
April 12, 1989	Staff appraisal report of WB defines R&R policies to be adopted for Stage I), phases I) & II) of the UKP.
June 16, 1989	Development credit agreement between the government of Karnataka, IDA and the WB. defines ' displaced families', "displaced persons", R&R package for the PDF.
March 2, 1990 - March 3, 1994	There were five GO issued regarding the R & R.
January 13, 1993	G.O.No.RD 211 REH 92. inclusion of "major sons", " major brothers", " unmarried major daughters" etc.
May 15, 1995	G.O.No.RD 21, REH 94(P)

By March 1988 the R & R policy for the Stage I), phases I) and II) of the UKP had defined the categories of displaced persons and their respective entitlements as follows.

Categories of P.D.F	Entitlements	
• Landowning P.D.F		
1) Lost all farmland (<2.5ha, >10ha.) and lost house.	Grant of Rs.30,000 for buying 1.5ha of IR. land or 3ha of UIR. agricultural land.	
2) Lost all farmland (<2.5ha, >10ha) but not lost house.	"	
3) Lost part of land, retained less than 1.5ha. & lost house.	IGS for each P.D.F with 25% govmt. subsidy in selected sectors. (till Aug.1987)	By Feb.1988, an additional cash grant of Rs.10,000 to purchase land or choose appropriate IGS.
4) Lost part of land, retained less than 1.5ha. not lost house.	"	"
6) Lost part of land, retained more than or equal to 1.5 ha. lost house.	IGS for each P.D.F with 25% govmt. subsidy in selected sector.	
7) Lost part of land, retained more than or equal to 1.5ha. not lost house.	"	
8) Lost no land, only house.	"	
• Landless P.D.F		
5) Lost house	Long term lease of upto 2ha. on cultivable wasteland	After Feb.1988, cash grant of Rs.10,000 to purchase 0.5ha. of Ir.

	(C & D class land). cash grant of Rs.10,000 to raise forest.(till Aug.1987)	land or 1ha.of Unlr. land.
--	--	-------------------------------

The subsequent Government Order {No. RD 21 REH. 94(P)} issued on the 15th May 1995, redefining the R&R policies were made applicable to Stage I), Phases I) & II) of the UKP. Not only was the definition of the P.D.F (Project displaced family), altered substantially, also many more categories were deemed entitled for rehabilitation benefits. The nature of entitlement itself underwent substantial changes.

Categories of P.D.F		Entitlement
<ul style="list-style-type: none"> Landowning P.D.F 		
P.D.F retaining no land after acquisition for the project.		ex gratia amount between Rs.20,000 to Rs.60,000. (in addition to the compensation paid as per the land acquisition Act).
P.D.F retaining less than or equal to 1.5ha of Ir. land or 3ha. of Unlr. land.		provision of Rs.20,000 worth of IGS scheme.
P.D.F retaining more than 1.5ha. of Ir. land or 3ha. of Unlr. land.		ex gratia of not more than Rs.5000 towards 25% of IGS scheme.
<ul style="list-style-type: none"> Landless P.D.F 		0.5ha. of Ir. land or 1ha. of Unlr. land. Ex gratia amount of maximum Rs.20,000 towards an IGS.
<ul style="list-style-type: none"> All categories of P.D.F 		<ul style="list-style-type: none"> House plot of size, 100sqm to 400sqm. at the resettlement site or Rs.2500. Monetary assistance for shifting. Subsistence allowance of Rs.2800 per P.D.F / month for six months.
Inclusions via G.O.No. RD 211 REH 92, 31st December 1992. The cut off dates for eligibility being ; <ul style="list-style-type: none"> 18 years on 1.1.1984, incase of Narayanpur dam. 18 years on 1.1.1993, incase of Almatti dam. same cutoff dates apply in case of major daughters. 	<ul style="list-style-type: none"> Major brothers of landowning P.D.F/ their widows. Major sons of landowning P.D.F. Major sons of landless P.D.F. Major daughters aged 35yrs or more and unmarried, of both landowning and landless P.D.F. 	<ul style="list-style-type: none"> House plot of size, min.100sqm at the resettlement site or Rs.2500 ex gratia grant of Rs.22000 towards house building.

- Comparative differences in the categories and entitlement in the R & R policy for the Upper Krishna Project, stage I), phases I) & II).

Till August 1988		By May 1995	
Categories	Entitlement	Categories	Entitlement
Landowning P.D.F, who had lost all land.	ex gratia payment upto Rs.30,0000 to purchase land.	Landowning P.D.F, who had lost all land.	ex gratia payment between Rs.20,000 to Rs.60,000 for land purchase.
Landowning P.D.F, who had retained part of their land.	ex gratia grant of Rs.10,000 for IGS or land purchase.	Landowning P.D.F, who had retained part of their land.	ex gratia grant of Rs.20,000 for IGS or land purchase.
Landless P.D.F	ex gratia grant of Rs.10,000 to purchase land or IGS.	Landless P.D.F	0.5ha of Ir. land or 1ha. of Unlr. land. ex gratia grant of Rs.20,0000 for IGS.
P.D.F who have lost their houses	10 cents of house area at the resettlement site.	all categories of P.D.F	House site 100sqm to 400sqm at the resettlement site or Rs.2500 subsistence allowance of Rs.2800 per month per P.D.F for the first six months.
		Inclusion of the following in the categories of P.D.F, landed as well as landless. major brothers /widows major sons unmarried daughters aged 35 years or more	House site of atleast 100sqm at the resettlement site/ Rs.2500 House building grant of Rs.22,000

Acquisition of agricultural land for UKP, Stage I), phase I) of the project had taken place in the seventies. The dispensation of rehabilitation therefore took place almost a decade after displacement. The initial determination of claims towards rehabilitation relief was dependent on land ownership rights when the land was acquired a decade back. The later inclusions via G.O No. RD 211 REH 92, was to take into account the fact that when resettlement and rehabilitation are separated in time by many years, rehabilitation reliefs were payable in accordance with land ownership pattern at the latter date than the former. This also explains the logic behind determining the cut off date for major sons, major brothers and major daughters as 1.1.84 for the Naraynapur dam (phase I) and 1.1.93 for the Almatti dam (phase II).

For details refer to annex:

- Govmt. of Karnataka, Rehabilitation & Resettlement plan for the Upper Krishna project, Stage I), Phase II, Nov. 1988.
- G.R.No.RD 21 REH. 94 (P), Bangalore, date: 15 May 1995.

• The changes in R&R policy of major and medium reservoir projects in Orissa.

Date of notification	Categories	Entitlements
GR. No. 35054 - FC - RL - 4/73, Department of Irrigation & Power, date : 6.12.73 sub: Rengali multipurpose project.	"Displaced families"(D.F), "whose land have been acquired for the project"	3 acres of reclaimed Ir. land or 6 acres of reclaimed UnIr. land
	" each displaced family"	0.3 acres of homestead land if available.
GR. No. 13169, date : 20 April, 1977	Landowning D.F	Entitlements
	D.F. retaining less than 3 acres of land after acquisition. Lost house.	3 acres of reclaimed Ir. land or 6 acres of reclaimed UnIr land.
	D.F. retaining less than 3 acres of land. not lost house.	"
	In partially submersible villages (PSV), D.F losing house but retaining less than 3 acres of land.	"
	(PSV) D.F having less than 3 acres before acquisition and lost house.	"
	Encroacher D.F. losing encroached land	"
	Landless D.F	"
GR. No. 30079 - RL - 2/77, Date : 14 Sept, 1977. sub: amendment to GR No. 35054.	Inclusion of landless persons as under D.F	
GR. No. 18473 - RL - 246/78, date : 20.5.1978	• Landowning D.F	3 acres of reclaimed Ir land free of salami plus compensation
	• Landless D.F	"
	• Unobjectionable Encroacher D.F. in the submersible areas.	"
	• All categories	house site upto 0.5 acres in resettlement area.
Letter No. 7213, date: 11.2.83, Irrigation and Power department.	All categories of D.F	wherever land is not available, cash grant of Rs. 2160 per acre of entitled unirrigated land.
GR. No. Irr. III. UIP. 25788 - 240, date : 3 January 1989 (applicable to all major and	All categories of D.F	5 acres of UnIr. land / 2.5 acres of Ir. land / cash grant of Rs. 17,875 (@ Rs. 2500 per acre for 5

medium reservoir projects in Orissa.)		acres of UnIr. land) 0.5 acres of homestead land.
GR. No. Irr. UIP - 25/88 - 8554. date : 28 Feb. 1989	All categories of P.D.F	Cash grant in lieu of 5 acres of UnIr. land enhanced to Rs.20075 (@ Rs.2900 per acre).
Letter no. 43782/I&P/ Maj - Irr - III - UIP - 33/89 date: 25 Oct 1989 sub: clarification of the definition of family in GR. No. 13169/77	Only minor sons of the D.P. to be included in his family. Major and married sons who are 21 years or more were to be treated as a separate family.	
GR. No. 31888 - Irr - III- UIP @ 8/90 date : 21 August 1990	<ul style="list-style-type: none"> Major sons more than 18 years irrespective of their marital status to be treated as separate family. Physically infirm and mentally handicapped persons to be treated as separate family. 	
	All categories	Rs.500 per month per D.F as maintenance allowance, for a period of 1 year.
Letter No. 33233 - Irr - III - SUB - 20/91 date : 11.12.91	All categories	Rs.23,200 / 2.5 acres of UnIr. land/ 1.25 acres of Ir. land. 20 decimals for house site.
GR.No. 4580 - Irr - III - UIP(R) - 18/91 date : 4th Feb 1992	All categories of D.F	House building assistance of Rs.17000 per family.
GR. No.13446 - Irr - UIP @ - 13/91 date : 20 April 1992	Inclusion: minor orphans as separate family.	
GR.No. Irr - UIP @ 13/91 25100/Irr. date: 14 July 1994	Inclusion: divorcees with dependent child/children and divorcees without children but no definite source of livelihood.	

Comparative differences between the categories and entitlements in the R & R policy of the Rengali Multipurpose Project , (1973 - 1983) and the Upper Indravati Project (1989 - 1992).

The Rengali Multipurpose Project had a set of Rehabilitation policy that was defined primarily under GR.NO. 13169, dated 20.4.1977. Till about 1989 these policies with a few changes, were made applicable to other major irrigation projects like the Upper Kolab and the Upper Indravati projects. Subsequent changes brought through GR.No.31888, dt.21.8.90, talking for the first time interms of a uniform R&R policy for all reservoir projects in the state were applied to the later projects like The Indravati.

Categories	R & R policy for Rengali Multipurpose project, 1973 - 1983	R & R policy for the Upper Indravati project, 1989 - 1992	
	Entitlements	Phase I	Phase II
		Entitlements Phase I ('89 - '90)	Entitlement Phase II ('91 - '92)
Landowning D.F	<ul style="list-style-type: none"> • 3 acres of irrigated land or 6 acres of unirrigated land or Rs.2160 per acre ,for 6 acres • upto 0.5 acres of land for house site. 	<ul style="list-style-type: none"> • 2.5 acres of irrigated land or 5acres of unirrigated land or Rs.18250. • 0.5 acre of homestead land or Rs.1825. • house in govt. colony and house building assistance of Rs.9500. • Rs 500 per month per D.F for one year 	<ul style="list-style-type: none"> • 1.25 acres of irrigated land or 2.5 acres of unirrigated land or Rs.20,000. • 0.2acre of homestead land or Rs.3200 • house in govt colony or Rs.17000. • Rs.500 per month per D F for one year
Landless D.F	"	"	"
Major sons of the above if more than 21 years and married.	"	"	"
Major sons if more than 18 years irrespective of marital status	---	"	"
Physically handicapped and mentally retarded persons.	---	"	"

Minor orphans	--	"	"
Divorcees with or without children with no dependable source of livelihood.	--	"	"

For details refer to anex:

- Circulars and Orders on Rehabilitation Policy for major and medium Irrigation Projects of the State, Govmt. of Orissa, Department of Irrigation.

THE CASE OF SARDAR SAROVAR PROJECT

(Contributed by Prof. Parasuraman)

The changes in the R & R policy of Gujarat Government.

According to part VIII) of GR.No.RHB - 1085D, date:1 November 1985, the difference in the entitlements between the orders based on G.R.No.Misc.RES - 1078 - Amenities/Part - III/K - 5, dated 11 June 1979 and 1st November 1985 are to be made available to the oustees.

Date of notification	Eligible categories	Entitlement
GR. No.RHB - 1085 D date : 1 November 1985	Landowning displaced family (D.F) who has lost more than 25% of land due to acquisition.	min.2ha of irrigated land or cash grant to purchase alternative land .
	Landless D.F	To prepare a IGS under NREP, IRDP, TSP etc.
	All categories	House site (40' X 60') Rs.750 per D.F as resettlement grant Rs.500 grant in aid.
	Inclusion: major sons as separate families.	
GR.No.RHB - 7087 - (23)/D date : 14 Dec 1987	Inclusion: Oustee families cultivating government waste land or forest land.	maximum of 2ha of irrigated land or cash grant to purchase 2 ha of land.
	Major sons of above.	"
GR.No.REH - 7087- (76)/D, date: 17 Dec 1987	Landless oustee family	maximum of 2ha of irrigated land.
GR.No.REH - 7087 - CMP - 12 - 83 - D, date : 14 Dec 1987	All categories of D.F	Subsistence allowance of Rs.15 per day for 25days a month for 1 year.

The R & R policy of the states of Madhya Pradesh, Gujarat and Maharashtra for the Sardar Sarovar Project in comparison to the award laid down by the Narmada Water Dispute Tribunal.

The NWDT award was laid down in 1979. The later changes in the R & R packages of the three states were brought about in the mid to late '80s. The changes acknowledged the entitlement of many more people and also expanded the nature and scope of entitlement. The inclusion of major sons in all the categories of D.F and major daughters also(incase of Maharashtra) towards independent entitlement of the entire rehabilitation package. The cut off date for the determination of majority was kept as 1.1.87.

Eligible categories	NWDT award Entitlement	Madhya Pradesh entitlement	Gujarat entitlement	Maharashtra entitlement
Landed oustees	minimum 2ha .irrigation to be provided by the state.	min. of 2ha and max. 8ha. irrigation to be provided by the state.	min. of 2ha. irrigation provided by the state.	min. of 2 ha. ma subject land ceili in the state. irrig provided by the state.
Encroacher oustee	----	Treated as landed oustee subject to conditions.	min.2ha of land and compensation for acquired encroached land as ex gratia payment.	2 ha of land and compensation fo balanced land encroached upor
Landless oustees	----	agricultural labourers and SC/ST will get Rs.290000 each for productive assets, other landless, Rs.19,500	2 ha. of land for agricultural labourers.	1ha of land ##
Major sons of all the above categories.	No land.	cash compensation depending upon the category.	2ha of land. cut off date; 1.1.87	1ha. of land. cut off date; 1.1.87
Eligible categories	NWDT award Entitlement	Madhya Pradesh entitlement	Gujarat entitlement	Maharashtra entitlement
Unmarried major daughters.	----	----	----	1ha. of land. cut off date; 1.1.87
Landless categories of oustee families.	house plot measuring 18.23 X 27.43m	house plot of 542 sqm.	house plot of 500sqm	house plot of 500sqm
Major sons	"	"	"	----
Major daughters	----	----	----	"

<ul style="list-style-type: none"> • All categories • All major sons incase of Gujarat • All major sons and major, unmarried daughters, incase of Maharashtra. 	<ul style="list-style-type: none"> • Grant in aid of Rs.500, • Resetlement grant of Rs.754 	<ul style="list-style-type: none"> • Grant in aid in the range of Rs.500 to Rs.11,000 for different categories. 	<ul style="list-style-type: none"> • Subsistence allowance @ Rs.15 per day for 25 days in a month for 1 year • Rs.754 per family • grant in aid Rs.500 • Rs.5000 to Rs.10000 to buy productive assets and house construction. 	<ul style="list-style-type: none"> • Subsistence allowance @ Rs.15 per day for 25days a month for 1 • Rs.750 per family • grant in aid t Rs.500
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For details of the R & R terms for the Sardar Sarovar Project refer to: Anex: Salient Features of Gujarat policy; Salient Features of Madhya Pradesh Policy; Salient Features of Maharashtra Policy; The award laid down by the NWDT

Cost of Rural RehabilitationSARDAR SAROVAR PROJECT

Sl.No.	Item	Cost
1.	Cost of agricultural land (2 Ha.)	1,00,000/-
2.	Benefit for permitting free use of usable material of old house or purchase of new tiles	3,000/-
3.	Cost of civic amenities	
	a) as per NWDT Award	30,400/-
	b) as per liberlisation package of Gujrat	32,675/-
4.	Grants :	
	i) Subsidy for purchase of productive assets	7,000/-
	ii) Subsistence Allowance	4,500/-
	iii) Resettlement Grant	1,410/-
	iv) Transportation	10,950/-
	v) Stamp Duty Charges	10,800/-
	vi) Registration Charges	1,500/-
	vii) Grant for construction of plinth of house	10,000/-
	viii) Either ploughing of land or a maxm. grant	2,000/-
	ix) Electrification	2,500/-
	x) Temple	1,000/-
	xi) Space for cremation	750/-
	xii) Irrigation	13,700/-
	Total :	2,32,185/-

COST OF REHABILITATION PER RURAL PAF
TEHRI PROJECT PACKAGE

	1993	1996-97	Proposals under consideration	Remarks
a) Compensation for house (Average Value)	80,000	80,000	80,000	
b) Benefit for permitting free use of usable material of old house	5,000	5,000	5,000	
c) Compensation of land considering average holding of 1 acre and solatium, deducting the adjustment amount against new allotted land	72,600	1,25,000(*)	1,25,000(*)	(*In case holding is more than the average of 1.0 acre, benefit available to the family is comparatively much more. For example, compensation for 2.0 acres would be :
d) Interest on compensation for average 3 yrs. i.e. from the date of Sec.4(i) notification to the date of award @ 12%.	36,700	90,000	90,000	
e) Cost of 2.00 acres land, land for civic amenities (0.31 acres) & cost of development	2,80,900	3,92,700	3,92,700	1996-97 Rs.4,50,000 New Proposal Rs.4,50,000
f) Cost of 200 Sq. mtrs. residential plot	3,500	5,000	5,000	
g) <u>Grants</u>				
i) Subsidy for seed & fertiliser	2,000	4,000	4,000	
ii) Resettlement grant plus incentive grant for shifting within scheduled time	5,000	20,000(#)	20,000(#)	(#) Including incentive for shifting within prescribed time.

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COMPARISON BETWEEN VARIOUS PACKAGES

S.No.	Category	Madhya Pradesh Package	Gujrat Package	Maharashtra Package	THDC Package	Upper Krishna	Upper Indravati	Ranjeet Sagar
1.	Landed Family	2 Hactres 50% of compensation and remaining 50% adjusted against cost on allotted land will be recovered in 20 yrs. instalment.	2 Hactres Cost of the allotted land recovered from compensation. The difference will be borne by Gujrat Govt. as ex-gratia	2 Hactres Same as in M.P.	2 Acres If the cost of acquired land is more he will be paid the difference, if it is less the difference is not recovered.	Compensation as per act and ex-gratia between Rs.20,000/- to 60,000/-	2.5 acre un-irrigated land/1.25 acres irrigated land and .20 acre house plot or Rs.20,000/- for land and Rs.3,200/- for house plot.	Compensation as per act and Rs.40,000/- per family.
2.	Major Sons	Separate Family. Cash compensation only	2 Hactres 1.1.87 as cut-off date	1 Hactre 1.1.87 as cut-off date	No provision	100 sq.mtrs. house plot Rs.2,500/- and Rs.22,000/- as ex-gratia grant for house building. Cut-off date 1.1.84 for Narayanpur Dam. 1.1.93 for Almatti Dam.	As above, if more than 20 years and married.	No Provision.
3.	Major unmarried daughter	No Provision	No Provision	As above	No Provision	- Do - 35 yrs. or more on cut-off date as above.	No Provision	No Provision
4.	Widows	No Provision	No Provision	No Provision	No Provision	As above.	No Provision (Divorcee included)	No Provision
5.	Encroachers	Entitled for compensation	2 hactres Prior to 1 yr. of notification under Section IV.	2 Hactres land and compensation for balance as ex-gratia	Not existing in rural, however, for urban PAFs provision exist.	No Provision	No Provision	No Provision

		500 sq.mtrs. plot free to oustees' family and their major son and compensation of house as per LA Act.	500 sq.mtrs. plot to oustees' families and their major daughter and compensation of house as per LA Act.	Provision for 2 Hactre for agricultural labours	0.5 Hactre of irrigated or 1 Hactre of un-irrigated land and ex-gratia upto maximum of Rs.20,000/- towards an IGS.	No Provision	No Provision
	a) Rs.29,000/- for SC/ST. b) Rs.19,500 to others.						
7. House	Plot of 542 sq.mtrs. free to oustees families and their major son and compensation of house as per LA Act.	500 sq.mtrs. plot free to oustees' family and their major son and compensation of house as per LA Act. Rs.10,000/- to construct pucca house and Rs.5,000/- to purchase productive assets.	500 sq.mtrs. plot to oustees' families and their major daughter and compensation of house as per LA Act.	200 sq.mtrs. land at nominal rate of Rs.330/-. The size of plot is being revised to 300 sq.mtrs. and compensation of house at a minimum of Rs.40,000/-	100 to 400 sq.mtrs. plot or Rs.2,500/- and Rs.22,000/- for House Building Grant.	0.2 acres land or Rs.3,200/- and Rs.17,000/- or house in Govt. colony with 2 rooms, 1 kitchen 1 bath with asbestos roof.	Payment as per L.A. Act and a) Rs.70,000/- in Himachal b) Rs.10,000/- for house upto Rs.300 sq.yds. and Rs.15,000/- for larger houses in J&K
8. Partially Affected Families	No Provision	No Provision	As Per Policy	Provision of Rs.20,000/- worth of IGS scheme who are left with less than 1.5 Ha and Rs.5,000/- for those who are left with more than 1.5 Ha of land.	No Provision		
9. Employment	Not mentioned	Preference in employment	50% reservation in ITI and 5% reservation for PAP's children in Class III & Class IV. Rest in Govt./Semi Govt./Local Authority.	Preference in employment.	Not mentioned	Not mentioned	No provision

10. Rehabilitation Grant/ Subsistence Grant/Intentive etc.	Rehab. Grant of Rs.11,000/- to landless agricultural farmers and SC/ST farmers. Rs.5,500/- to other farmers and other labours and landless families.	a) Subsistence Allowance of Rs.15/- per day for 25 days in a month for one year. b) Rs.754/- per family with 3% increased per year after June'88. c) Grant-In-Aid upto Rs.500/-.	As in Gujrat	a) Shifting Grant of Rs.5,000/-. b) Intentive for shifting within prescribed date is Rs.15,000/- for urban rehab., Shifting Intentive is Rs.12,000/- and Shifting Grant is Rs.3,000/- to 4,000/-	Subsistence Allowance Rs.2,800/- per family per month for 6 months.	Rs.5,000/- per month per family for one year.	No Provision
11. House Building Advance/loan	No Provision	No Provision	a) Rs.8,000/- for land holders. b) Rs.4,000/- for landless labourer	Upto Rs.1,00,000/- at subsidised interest.	No Provision	No Provision	No Provision
12. Families affected due to construction of Project Colony and Project Works.	Not entitled for rehab. benefits.	Not entitled for rehab. benefit	Not entitled for rehab. benefit.	Entitled for rehab. benefits.	Not mentioned	Not mentioned	Not mentioned

(\pa f.n. package.prn)

भारत सरकार
पर्यावरण एवं वन मंत्रालय
Government of India
Ministry of Environment & Forests

दूरभाष

Teleph

तातः

Telegram : PARYAVARAN,
NEW DELHIपर्यावरण भवन, सी. जी. ओ. बॉम्बेस्ट
PARYAVARAN BHAWAN, C.G.O. COMPO

लोदी रोड, नई दिल्ली-110001

LODI ROAD, NEW DELHI-110001

No. 2-19/81-HCT/IA-I

July 19, 1990

Subject: Tehri Dam Project, Uttar Pradesh -- Environmental clearance.

Reference Tehri Hydro Development Corporation Ltd.'s letter No. THDC/C-522 dated 13th December, 1989, regarding the above mentioned project.

2. Tehri Dam Project was initiated in 1972 for an installed capacity of 600 MW, now revised to 2400 MW to be taken up in three stages. The collection of data and preparation of environmental action plans is yet to be finally completed. Meanwhile, an amount of Rs. 440 crores has been spent on various project related works. The Department of Power and the Government of Uttar Pradesh have assured to furnish all the detailed action plans according to a prescribed time schedule and to implement the action plan pari-passu with the implementation of the engineering works.

After taking into account all the factors, the Tehri Dam Project is accorded environmental clearance subject to the following conditions:

- (A) The Project Authorities must get the safety aspects and the design of the Dam approved by the High Level Expert Committee constituted for the purpose.
- (B) Comprehensive Environmental Management Plans must be formulated to the satisfaction of, and got approved from, the Ministry of Environment & Forests in a time bound manner as outlined below:

3.1. Catchment Area Treatment

Obligations of Tehri Hydel Development Corporation (THDC)

- (a) The THDC will, as per the recommendations of the Remote Sensing Applications Centre, UP, identify the critically degraded areas conforming to the "very high" and "high" erodability classification and prepare action plans by 31.12.90 for the treatment of these areas in consultation with the Government of Uttar Pradesh.

- (b) The action plans prepared will ensure that the catchment area treatment is completed before 31.12.1995 on the basis of detailed annual action plans.
- (c) The THDC will put at the disposal of the Government of Uttar Pradesh all the requisite resources annually to implement the action plans.

Obligations of the Government of U.P.

The Government of U.P. will cooperate in the preparation of comprehensive action plans for catchment area treatment by 31.12.1990 and to implement these action plans by 31.12.1995 with the resources provided by THDC.

3.2. Rehabilitation

The THDC will, through a reputed institution, undertake a socio-economic study of the measures needed to ensure that the standard of living of the oustees is not affected due to the project. The study will be completed by 30.6.1991. The THDC will implement such recommendations as may be made by the Ministry of Environment and Forests for rehabilitation after consideration of the study report by the MEF. The rehabilitation package covering population affecting Koteshwar dam as well as those living on the rim of the reservoir and likely to be affected will be prepared before 31.3.1991.

3.3. Command Area Development

The Government of U.P. will prepare a plan for command area development for the areas to be irrigated from the Tehri Project by 31.3.1991 and will implement this package by 31.3.1995.

Cont....p.3.

3.4. Flora and Fauna

THDC will commission a study of the flora and fauna going under submergence as well as that affected by related works in the region so that reclamation plans can be worked out along with setting up of botanical gardens. The study of flora and fauna must be completed by May, 1991 and action plan prepared thereafter to be executed before impoundment commences.

3.5. Water Quality Maintenance

(a) The THDC will set up water quality monitoring stations to monitor the quality of reservoir water.

(b) The THDC will initiate a water quality modelling study - to formulate the measures needed to preserve the water quality and -prepare an action plan to implement the measures recommended by such a study.

3.6. Disaster Management

A disaster management plan will be worked out by THDC by 31.3.1991 in consultation with the likely affected population and the area authorities.

3.7. Bhagirathi Basin Management Authority

The Department of Power will ensure the setting up of the Bhagirathi Basin Management Authority on a statutory basis through legislative action before 31.3.1991.

(C) The completion of studies, formulation of action plans and their implementation will be scheduled in such a way that their execution is pari passu with the engineering works failing which the engineering works would be brought to a halt without any extraneous considerations. These conditions will be enforced, among others, under the provisions of the Environment (Protection) Act, 1986.

N. Bhat

(NALINI BHAT)
Scientist-SE
Member-Secretary

Chairman-cum-Managing Director,
Tehri Hydro Development Corporation,
New Delhi.



टिहरी हाइड्रो डेवलपमेंट कॉरपोरेशन लिमिटेड
Tehri Hydro Development Corporation Limited

NO:THDC/DP/EC/1129

Dated: 3rd Oct., 1996

To

As per list enclosed

Dear Sir,

Kindly refer to Ministry of Power, Govt. of India, Office Memorandum No.19/18/96-Hydel-II dated 17th Sept., 1996 regarding the constitution of an Expert Committee to examine rehabilitation and environmental aspects of the Tehri Hydro Electric Project. I am enclosing herewith the literatures published by the Corporation from time to time, so as to give an idea about the Project features, rehabilitation and environment aspects of the Project before the meetings of the Committee are started.

Regarding further programme of convening the meetings of the Committee, it is submitted that we are in touch with Prof.Hanumantha Rao, Chairperson of the Committee, and we shall revert back to you as soon as the programme is finalised.

With regards,

Yours sincerely,

(D.P.S. Lamba)
Director (Pers.)

Encl: As above

C.C. :

Prof. Hanumantha Rao - For kind information
Chairperson
240-B, Jubilee Hill
Road No.18
Hyderabad - 5000035

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List of documents attached with letter no.THDC/DP/EC/1129 dated 03.10.1996.

1. Documents published by PR Deptt., THDC on Rehabilitation and Environment.
2. Special issue of Ganga Vatarnam.
3. Rehabilitation Policy.



टिहरी हाइड्रो डेवलपमेंट कॉरपोरेशन लिमिटेड
Tehri Hydro Development Corporation Limited

BY COURIER

NO:THDC/DP/EC/156
Dated: 15th October, 1996

To

As per list enclosed

Dear Sir,

Kindly refer to Ministry of Power, Govt. of India, Office Memorandum No.19/8/1996-Hydel-II dated 17th Sept., 1996 regarding the constitution of an Expert Committee to examine the Rehabilitation & Environmental aspects of the Tehri Hydro Electric Project and our letters No.THDC/DP/EC/1129 dated 3.10.1996 and THDC/DP/EC/1510 dated 9.10.1996.

As already informed in the letter dated 9th October, 1996 the first meeting of the Committee has been fixed for 26th Oct., 1996 at 10.30 A.M. in Conference Hall of THDC at 15th Floor, Vikram Tower, 16, Rajendra Place, New Delhi - 110008. Some literature/brochures published by the Corporation have already been forwarded to you.

Alongwith this letter please find enclosed a detailed Note on Rehabilitation & Environmental conditions for your kind information.

With kind regards,

Yours sincerely,

(Signature)
(D.P.S. Lamba)
Director (Personnel)

Encl: As above

c.c.: Shri Hanumantha Rao - For kind information
Chairperson, Expert Committee on
Rehabilitation & Environmental Aspects
240-B, Jubilee Hill
Road No.18
Hyderabad - 500 035

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Extract of documents attached with letter no.THDC/DP/EC dated
5.10.1996.

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टिहरी हाइड्रो डेवलपमेंट कारपोरेशन लिमिटेड
Tehri Hydro Development Corporation Limited

श्री पी० एस० लाम्बा

निदेशक (कार्मिक)

D.P.S. LAMBA

Director (Personnel)

Secretary, Expert Committee

D.O.NO: THDC/DP/124/10

DATED : 31st October, 1996

As per list enclosed

The Committee constituted by the Government of India, Ministry of Power, vide their Office Memorandum No. 19/18/96-Hydel.1] dated 17th Sept., 1996, to examine rehabilitation and environmental aspects of the Tehri Hydro Electric Project had its first meeting on 26th October, 1996. In this meeting, it was decided that next meeting of the Committee shall be held on 16th Nov., 1996 at 1000 Hrs. in Conference Hall of THDC at 15th Floor, Vikram Tower, Rajendra Place, New Delhi - 110 008.

As desired by the members of the Committee, copies of the following are enclosed herewith for your kind information:-

1. Catchment Treatment Plan by Forest Deptt. Jan., 1994 (being sent separately)
- 2(a) Socio-Economic Study by Administrative Staff College of India (ASCI), Hyderabad.
- (b) A Study of Tehri Hydro Development Project and Sardar Sarovar Narmada Project by ASCI, Hyderabad.
- (c) Revised Sardar Sarovar Rehabilitation Package (Tehri Projects revised package already forwarded).
3. Riverside Stability Report by University of Roorkee.
4. Botanical Survey of India Study on Flora.
5. Zoological Survey of India Study on Fauna.
6. Action Plan for Mahaseer by M/s Tropical Consultancy Services Ltd.

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:: 02° ::

7. Water Quality Study by University of Roorkee.
8. Disaster Management Plan.

Demands and representations received by Government are being collected ~~from the~~ Ministry of Power, and shall be forwarded separately.

With regards,

Yours Sincerely,

D. Lamba
[DPS LAMBA]

Prof. Hanumantha Rao
Chairperson, Expert Committee
240-B, Jubilee Hill
Road No.18
Hyderabad - 500 035

- For kind information

N.O.O.

Shri A.K. Agnihotri
Director (Hydel)
Ministry of Power
Shram Shakti Bhavan
Rafi Marg
New Delhi

- For kind information.

LIST OF DOCUMENTS EXAMINED BY THE COMMITTEE

SL. No.	TITLE	INSTITUTIONS	AUTHOR'S NAME	DATE
1.	A Tour Note presented to Expert by Committee, Forest Department, U.P, giving details of plantations are as for site visit.	Tehri Dam Forest Division (1st)		
2.	Tehri Dam Catchment Project - Integrated Watershed Management Project (U.P) - CAT Plans.	Land Survey Directorate (Forest Deptt.), 68, Vasant Vihar-II, Dehradun, U.P.		January, 1988
3.	Land Erosion and Forest Degradation Assessment in the Tehri Dam Catchment Area Using Satellite Remote Sensing Technique.	Remote Sensing Application Centre, Uttar Pradesh.		April, 1991
4.	Effect of Impoundment in Tehri Reservoir on Water Quality.	University of Roorkee		September, 1992
5.	Vegetation of the Tehri Dam Submersible Area: An Environment. Impact Assessment.	Botanical Survey of India Northern Circle, Dehradun.	B.P. Uniyal & Surendra Singh.	1993
6.	Faunal Analysis-Environmental Impact Assessment Study.	Zoological Survey of India. Northern Regional Station, Dehradun.	Supervised by Dr. G.S. Arora. Co-ordinated by Dr. Arun Kumar, Dr. Akhlaq Husain.	March, 1993
7.	Project For Treatment of Tehri Dam Catchment.	Forest Department (U.P.)		January, 1994
8.	Action Plan for Mitigating the Possible impact on Mahaseer Fishery due to construction of Tehri Dam.	Tropical Fisheries Consultancy Services, C-12 Vivek Vihar, Delhi.		April, 1994
9.	Note on - Rehabilitation & Environmental Conditions	Tehri Hydro Development Corporation Limited		October, 1996
10.	Comments on the Technical Reports of the Tehri Dam Project, provided by Expert Committee on Rehabilitation and Environmental Aspects of Tehri Hydroelectric Project, THDC.	Wadia Institute of Himalayan Geology Dehradun		June, 1997

List of letters examined by the committee

Date	Letter/D.O. No.	Subject	From	To
09-02-1988	8-32/FC from Ministry of Environment & Forests	Diversion of 2582.9 ha. of Forest Land (2311.4ha. civil Soyam land and 271.5 ha) Reserve Forest land) For construction of Tehri Dam in Uttar Kashi and Tehri Garhwal Districts	Shri R.S.Bisht signed on behalf of Under Secy., MoEF	Secretary, Forest Department Government of Uttar Pradesh, Lucknow
29-10-1991	THDC/C-522/22855	Action Plans for the Conservation of Flora likely to be affected due to Tehri Hydro Power Complex	Shri S.C.Sharma Dy.General Manager, THDC	Dr B B Sharma Addtl Director BSI
29-10-1991	THDC/C-522/22254	Conservation of Fauna Likely to be effected due to Tehri Hydro Power Complex.	Shri S.C.Sharma Dy.General Manager, THDC	Dr M.S. Jai Rajpuri, Director ZSI Calcutta
3-12-1991	THDC/C-522/22827	Asking for a proposal for study and action plan for conservation of species and their Implementation	Shri S.C.Sharma Dy.General Manager, THDC	Dr B B Sharma Addtl Director, BSI (Telegram)
1-12-1991	293-1/91- 93/Tech./19565	Conservation of Fauna likely to be affected due to Tehri Hydro Power Complex.	Shri S.K.Bhattacharyya, ZSI, Calcutta	Dr G S Arora ZSI, Northern Regional Station
1-12-91	Telegram	Study and action plan for conservation of animal species to be affected by dam	Director, ZSI	S C Sharma Dy General Manager, THDC
1-12-1991	THDC/C-522	Action plans for the Conservation of Flora likely to be affected due to Tehri Hydro Power Complex	Shri R.K.Sharma, Manager, THDC	Shri B.B Sharma Addtl. Director, BSI
01-1992	105-1/91-Tech/49	Conservation of Fauna Likely to be affected due to Tehri Hydro Power Complex.	Dr. G.S.Arora, ZSI, Northern Regional Station	R K Sharma, Manager, THDC
01-1992	THDC/C-524/23586	Conservation of Fauna Likely to be affected due to Tehri Hydro Power Complex.	Shri R.K.Sharma, Manager, THDC	Dr G S Arora, ZSI, Northern Regional Station
01-1992	THDC/C-524/23583	Reminder regarding proposals on Identification of Endangered and Rare Plants & Action Plans for its Conservation	Shri R.K.Sharma, Manager, THDC	Shri B.B Sharma Additional Director, BSI
01-1992	18-1/92-Admn./135	Conservation of Fauna Likely to be affected due to Tehri Hydro Power Complex.	Dr. G.S.Arora, ZSI, Northern Regional Station	R K Sharma Manager, THDC
03-1992	THDC/C-522/24825	Study/Action Plan for Conservation of Flora by Botanical Survey of India	Shri S.C.Sharma Dy.General Manager, THDC	Shri M K Ranjitsinh Addtl Secretary MoEF
04-1992	16/4/90-CBS	Study/Action Plan for Conservation of Flora likely	Shri Keshav Desiraju, Dy Secy., MoEF	Dr B.D.Sharma, Director, BSI

Date	Letter/D.O. No.	Subject	From	To
		to be affected by Tehri Hydro Power Complex		
03-04-1992	91-93/Tech /5819	Conservation of Fauna Likely to be affected due to Tehri Hydro Power Complex.	Shri S K Bhattacharyya, ZSI, Calcutta	S C Sharma Dy General Manager, THDC
18-05-1992	THDC/C-524/25746	Study/Action Plan for Conservation of Flora likely to be affected by Tehri Hydro Power Complex.	Shri R K.Sharma, Manager, THDC	Dr B D Sharma Director, BSI
04-06-1992	THDC/C-524/25614	Study/Action Plan for Conservation of Flora likely to be affected by Tehri Hydro Power Complex.	Shri S.C.Sharma Dy.General Manager, THDC	Dr B D Sharma Director, BSI
28-10-1992	THDC/C-322/28200	Tehri Hydro Power Complex, Environmental Clearance-Submission of Reports 1) Thermal Water Quality Modeling of Tehri Reservoir 2) Rim Stability of Hill Slopes at Village Sides Within 500 M From FRL.	Shri B.B.Raj Senior Manager	Shri R S Sidhu Director, Ministry of Energy, Dept. of Power
06-04-1993	THDC:CMD:30400	Enclosing a report on "Faunal Analysis" and impacts on fauna	Shri S.P.Singh, Chairman & Mg Director, THDC	Shri R.Vasudeva Secretary (Power)
10-05-1993	BSI/NC9(.)93-94 Tech 91	Study/Action Plan for Conservation of Flora likely to be affected by Tehri Hydro Power Complex.	Shri D.K.Singh, BSI	Dr B D Sharma Director, BSI
08-06-1993	THDC/C-524/31286	Study/Action Plan for Conservation of Flora likely to be affected by Tehri Hydro Power Complex.	Shri R.K.Sharma, Manager, THDC	Dr B D Sharma Director, BSI
29-06-1993	BSI/NC	Study/Action Plan for Conservation of Flora likely to be affected by Tehri Hydro Power Complex	Shri D.K.Singh Dy. Director, Botanical Survey of India,	Secretary, Ministry of Environment & Forests
04-07-1993	THDC1027	Enclosing a report on "Vegetation of the Tehri submergence area: An Environmental Impact Assessment"	Shri S.P.Singh, Chairman & Mg. Director, THDC	Shri V.K Dewa
21-07-1993	292/29-1(i)	Plantation of fruit trees in Tehri Dam Project	Shri N.P.Nainwal, Conservator of Forests, Bhagirathi, U.P.	Shri B V Raj, Manager, THDC
01-08-1993	THDC/BSI/682	Vegetation of the Tehri Dam Submergence Area: An Environmental Impact Assessment	Shri R.K.Sharma, Manager (C), THDC	The Chief Conservator, Uttaraanchal Namital
28-08-1993	982/29-19(ii)	Vegetation of the Tehri Dam Submergence Area:	Shri N.P.Nainwal, Conservator of Forests,	Manager, THDC

Date	Letter/D.O. No.	Subject	From	To
		An Environmental Impact Assessment	Bhagirathi, U.P.	
11.10.1993	2-19/81-1A-1	Response regarding the implementation of conditions of environmental clearance for Tehri Hydro Power Complex.	Shri S Maudgal, Adviser, MOEF	Sh. V.K. Dewa, Jt. Secretary, Ministry of Power
22.04.1994	8/24/90-D(T&N)	Catchment Area Treatment plan	Shri V.K. Dewan, Joint Secretary, Ministry of Power	Dr. S. Maudgal, Adviser, MOEF
04.10.1995	429/THDC/C-13	Enclosing minutes of the Co-ordination meeting held at Dehradun on 6th September, 1995.	Shri M.P.S. Tyagi, THDC	General Manager, THDC, Bhagirathipuram, Tehri
22.01.1997	THDC/CMD/502	Water Quality & Rim Stability Study Reports, Classified Data of Discharges//Site of River Bhagirathi	Shri M.L. Gupta, CMD, THDC	Prof. Hanumantha Rao, Chairperson, Expert Committee.
03.02.1997	2-19/81-HCT-IA-I	Response regarding the letter enclosing copy of Prof. Shekhar Singh's letter on different environmental issues pertaining to the Tehri Hydro Electric Project	Shri Viswanath Anand, Addl. Secy., MOEF	Prof. Hanumantha Rao Chairperson, Expert Committee
04.03.1997	12/17/TC/96-97	Comments on the THDC 1992 Reports on "Tehri Dam Reservoir rim Stability of hill slopes and Effect of impoundment in Tehri Reservoir on Water Quality"	Dr. K.K. Purohit, Technical Secy., Wadia Instt. of Himalayan Geology	Shri N.D. Jayal, The Himalaya Trust
24.04.1997	Z-19/81-HCT/IA-I	Tehri Hydro-electric Project	Shri T.K.A. Nair, Secretary, MOEF	Prof. Hanumantha Rao, Chairperson, Expert Committee.
03.05.1997	WTD/41/97	Effect of impoundment in Tehri Reservoir on Water Quality	Shri R. Paramasivam, Dy. Director & Head, Water Technology Division, NEERI	Prof. Shekhar Singh, IIPA
09.06.1997	BSI-30/1/96-Tech	Comments by BSI on Flora on the Draft Report of Expert Committee	Shri Jayashri Bhattacharya, Scientist, SD, BSI, Calcutta	Shri D P S Lamba, Secy., Expert Committee
13.06.1997	THDC/DP/EC/97	Comments of BSI on Flora on the Draft Report of Expert Committee	Secretary, Expert Committee	All Members of Expert Committee
14.07.1997	FAX	Comments of ZSI on Draft Report of Funa by Expert Committee	Dr. JRB Alfred, Director, ZSI, Calcutta	Sh. D P S Lamba Member Secy., Expert Committee.

LIST OF OFFICIALS/EXPERTS MET BY THE COMMITTEE

1. Shri R. Rajamani, Former Secretary, Ministry of Environment and Forest, Govt. of India (07.04.1997).
2. Shri T.K.A Nair, Secretary, Ministry of Environment and Forests, Govt. of India (01.04.1997).
3. Dr. S. Maudgal, Sr. Adviser, Ministry of Environment and Forests, Govt. of India (01.04.1997).
4. Dr. R.K. Mazari, Wadia Institute of Himalayan Zoology, Dehradun (07.04.1997).
5. Dr. L.S. Srivastava, Roorkee University (18.04.1997).
6. Dr. P.C. Navani, Geological Survey of India (18/19.04.1997).



भारतीय प्रशासन विद्यापीठ
 भारतीय प्रशासन विद्यापीठ, नवी दिल्ली 110 002
INDIAN INSTITUTE OF PUBLIC ADMINISTRATION
 INDRAFRASTHA ESTATE, RING ROAD, NEW DELHI-110 002

GRAMS : ADMNIST • FAX : 011-331-9954 • PHONES : 331-7309 (9 LINES)

November 22, 1996

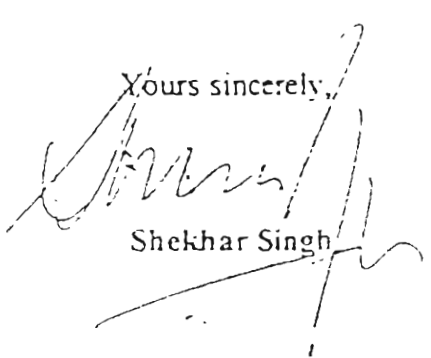
Dear Shri Lamba,

As decided in the last meeting of the Expert Committee, I enclose a list of issues regarding the environment aspects of Tehri project. These issues need to be clarified by the Tehri Hydro Development Corporation (THDC) and/or the Ministry of Environment and Forests (MoEF), as specified.

I would be grateful if you could urgently forward my letter, along with the enclosed list, to the Ministry of Environment and Forests, Government of India, with a request to send the response so that they can be discussed at the next meeting. Copies of this letter, with annexures, may also be sent to the Chairman and members of the Expert Committee. The THDC may also kindly give the required clarifications in time for the next meeting.

With regards,

Yours sincerely,


 Shekhar Singh

Shri D.P.S. Lamba
 Secretary
 Expert Committee
 Tehri Hydro Development Corporation
 15th Floor, Vikram Tower
 16, Rajendra Place
 New Delhi 110008

The Tehri Project: Some Environmental Issues

1. In a presentation made by the Ministry of Environment and Forests (MoEF), for the Prime Minister, in 1993, the following environmental issues were shown as outstanding:

- i) Submission of catchment area treatment plan with cost estimates
- ii) Rehabilitation plan and availability of suitable land for resettlement
- iii) Water quality analysis and treatment plan
- iv) Command area development plan
- v) Flora fauna survey and rehabilitation
- vi) Risk assessment
- vii) Disaster management plan
- viii) Setting up of a basin management authority.

It may be clarified if, since then, all these issues have been sorted out and whether the approval of the Ministry of Environment and Forests has been received for all the studies and reports. [THDC, MoEF]

2. The project is currently treating only the directly draining catchment. However, it is not clear whether this is adequate or acceptable in terms of the environmental requirements of the project. This is especially so because the catchment of both the Bhagirathi and the Bhilangana rivers are historically very unstable and there have been many landslides in the area. Human pressures and activities, including development of roads and agriculture, have further destabilised these catchments. Both in terms of landslides and in terms of siltation, the level of treatment proposed to be given to the catchment might not be adequate to protect the dam or to ensure its predicted life. Unstable catchments would also result in irregular water flow resulting in inadequate water during the dry seasons and the threat of dam failure during the rainy season. The Bhumbra Committee recorded [3.2.2 (3) Page 3-21] that "all the critically degraded catchment areas (2.06 lakh ha. and not just 0.36 lakh ha.) should have been taken up for treatment". No response to this observation seems to have been given. [Reply by THDC, MoEF]
3. The Bhumbra Committee report has pointed out that there is a danger from surplusing from the reservoir (3.1.4, Page 3-9). This issue does not seem to have been adequately answered by the THDC. [THDC, MoEF]
4. The Bhumbra Committee report had raised serious doubts about the reported rates of siltation and life of reservoir (3.2, Page 3-11). In short, the Bhumbra Committee came to the conclusion that the expected silt load was 22.72 ha. meter instead of the 14.5 ha. meter/100 sq. kms/year adopted by the project authorities. No satisfactory answer to this seems to have been provided. [THDC, MoEF]
5. It is also not clear whether any silt monitoring stations have been set up with respect to specific catchments and micro-catchments in Tehri project area. These are essential not only to measure the actual rate of siltation but also to assess the efficacy of the catchment area treatment measures. [THDC, MoEF]
6. It is not clear whether any scientific assessment has been done on which micro catchments contributes how much silt to the dam site (through radioactive isotopes or other such methods) and, as such, the choice of the catchments taken up for treatment is not scientifically understandable. [THDC, MoEF]

7. **Some of the higher catchments have morainic deposits which can pose a significant threat to the life of the project and to the turbines installed in the dam. However, no measures seem to have been taken to stabilise the morainic deposits in the catchments of Tehri. [THDC, MoEF]**
8. **No institutional mechanisms to involve the local people in the management and protection of the catchments seem to have been evolved. Consequently, there is little reason to believe that the afforestation and other vegetative work being done in the catchment would survive after the forest department protection is withdrawn. The Bhumbra Committee also concluded that no effort have been made to involve local people in the catchment area treatment [3.2.2 (3) Page. 3-21]. This also does not seem to have been acted upon. [THDC, MoEF]**
9. **There is a dispute about the extent of area that can be irrigated by the project. Both the Bhumbra Committee (3.7.1, Page 3-42) and the MoEF feel that the water available in the river would not be adequate for irrigating the extent proposed by the project authorities. Current status of this dispute may kindly be clarified. [THDC, MoEF]**
10. **There is an apprehension that surface irrigation in the proposed command of the Tehri project would aggravate water logging problems. MoEF has stated that no plans for drainage have been submitted. The Bhumbra Committee also raised this issue [3.7.1(2), Page 3-45]. Current status may kindly be clarified. [THDC, MoEF]**
11. **Reduce water flow due to dam, especially in a dry season would have adverse impacts on the carrying capacity of the river downstream. This could result in greater levels of pollution both in this river and in the Ganges, of which this is a tributary. Whether any assessment has been done of the impact on water pollution levels due to the dam may kindly be clarified. Whether the possible impact has also been discussed with the Ganga Project Authority may also kindly be clarified. [THDC, MoEF]**
12. **The Bhumbra Committee report had raised concerns about the stability of the hill sides surrounding the reservoir (3.1.3, Page 3-8). It was thought that in case of an earthquake, the hillsides might collapse and the resultant wave might cause dam failure. Whether these issues have been studied and, if so, what are the findings may kindly be clarified. A copy of the study report may also be made available along with the remarks of MoEF. [THDC, MoEF]**
13. **The impact on the riverine ecology of the dam, both upstream and downstream do not seem to have been studied adequately. Apart from the study for Mahsheer no other study seems to be done to determine what changes will occur upstream and downstream, due to impoundment, and downstream due to reduced flow of sediments. This point may kindly be clarified. It might be noted that this issue was also raised by the Bhumbra Committee (3.5, Page 3-35 and 3.8 Page 3-47) [THDC, MoEF]**
14. **The negative health impacts of the reservoir and the canals, especially in terms of breeding of vectors, need to be assessed and preventive measures planned. This does not seem to have happened. This may kindly be clarified. [THDC, MoEF]**
15. **The Bhumbra Committee have raised various questions regarding water logging, sedimentation and siltation (3.7, Page 3-43). These need to be clarified. [THDC, MoEF]**
16. **It is reported that compensatory afforestation for the project is being done in Jhansi division, which is not only far away from the submergence area but also a different ecosystem type. This defeats the whole purpose of compensatory afforestation, for losses in one type of ecosystem cannot be compensated by plantations in another**

type of ecosystem, that also in a distant area. The rationale for this may kindly be clarified. [THDC, MoEF]

17. MoEF may kindly state the basis on which environmental clearance was accorded to the Tehri project, despite the unanimous recommendations of the Bhumbra Committee [MoEF].
18. The MoEF may kindly clarify the current status of pari passu relating to the project, giving details. [MoEF]

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P. ABRAHAM
सचिव
SECRETARY

श्रम शक्ति भवन,
MINISTRY OF LABOUR
श्रम शक्ति भवन, रफा मार्ग,
SHRAM SHAKTI BHAWAN, RAFA MARG,

D.O.No. 19/18/96-Hydel-II

नई दिल्ली-110001

NEW DELHI-110001 Nov 27, 1996.

Dear Prof Hanumantha Rao,

I am writing in response to the letter dated 26.10.96 regarding the reasons based on which the environmental clearance was agreed to the Tehri Hydro-electric Project. You have also requested that either I or a senior representative from the Ministry may attend the next meeting of the Committee for discussions.

2. In so far as the representations and demands received by the Government which led to the constitution of the Committee are concerned, I am informed that the documents have already been sent to Tehri Hydro Development Corporation which would place these documents before the Committee in the next meeting. As regards the environmental clearance for the Project, you would appreciate that the terms of reference of the Committee are basically aimed at examination of the rehabilitation policy as well as the conditions attached to the environmental clearance and to ensure that these are being implemented properly and to suggest remedial measures wherever necessary. In the circumstances, I feel that the Committee need not examine the reasons leading to the environmental clearance.

3. The Committee has been constituted without any representative from the Govt of India. This was done primarily with a view to facilitate Experts' recommendations on the matter. Any clarification which you may need, will be furnished.

With best regards,

Yours sincerely,


(P. ABRAHAM)

Prof. Hanumantha Rao,
Chairperson
Expert Committee on Rehabilitation
and Environmental Aspects,
240-B, Jubilee Hall,
Road No. 18,
Hyderabad-500035.

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Copy to :

(M) T H AC New Delhi

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Issued 22/11/96

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टिहरी हाइड्रो डेवलपमेंट कॉरपोरेशन लिमिटेड
Tehri Hydro Development Corporation Limited

No. THDC/GM/ENV./
Dated : 6th Dec '96

Secretary,
Expert Committee on
Rehabilitation & Environment Aspects
(Tehri Hydro-Electric Project)
15th Floor, Vikram Tower
16-Rajendra Place,
NEW DELHI

Dear Sir,

Sub : THDC Replies to letter dt.22.11.96
of Prof. Shekhar Singh.

With reference to letter No.THDC/DP/EC/96/1893, dated 29.11.96, the replies of THDC to letter dated 22.11.96, submitted by Prof. Shekhar Singh, dated is enclosed for kind perusal.

It may be noted that the status of the issues stipulated vide para one of the letter have been already given in detailed note already circulated to the members vide letter No.THDC/DP/EC/1213, dated 31.10.96. THDC replies for para 2 to 16 is appended. (Reply to para 15 is covered under para 4 to 7 & 10).

Yours sincerely,

(S.C. SHARMA)
G.M./RISHIKESH
CAMP- NEW DELHI

Encl : As above.

circulated to Committee Members on 9.12.1996

2. EXTENT TO CATCHMENT AREA TO BE TREATED UNDER TEHRI PROJECT.

Concern has been voiced that project is treating only the direct draining catchment which may not be adequate or acceptable in terms of the environmental requirements of the project. Argument has been advanced that because the catchments of both Bhagirathi and Bhilangana river are historically very unstable, there have been many landslides and there is destabilisation of the catchment due to human pressures and activities, level of treatment proposed to be given might not be adequate to protect the dam. It has been further stated that unstable catchments would also result in inadequate water during dry seasons and pose a threat of dam failure in rainy seasons. Reference is made to the report of Bhumbra Committee which wanted treatment of much larger area of catchment (2.00 lakh ha.). THDC's response to the issue raised is as under:

- i) The impression sought to be created that catchments for Bhagirathi and Bhilangana rivers are particularly unstable and therefore hill sides in the area would collapse like the proverbial house of cards once Tehri Dam comes up, is totally erroneous and not based on proper appreciation of ground facts. The process of glacial movements, landslides, soil erosion and land going on since geological times, ever since the formation of Himalayas. Dam or no dam these processes will still go on.
- ii) Under the action of natural forces rivers originating from Himalayan catchments carry generally substantial amount of sediments, its extent depending on various factors like rock and soil conditions, slope, etc. This fact is well recognised by the planners and designers and appropriately taken care of in finding the engineering solutions. The inflow of silt into a reservoir is estimated and provision is made for storage of this silt utilising part of total reservoir for this purpose (referred to as dead storage). The remaining space is used for storage of water (referred to as live storage) for providing the desired benefits. The economic viability criteria generally adopted is to ensure that project should have a design life of 100 years. In case of Tehri Dam adequate provision has been made for dead storage in the reservoir for silt accumulation. It has been assessed that this storage would not get filled up till about 160 years (details given else where in sedimentation/ life or reservoir). Almost full benefits will thus be available for period of 180 years as against economic life or 100 years. Even after the dead storage gets filled up, the project would still provide substantial benefits on a reduced scale as a 'Run-of-the-river' Scheme.

With regard to decision-making project responsible for treatment of direct draining catchment only, as already indicated in the note on Rehabilitation and Environmental Conditions given to Committee members, the matter was discussed in the highest forums of Government of India during 1991 and 1992 and it was recognised that :

- Catchment Area Treatment works should relate directly to the areas affected by the project and should not encompass the entire project.
 - The phenomena of denudation of forests and erosion of soil had been a long standing problem in the entire Himalayan belt and that afforestation and soil conservation in the whole catchment was a desirable thing by itself and would no doubt be necessary to preserve the overall environment/ecology of the area which is ultimately the concern of State govt. and Govt. of India as a whole and not solely that of project authority.
- iv) For deciding the guidelines for the Catchment Area Treatment of Reservoirs, subsequently guidelines about Catchment Area Treatment were issued in August, 1992 by GOI, Ministry of Water Resources (copy annexed) in which it was conveyed that :
- The proposal would have to be looked into on a case-by-case basis and settled in consultation with MOEF, the objective would be to keep this treatment to a reasonable extent and not to unduly burden the project with general land improvement activities as such.
 - The work necessitated on account of immediate and direct adverse impact of the project during the construction phase along with work of direct draining sub-water shed for improving the carrying capacity of degraded/highly degraded lands along the reservoir should be carried out Pari-Passu with the construction programme of project.

On the basis of guidelines issued, discussions were held amongst THDC, RSAC and MOEF and following mutually agreed decisions were conveyed vide DO No. 2-19/81-IAI of October 11, 1993 from Dr. S.Maudgal, Adviser (IA) addressed to JS (Hydro) :

- The Remote Sensing Application Centre would under take the exercise of demarcating on a map the critically degraded areas i.e. areas covering E1 & E2 category of 'very high' and 'high' erodibility classification.

- Simultaneously, the data collected by the Forest Deptt. on the same subject would also be examined and the two sets of data reconciled.
- Areas already treated would be clearly mapped after evaluating the efficacy and success of treatment.
- On the basis of these two maps, the area which have not been covered would be clearly identified and a phased catchment treatment programme would be prepared for its completion prior to commencement of reservoir filling.
- The proposal would also clearly indicate the existing infrastructure, manpower etc. and indicate the requirements of funds for the remaining phases of the catchment treatment scheme. A provision should also be made for additional funds required, if any, on the basis of mid course corrections that may have to be carried out during the course of action.

Accordingly RSAC submitted the requisite maps and desired information for Catchment Area Treatment which were submitted to MOEF in Dec'93 and CAT Plan prepared in Jan'94 was also submitted to MOEF.

vi) Following conclusions emerge regarding treatment of Catchment Area:

- In the CAT Plan submitted in Nov'89, severe Erosion intensity of 2.06 Lakhs ha., consisted of Blanks-1.5 Lakhs ha., agriculture land-0.12 Lakh ha., forest-0.46 Lakh ha. Out of 1.5 Lakh ha. of Blanks, 0.35 Lakh ha., is rocky and balance 1.15 Lakh are Alpine Pasture (Blank) areas in the Alpine Zone of about 2800 to 4200 M. where no treatment is possible except through protection from uncontrolled grazing and measures for regeneration of pastures. Neither Agricultural land, nor rocky area can be treated. Keeping in view the degradation status, Forest Deptt., GOUP had proposed treatment in 36000 ha. after taking into consideration the areas which could be possibility treated in the severe erosion intensity of Forest.

Out of this the treatment of Catchment Area done from 1983-84 to 1993-94 under the earlier plan submitted to MOEF. Table indicating extent of treatment in each of 16 subwatersheds attached at Annexure-I.

= 22,746 ha. (this includes 1646 ha. of treatment in direct draining catchment)

- Area identified by RSAC for treatment in entire catchment is 23,503 ha. out of which direct draining catchment is 10,733 ha. Taking into consideration area already treated as 1646 ha. in direct draining catchment, as area of about 9000 ha. was left. The CAT Plan has been accordingly prepared for 13,500 ha.

Area now under treatment	:	13,500 ha.
TOTAL	:	36,246 ha.

vii) The present status of Catchment Area Treatment is as under :

	PHYSICAL	FINANCIAL
a) Catchment Area Treatment from 1983-84 to 1993-94 (10 years)	22,746 ha. (map showing treatment attached at Annx-I)	Rs.17.10 Crs. (Already incurred)
b) Area Treatment under CAT Plan 1994 from 1994-95 to 1995-96.	4300 ha.	Rs. 11.10 Crs. (Funds provided to GOUP)
BALANCE		
c) Area Treatment under CAT Plan 1994 from 1996-97 to 1999-2000.	9200 ha.*	Rs. 12.30 Crs. (Funds being provided yearly basis)
TOTAL	36,246 ha.	Rs. 40.6 Crs.

*Out of this from 4/96 to 9/96 an area of 2286 ha. has been treated during 1996-97.

Note: Table giving Status of CAT Plan 1994 in each subwatershed attached as Annexure-II.

Government of India
Ministry of Water Resources

.....

New Delhi dated the 11th Aug., 1992.

To

The Chief Secretaries/Deputy Secretaries of all
States/UTs.

Subject:- Catchment Area Treatment of Reservoirs.
.....

Sir,

Committee of Secretaries in their meeting held on
3.7.1992 at 4.45 P.M. in the Committee Room of Cabinet
Secretariat have discussed catchment area treatment of
reservoirs and decided as under:-

- a) In view of the differences in the geographical situa-
tions around the different reservoirs, it would be
difficult to provide for any standardised package
for treatment of the watershed around the reservoir
rim for improving their carrying capacity. The
proposals will have to be looked into on a case
to case basis and settled in consultation with the
Ministry of Environment & Forests at the time of
clearance of the project. But the objective would
be to keep this treatment to a reasonable extent
and not to unduly burden the project with general
land improvement activities as such.
- b) The Planning Commission in consultation with the
Ministry of Agriculture and the Ministry of
Environment & Forests should separately review
the provisions required for improving the degraded
lands in the different basins. These provisions
and the programmes thereof need not be tagged with
any specific project in reservoir basin as such.
- c) The works necessitated on account of the immediate
and direct adverse impact of the project during the
construction phase alongwith the work on the direct
draining sub watershed for improving the carrying
capacity of the degraded/highly degraded lands along
the reservoir should be carried out pari passu with
the construction programme of the project and
provision for the cost estimates of the project.

.....2/-.....

- 2 -

You may accordingly take further necessary action
in the light of the above decision in respect of Environmental
Action Plan with regard to major and medium projects in your
State.

Yours faithfully,

(B.S. Ahuja)
10/8
(B.S. AHUJA)
JOINT COMMISSIONER (PP)

Copy to:-

1. Secretary, Ministry of Environment & Forests, New Delhi.
2. Secretary, Ministry of Agriculture, (Department of
Agriculture & Cooperation) New Delhi.
3. Secretary, Department of Power, New Delhi.
4. Secretary, Planning Commission, New Delhi
5. Member (P&P), Central Water Commission, New Delhi.

(B.S. Ahuja)
10/8
(B.S. AHUJA)
JOINT COMMISSIONER (PP)

Subwatershed wise details of plantations raised in Tehri Dam catchment area during 1983 - 84 to 1993-94

Name of subwatershed	Area planted (in ha.) yearwise											Total
	83-84	84-85	85-86	86-87	87-88	88-89	89-90	90-91	91-92	92-93	93-94	
1. LOHARINAG	Nursery	--	--	--	--	--	--	35.00	20.00	--	--	55.00
2. KUMOLDIYA	Establishment	412.00	127.31	--	--	16.00	--	25.00	5.00	--	--	585.31
3. INDRAVATI/DHANARI		221.46	57.00	--	--	195.50	--	119.00	110.40	--	80.00	783.36
4. JALKURGAD		--	62.20	--	258.00	64.50	270.00	173.97	120.00	--	191.00	1139.67
5. KHURMOLAGAD		386.10	531.60	380.20	186.00	393.56	183.00	369.60	282.00	525.34	470.50	3707.90
6. SYAMALGAD		110.80	200.35	459.00	247.00	334.90	290.00	400.50	351.00	234.00	209.64	2837.19
7. NAGUNGAD		374.55	15.52	322.30	323.50	257.80	416.66	378.70	356.50	565.70	405.69	3416.92
8. KALDIGAD		--	--	57.50	89.60	75.00	96.00	--	44.13	--	--	362.23
9. GHONTI		156.14	173.75	340.25	322.23	302.25	234.63	348.34	263.50	256.52	294.18	2691.79
10. BADANGAON		276.44	234.48	324.45	188.50	256.20	174.98	175.00	214.00	297.00	290.00	2431.05
11. BHILANGNA		131.10	146.90	283.50	207.50	297.65	211.00	260.00	418.50	200.00	243.00	2399.15
12. BALGANGA		173.64	251.21	271.80	216.98	259.65	204.65	250.00	131.50	285.00	262.00	2306.43
13. PILANGGAD		--	--	--	--	--	--	--	30.00	--	--	30.00
Total		2242.23	1800.32	2439.00	2039.31	2453.01	2080.92	2535.11	2346.53	2363.56	2446.01	22746.00

Note :- No plantation has been done during the said period in the following three subwatershed as the area is snow bound.

- (1) Gomukh (2) Jalendri Jadganga (3) Managad

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"CAT PLAN- 1994"
CATCHMENT AREA DIRECT DRAINING INTO TEHRI DAM RESERVOIR (HA.)

SUBWATER SHEED	AREA TO BE TREATED	WORK EXECUTED		BALANCE	
		1994-95	1995-96		1996-97 *
BHAGIRATHI VALLEY					
1. Nagun Gad	3577.74	342.80	544.50	554.00	2066.44
2. Khurmola Gad	3007.80	292.00	293.00	303.00	2119.30
3. Sylam Gad	1520.00	179.30	203.00	205.00	534.70
4. Indrawati Gad	422.04	119.00	125.00	100.00	78.04
5. Jaikur Gad	1295.58	181.00	225.00	250.00	639.58
BHILANGANA VALLEY					
6. Badan Gaon	763.93	219.00	340.00	105.10	104.83
7. Balganga	1307.71	195.00	220.00	447.85	704.86
8. Bhilangana Upper	436.35	251.00	150.00	28.50	6.85
9. Ghomti	1034.55	135.00	200.00	316.50	383.15
GRAND TOTAL	13631.70	2004.10	2300.50	2266.35	7037.25
(say)	13500.00	2000.00	2300.00	2266.00	6912.00

Area planted upto Sept '96 against target of 2300 Ha. for 1996-97.

3. DANGER FROM SURPLUSSING FROM TEHRI RESERVOIR

Bhumbla Committee, in its report had expressed its apprehensions about the surplussing arrangement at Tehri reservoir as under :

"One of the benefits claimed from this multipurpose project is the moderation of flood and Tehri Dam is, therefore, stated to be provided with surplussing arrangements for a discharge of about 15,400 cumecs, even after providing 5 m ht. for flood moderation. The normal flood in the valley below is now reported to be in the region of 3500 cumecs. Therefore, the release of 15,400 cumecs of water will certainly bring much larger areas under the fury of floods downstream. The situation would get further aggravated if Alaknanda also happens to be in spate at the same time.

The increased intensity of flood flow calls for a critical examination of the safety, and for remodelling, if necessary, of existing public structures like bridges, roads, regulators, barrages, etc. downstream. The Committee was not informed of any such scrutiny, for modifications to existing structures, with financial implications, by the project authorities".

It has been suggested that issue of danger from surplussing from Tehri Reservoir as pointed out by Bhumbla Committee have not been adequately answered by THDC. The reviews of THDC in this regard are as under :

The observations by Bhumbla Committee show complete lack of understanding about the concepts/criteria which are adopted for design of various hydraulic structures such as spillways, barrages and about the reservoir operation. Committee erroneously assumed, as if as result of creation of reservoir, the maximum flood discharge in the river would go up to 15,400 cumecs from a maximum observed discharge figure of 3,500 cumecs, which would aggravate the flooding problem of areas located on the downstream 15,400 cumecs discharge is the assessed probable maximum flood (PMF) which can ever occur at Tehri. The value of PMF is determined on the basis of site specific hydrological data, maximising climatological factors, to have a very conservative assessment.

In case of all major structures such as storage dams like Tehri, National and International practice is to design the spillways (Surplussing structures) to pass discharge equal

to PMF, which is a most conservative basis, adopted with a view to ensure maximum safety of dam structures.

Probable maximum flood(PMF) can occur at a given location on a river, regardless whether a dam is constructed across it or not. If a flood occurs when the reservoir is not at full supply level, it gets stored in the reservoir thereby preventing flooding downstream. If the flood occurs when the reservoir is full, the flood is passed down after moderation, thereby reducing its fury downstream. Dams are created to store water and release them gradually in periods of low flows. In no case they are required to pass artificial floods downstream. The spillways of Tehri dam are designed for passing an inflow flood of 15400 cumecs (which has a probability of occurrence of 1 in 10,000 years approximately), if the same is caused by nature when the reservoir is full and not for releasing the stored water from the reservoir. Since dam doesnot creates a flood and simply passes down a natural flood after moderating it (thus inflow natural flood of 15400 cumecs would become a flood of 13430 cumecs after passing through the reservoir), the dam doesnot in any way endangers the safety of downstream structures like existing bridges and roads. It rather improves it by absorbing/moderating the flood.

Unlike other dams, Tehri dam has five spillways, each having a maximum capacity of 2200, 2200, 1900, 1900 and 5230 cumecs respectively, out of these two are ungated. Thus in case of Tehri dam, unlike other dams, possibility of creating a large artificial floods by will full maloperation is also remote.

From the above it is obvious that on no account surplussing of water poses any flood hazards to the community living downstream of a dam.

The danger attributed to Tehri dam, by the Committee, is, as such, not warranted by facts as indicated above.

4. SILT LOAD ESTIMATION AT TEHRI - LIFE OF TEHRI RESERVOIR

Reference has been made to doubt raised about the reported rates of siltation and life of reservoir by Bhumbra Committee. This Committee had taken the view that expected silt load was 22.72 ha.m instead of 14.5 ha-metre/100 sq. km/ year adopted by the project. THDC's view on this issue is as under :-

(i) Bhumbra Committee had in 1990 questioned the estimate of siltation rate by THDC taken as 14.5 ha-m/ 100 sq. km of catchment/ year which was based on actual silt observations at Tehri for period of 14 years (1973-1987) on grounds such as:-

- Data was of limited period (14 years), which was inadequate for silt load prediction on long time basis.

- It was based on observation at one station near confluence of two rivers.

- Estimate for bed load was on ad-hoc basis.

- Different classification used for Reservoir for carrying out sediment distribution study.

- Comparison with Bhakra catchment was not valid .

Committee, taking selected figures of observed data for only five years (for the years 1973, 77, 78, 80 & 85) concluded that actual silt load would be 22.72 ha m / 100 sq km of catchment/ year.

THDC had given a detailed response each and every point raised by Bhumbra Committee referred to above. THDC's view was that high silt factor of 22.72 worked by the Committee (Average of 5 highest values out of fourteen years data) was based on irrational of statistical approach, since averaging of all available data was the only logical approach, because the run-off and correspondingly the sediment load varies considerably every year. THDC still firmly hold on to this view.

(ii) Subsequently with the availability of data for a further period upto 1994. THDC has up-dated the study for sedimentation and life of Tehri reservoir, which is now based on data for a

period of 21 years 1973-1994). The average silt load for this longer data base, assuming same figure for trap efficiency of reservoir as adopted before the reservoir siltation rate works out to 14 ha m/ 100 sq km/year.

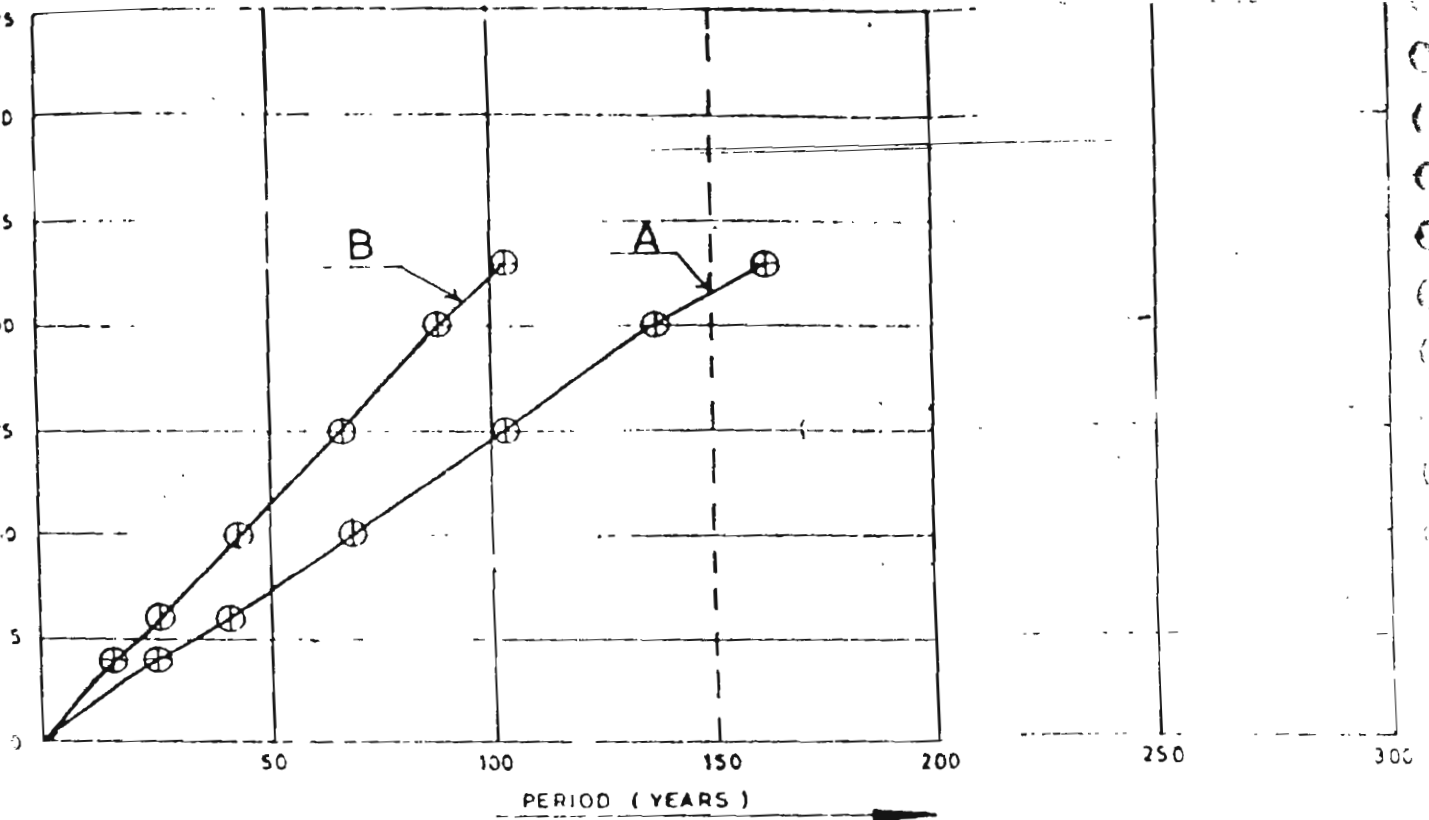
- (iii) Bhumbra Committee had also observed that if a silting rate is taken as 22.72 ha m per 100 sq km of catchment per year the life of reservoir may be around 60 years (1), as was being apprehended by some environmentalists.

It was pointed out to Bhumbra Committee that distribution of sediments in the reservoir had been worked by standard procedure recommended by CBI&P and IS code on the basis of this study the life worked out as 160 years (when sediment deposition level will be 715.0 m as against crest level of intake at 720.0 m). For economic appraisal of a storage project, the design life of a reservoir scheme is taken as 100 years. Thus the useful life of Tehri dam (the period through which it can serve its intended purpose) is much more than design life)

The Bhumbra Committee was further told that assuming for argument sake, a high sedimentation rate of 23.65 ha-m per 100 sq km (which is more than the rate of 22.72 ha m/100 sq km suggested by the committee), the project would not lose its viability and reservoir would have full designed life span of 100 years. Using a sediment rate of 22.72 ha m the life would be 104 years (see enclosed graph), as per updated study.

- (iv) As per updated study adopted of reservoir of 14 Ha m/100 sq km/year, the siltation of reservoir would attain the level of 715.0 m near the dam in 169 years. Thus the useful life of reservoir is now estimated as 169 years as against design life of 100 years. The siltation rate adopted is expected to come down after implementation of catchment area treatment programmed (as has happened in case of Bhakra reservoir on river Satluj). This would further enhance the useful life of the reservoir.

LIFE OF RESERVOIR



SEDIMENTATION
DEPOSITION LEVEL

715
700
675
650
630
620

SEDIMENTATION
DEPOSITION PERIOD

	(A)	(B)
	163	104
	138	88
	103	66
	68	43
	41	26
	25	16

SEDIMENTATION RATE -

A: 1450 CUM / SQ KM / YEAR

B: 2272 CUM / SQKM / YEAR

546. ASSESSMENT OF MICRO-CATCHMENTS AND SILT MONITORING STATIONS

1) Identification of Catchment :

The factors which lead to land degradation and induce severe erosion are many, such as slope, lithology, soils, landform, Structure, land use/cover, drainage density, vegetation type and vegetation density. Of these slope and vegetation cover are the two most important parameters in Himalayan region affecting soil erosion. Land degradation and erosion are the resultant effect of deforestation and various natural as well as man made processes. For identification of micro-catchments, which are severely eroded and have to be given priority for treatment, all the above mentioned parameters have been taken into account and all such areas have been delineated. This assesment has been got done through Remote Sensing Techniques, by Remote Sensing Applications Centre, Lucknow(RSAC).

The Criteria adopted by RSAC for categorising erosion status of land is enclosed for information. It is based on scientific analysis of all the factors which contribute to soil erosion and is, at once, understandable.

ii) Silt Monitoring Stations :

To assess the actual silt being brought down by the river, discharge and silt measurement is presently being done at two locations along Bhagirathi river in project catchment area. These monitoring stations have been set up by Central Water Commission as a part of network for collection of hydrological data for Ganga river. Also discharge measurement has been started on the tributary river- Bhillangana.

Besides the monitoring stations set up for daily measurement of silt, a long term specific programme for siltation studies for Tehri reservoir has been formulated by GSI and is under implementation. The objective of the programme is to assess the status of siltation in Tehri reservoir in three stages viz :

- Status of siltation before construction of Coffer Dam.
- Status of siltation after the construction of Coffer Dam.
- Siltation status after the construction of Main Tehri Dam.

Data for the first stage studies has already been collected. Studies for second stage have commenced with a view to study the micro level changes due to impoundment of water behind the Coffe Dam. These studies basically aim at computing the rate of siltation and the silt dispersion pattern as at present and also under the changing environmental conditions, due to creation of reservoir.

It is also planned to set-up silt monitoring stations in micro catchments, after the creation of Tehri reservoir which would enable assessment of catchment area treatment measures.

TABLE - 4. CRITERIA FOR ASSIGNING EROSION CLASSES

Erosion Class	Landuse/Landcover	Slope *	Lithology	Landform/Structure	Soil Characteristics	Drainage Density	Vegetation Density	Vegetation Type
SEVERE	Forests, Grassland & Open scrubs	Steep	All Lithology (Phyllite, Schist, Limestone, Conglomerate, granite, gneiss Quartzite.	Denudational hill slopes, Landslides, structural hills, morainous plains, etc. faults, thrusts & other structural lineaments	Fine to coarse texture shallow depth, Brown to reddish brown & dark grey in colour.	Medium to High	Low	All vegetation
	Forests, Grassland & Open scrubs	Moderate	Phyllite, Slate, Schist etc.	Denudational hill slopes, structural hills with extensive gullies, faults, thrusts & other structural lineaments.	Silt loam & other fine textured soils, shallow depth.	Medium to High	Low	All vegetation
	Agricultural land with no proper terracing, long fallowland, barrenland	Steep	All lithology	Denudational hill slopes, structural hills with extensive gullies, faults, thrusts & other lineaments.	Fine to coarse texture, shallow depth, brown to reddish brown	Medium to High	Low	All vegetation
	Long fallowland, Barren land.	Moderate	All lithology	- do -	- do -	Medium to High	Low	All vegetation
	Barren Land	Gentle	Phyllite, Schist, Slate etc.	- do -	Fine textured soil, shallow depth.	Medium to High	Low	All vegetation
MODERATE	Forest, Grassland & Open scrub	Moderate to steep	All lithology	- do -	Fine to coarse texture, medium depth, reddish brown to brown	Medium	Medium	All vegetation
	- do -	Gentle	All lithology	- do -	- do -	Medium	Low	All vegetation
	Agricultural land with proper terracing	Moderate to steep	All lithology	- do -	- do -	Medium		All vegetation
SLIGHT	Forest, Grassland & Open scrub	Moderate	All lithology	- do -	- do -	Low to Medium	High	All vegetation
	Forest, Grassland & Open scrub	Gentle	Alluvium mainly	Old river terraces, valley fills piedmont zones.	Coarse textured, and deep top soil layer	Low to Medium	Medium	Pine only
	Agricultural land	Gentle to Medium	Alluvium mainly	Old river terraces, terraces, valley fills, piedmont	Coarse textured, and deep top soil layer	Low to Medium		Pine only

* Gentle Slope 0 to 30%, Moderate Slope 30 to 60%, & Steep Slope > 60%.

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7. MORAINIC DEPOSITS IN TEHRI CATCHMENT

A view has been expressed by a Committee member that some of the higher catchments have morainic deposits which can pose a significant threat to the life of the project and to the turbines installed in the dam THDC, not taking any measures to stabilize the morainic deposits in the catchments of Tehri is perceived as a cause of concern. THDC's view on this issue is as under :-

Total catchment of Bhagirathi river at Tehri is 7000 Sq km. Morphological appraisal of area indicates existence of morainic material in upper-most part of catchment in the vicinity of glaciers, which are due to glacial processes. Moraines are glacial deposits comprising rock fragments ranging from clay/silt fraction to boulders. However, the percentage of cobble/boulder size is quite high and constitutes more than 60-70%. In the Bhagirathi valley, moraines are found in the higher reaches around Jhala, Harsil, Gangotri etc. They occupy higher slopes and, at places, due to progressive down cutting by river Bhagirathi these deposits were shaped into flat-terraces at different levels in the past much above the present river level. Some lower order stream which form the drainage system of river Bhagirathi, drain through these moraine deposits at higher elevations but as the carrying capacity of these streams is very low they do not contribute much to the main river.

The glacial activity and recession of glaciers and any resulting erosion of morainic material due to natural factors are processes which are going since geological times. There are no grounds to assume that such processes have accelerated in recent times (last several hundred years)

Tehri-dam location is at a distance of about 250 km from its source-Gangotri glacier at Gaumukh far away from above-mentioned sub catchments. Upstream of Tehri, of two run-of-the-river type power projects along Bhagirathi river, one- Maneri Bhali Stage-I is completed and under operation since 1980 and the second- Maneri Bhali Stage-II is under construction. Further upstream of Maneri, following four projects are planned on the river :-

- Bhairon Ghati - Stage-I
- Bhairon Ghati - Stage-II
- Loharinag pala
- Pala Maneri

The construction of Tehri Dam which is much downstream away from areas which exist on upstream with other projects operating/ under construction/ planned in the river reach in between can not get effected by existance of such morainic deposits. Whatever quantity of silt is being contributed on account of such deposits is already being taken care of through provision of dead storage capacity, in Tehri reservoir. Also it is incorrect to suggest that material would damage the turbines installed in Tehri power House. Since whatever silt is brought to Tehri reservoir would get settled in reservoir bed and water intake point being located about 120 metre above the river bed, water which would be fed into power tunnel for power generation would relatively silt free posing no danger to turbines.

No stabilisation of morainic through any special measures is therefore, called besides catchment area treatment planned for severely and moderately eroded areas.

8. INVOLVEMENT OF LOCAL PEOPLE IN MANAGEMENT & PROTECTION OF CATCHMENT

It has been stated that no institutional mechanisms to involve the local people in the management and protection of catchment has been evolved and consequently, there is little to believe that afforestation and other vegetative work being done in the catchment would survive after the forest department protection is withdrawn. Reference has also been made to view of Bhumbra Committee in this regard.

The catchment area treatment is being done through the state Forest Department in areas identified for priority treatment. Catchment area covers reserve forest, Civil soyam land and some private land.

- As per reserve forest area is concerned, the management & protection both would always be under the protection of Forest department.
- As regards civil soyam lands are concerned, management of such lands is being done by Gram panchayats under the guidance of District administration, with technical advice being provided by Forest Department about drawing up the annual afforestation plans. This management is, as such already under the control of local people through Gram Panchayats.
- As regards private lands, the management of such lands is in the hands of individuals who are persuaded through Gram Panchayats/District administration for plantation (especially fruit trees), with technical advice being provided by Forest Department. The management as such is under the control of local people.

As a long term measure for effectively involving local people for management & protection of civil soyam lands action has been already initiated by the state Govt., where proposal for joint Forest Management has been drawn up. Under this proposal, involvement of local people in the selection of area, planting of saplings & protection after the plantation, distribution of Forest produce including punishment for violation of Forest act have been kept. It is understood that the draft circulated by the state Forest Department in April 1995 is under consideration for issue of Govt. order by the State Govt.

9. EXTENT OF AREA TO BE IRRIGATED BY THE PROJECT

It has been stated that there is dispute about the extent of area that can be irrigated by the project. Bhumbra and the MOEF reportedly feel that water available would not be adequate for irrigating the extent proposed by project authorities. Information has been asked for about the current status on this issue.

It is not correct to say that there has been dispute regarding extent of area to be irrigated from Tehri Project. In 1990 Bhumbra Committee was given details of area to be irrigated by the project on the basis of project Report for utilisation of Tehri waters, prepared by U.P. govt. (The irrigation project for Tehri is to be planned and executed by U.P. Govt.). The project formulated by U.P. Govt. at that time, envisaged bringing 2.70 lakh hectares of additional area under irrigation. In addition, stabilisation of Irrigation in existing commands of Lower & Upper Ganga Canals, of 6.04 lakh ha. was also to be achieved due to assured supplies from Tehri reservoir Bhumbra Committee had some reservations about this extent of area being irrigated with the available water. The project submitted by U.P. Govt. was under appraisal by Central Water Commission's for its approval by the Planning Commission at that time. It was expected that aspect of water planning for the project would be examined in detail by CWC. The present status is being obtained from GOUP.

10. WATER LOGGING STATUS IN PROPOSED
COMMAND OF TEHRI PROJECT

An apprehension has been expressed that surface irrigation in the proposed command of Tehri project would aggravate water logging problems. Bhumbra Committee had raised this issue, citing problem of water logging in Sharda Sahayak Canal. Committee had expressed the view that extension stabilisation of canal irrigation in Ganga-Yamuna Doab would lead to adverse environmental consequences and that about 20,000 ha (about 10% of irrigated area) would get affected.

As was also indicated to Bhumbra Committee, fears about water logging in project command are not warranted on account of following status of proposed command area.

- The proposed command area, which has one of the oldest large irrigation networks of modern era, has a history of canal irrigation extending to 100-140 yrs. with developed practices for water utilisation.

- This command area was the first such area in the country where conjunctive use of surface and ground water was first introduced in Nineteen thirties, with the start of tubewell irrigation. This was made possible on account of availability of power from hydro schemes constructed on the upper Ganga Canal.

- The entire Yamuna-Ganga Doab constituting the command area of the project is criss-crossed by a number of natural and artificial drainages.

- The studies of ground water table carried out by National Institute of Hydrology & GWID, UP indicate that during the last two decades there has been no rise in the ground water table in the area in general. On the contrary, there has been lowering of ground water table in many areas which are to receive water from Tehri.

- The utilisation of stored water from Tehri in the canal commands during non-monsoon period would not lead to any aggravation of present situation. In fact currently a project for modernisation of Ganga canal through which the Tehri water is proposed to be utilised, is being executed. It envisages, apart from use of water available in river Ganga, exploitation of ground water which would further minimise any chance of deterioration of land due to water logging and salinity problems.

11. REDUCTION IN WATER FLOW DUE TO DAM & ITS IMPACT ON CARRYING CAPACITY OF RIVER DOWNSTREAM

Apprehension has been expressed that reduction in flow due to construction of dam especially in dry season would have adverse impact on carrying capacity of river downstream. This could result in greater levels of pollution both in Bhagirathi river and Ganga, of which it is a tributary. Information has been sought about any assessment been done of the impact on water pollution levels in dam and whether it has also been discussed with Ganga project Authority.

With regards to above, following basic facts about river flows of Bhagirathi & Ganga have to be appreciated.

- (i) The total average yield of river Bhagirathi at Tehri is 8000 million cum, whereas the gross storage capacity of Tehri dam is 3540 million cum, out of which live storage is 2615 mill m³. Thus every year Tehri dam would store only 2615 mill m³ of flow as against total yield of 8000 mill m³, i.e. dam would store only about 33% of total river flow at Tehri and the remaining flows will be let down the river.
- (ii) At Devprayag 40 km downstream of Tehri, Bhagirathi joins the river Alaknanda, to form River Ganga. In terms of total inflow into Ganga, Alaknanda contributes about two-thirds of the flow, the contribution from Bhagirathi being of the order of one-third. Both the rivers pass large flood flows during the monsoon. During the non-monsoon season, the minimum flows in Alaknanda are also 1.5 to 2 times the flow in Bhagirathi.

In view of the position indicated above, it is very apparent that :

- (i) Damming of Bhagirathi flow at Tehri will have no impact whatsoever below Devprayag, since the entire flow of river Alaknanda, plus flows released through Tehri & Koteshwar power houses and natural flows into Bhagirathi from river catchment between Tehri/Koteshwar and Deoprayag would continue to flow down the river. Dam at Tehri would exercise the beneficial impact of moderating the flood flows in rainy season.

(ii) Reservoir releases from Tehri reservoir during non monsoon period would be governed as per irrigation requirement. The natural monsoon flows during this period would not be stored and would be passed through power house for power generation. In all discharges in the range of 200 to 300 cumecs would be released as per needs of irrigation & power generation from Tehri reservoir. Considering that minimum actual discharges at Tehri are in the range of 45 to 80 cumecs (from Oct. to April) injection of 200 to 300 cumecs water into the river downstream of Tehri would actually improve the water availability in the river reach between Tehri and Devprayag. In this connection, the basic fact should not be lost sight of that the irrigation benefits planned are to accrue due to these increased river discharges as a result of regulated flows from the reservoir, which would be fed into canals taking off from Ganga river at Hardwar and other points downstream.

In view of position indicated, it is not correct to assume that flows would be reduced, carrying capacity of river downstream would be effected, resulting in greater levels of pollution in Bhagirathi & Ganga.

12. STABILITY OF HILL SIDES SURROUNDING RESERVOIR

Referring to concerns raised by Bhumbra Committee about the stability of hill side surrounding the reservoir, information has been sought if these issues have been studied and if so what are the findings Bhumbra Committee had expressed the fear that in case of strong earthquake hill sides might collapse and resultant wave may cause overtopping of dam.

In course of interaction with Bhumbra Committee in 1990, THDC had given to the Committee detailed report on "Stability of Reservoir Rim of Tehri Dam" prepared by a joint team of reputed professions of Earthquake Engineering Department, Earth Science and Civil Engineering Department of Roorkee University, which contained details of investigation and studies carried out to assess reservoir rim stability and gave following conclusions.

- "Hill sides forming reservoir rim, extending, from the present river bed to top, are stable.
- During on earthquake of magnitude 8 in the region, the displacement of steepest hill side will be too insignificant to initiate any mass movement of hill range, resulting in landslides."

However, the safety aspects in relation to earthquakes is being separately looked after by the safety Committee.

In their report referred to above Roorkee University Experts after assessing the stability of surficial material lying on river bank had pointed out that villages along the reservoir were generally located near terrace cultivation, developed on the surficial deposits and their safety under normal conditions as well as needed to be evaluated to safeguard against damage from landslides, which are common occurrence all over Himalayas.

In July, 1990 while according environmental clearance to Tehri Dam Project MOEF, desired that a rehabilitation package be prepared covering population living on rim of Tehri reservoir.

Persuant to this THDC entrusted the work of assessment of stability of Hill slopes at village sites lying within 500 metres from full reservoir level to the same group of Experts from Earthquake Engineering Department of Roorkee University. Their report was received in Sept, 1992. The results of study have shown that each village within 500 m from FRL submergence line is located on stable hill side and impounding of reservoir will not endanger their

stability. No village was found to be situated on old landslide debris. Report also states that on visits to village sites, Authors found no evidences of failure of ground at these sites due to Uttarkashi Earthquake which occurred on 20th Oct, 1991, which indicated that hill sides at various villages did not undergo any distress on exposure to this earthquake. Copies of this report has already been made available to the members of the Expert Committee.

13. IMPACT OF RIVERINE ECOLOGY OF DAM-UPSTREAM & DOWNSTREAM

It is alleged that impact of riverine ecology of the dam both upstream and downstream has not been studied adequately. Apart from study of Mahseer, no other study seems to have done to determine what changes will occur upstream due to impoundment and downstream due to reduced flow of sediments.

As has been already indicated in the note submitted to Expert Committee members, study of Fauna of the region was got done by Zoological Survey of India (ZSI). ZSI in their report submitted in March'1993 had recommended that provision to be made for conservation of Mahseer fish by making arrangement for movement of fish from downstream to upstream and vice-versa, for spawning purposes. Subsequently an action plan has been drawn up for mitigation of possible impact on Mahseer fish, through a consultant. The consultants have recommended establishment of fish seed farms for breeding of Mahseer artificially, produce fingerlings and the Tehri & Koteshwar reservoirs so as to rehabilitate fish population. Some other measure have also been suggested. Action on action plan would be taken by THDC in consultation with state Fisheries Department pari-passu with construction of project.

Apart from this study, studies of river morphology have already been carried out earlier. THDC considers that adequate studies as required have been done.

DOWNSTREAM RIVER CHANNEL :

Tehri reservoir would settle the sediments brought by the river. The outflow from reservoir would be almost silt-free. In case of Tehri, such outflow would be let directly into the Koteshwar pondage immediately downstream of Tehri dam. Thus there would be no erosion due to release of silt free water. The releases from Koteshwar dam may possibly cause some erosion of loose overburden for a short reach of river till eroded material gets mixed with river flow. The Bhagirathi river bed in this entire reach consist of hard rock with a small thickness of overburden lying over it. As such this erosion would not be causing any problem, with regard to stability of river banks or to Koteshwar dam structures, which would be founded on rock.

14. HEALTH IMPACTS OF RESERVOIR & CANALS

Information has been asked about assessment of negative health impacts of reservoir and the canals, especially in terms of breeding of vectors and measures planned.

Total river flow at Tehri is from a catchment one-third of which is snow covered. Thus a substantial part of the river run-off is from snow-fed and glacier melt. Drainage area upstream of Tehri is relatively thinly populated, with virtually no industry in existence. Total capacity of Tehri reservoir being only 33% of annual flows about 66% of inflow would not get stored. This would facilitate recharging of reservoir with fresh water annually.

Before starting the impoundment, Tehri reservoir would be cleared of Forest and other organic matter, leaving no organic matter to decay. The reservoir water is therefore expected to remain free of pollution & odour. Also since substantial flow is out of snow & glacier melt, it would remain free of pathogenic germs, as is the case at present. For water quality modelling study done for Tehri reservoir confirms that there would be no deterioration in water quality in the reservoir. As such reservoir would not pose any health hazard for population living around the reservoir rim.

As regard impact of water spread in canal commands in Ganga-Yamuna Doab and in command area of Agra canal south of Yamuna, the modern canal irrigation in these areas has been in existence for almost 150 years. As has been stated elsewhere, there are no problems of water logging and no breeding of vectors is expected.

THDC is establishing a regional Hospital in the project area, which will have all the facilities to provide comprehensive and integrated primary and secondary health care services. The primary care services would comprise of family medicine, immunization, nutrition, family welfare, health education, control of all communicable diseases associated with hilly areas and other public health problems resulting on account of the emergence of the water body in the region, including Malaria prevention & control.

16. COMPENSATORY COMPENSATION - WHY IT IS BEING DONE AWAY FROM SUBMERGENCE AREA

Objection has been raised by a member of the Committee that compensatory afforestation for the project is being done in Jhansi division, which is not only away from submergence area but also a different ecosystem type. He has tried to argue that this defeats the whole purpose of compensatory afforestation for losses in one type of ecosystem can not be compensated by plantations in other type of ecosystem, that also in a distance area.

The view that compensatory afforestation should be done in the same Ecosystem is perhaps based on the expectation that land is available in the region for the asking. Yet ground reality in this regard is quite otherwise. The decision to go for compensatory afforestation in Jhansi division (where land could be found) was taken by U.P. Govt.

When project execution was under their control, only after the district administrations of Tehri and adjoining hill districts were unable to locate any Govt. land for compensatory afforestation. Non forest land of Gram Sabha in Jhansi division was finally identified for compensatory afforestation. As for procurement of private lands in these areas in districts of Tehri and Uttarkashi, THDC even today is finding it extremely difficult to procure even 2000 acres of land for resettlement of oustees not even in the adjoining district of Dehradun. Given the pressure of human population and general scarce availability of lands in hilly region the expectation that such afforestation should be done in the same ecosystem is unrealistic.

Also with regard to compensatory afforestation there is no such specific guidelines laid by MOE&F that such afforestation should be done in the same ecosystem. In fact, it is not only the case with Tehri project alone. Compensatory afforestation in case of other projects in Hilly region is being done at places away from project locations, where land could be procured for this purpose. Few examples are given in annexure.

As regards, preservation of local ecosystem at Tehri, it needs to be appreciated that a massive programme for plantation of trees both in reserve forest land as well as Civil Soyam lands is being implemented under the catchment area Treatment programme. Under this programme over 5 crores trees are to be planted in the area, out of which around 3.50 crores trees have already been planted so far. As such Member's view about care of local ecosystem being given a go by as a result of compensatory afforestation being done at distant place, is not correct.

Sl. No.	Name of the Project	District where Compensatory Afforestation is being done
1.	Tanakpur Hydroelectric Project Nainital District	Kanpur
2.	Vishnu Prayag Hydrel Project Chamoli	Hardoi
3.	For Powergrid (PGCL)	Hardoi
4.	Dhauli Ganga Pithoragarh	Kanpur
5.	Srinagar Hydroelectric Project Pauri	Mau
6.	Lakhwar Vyasi Dehradun	Lalitpur
7.	Pala Maneri Project Uttarkashi District	Jhansi

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D.O.No.2-19/81-HCT-IA-I

भारत सरकार
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GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT & FORESTS
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3rd February, 1997

Dear Prof. Rao,

Please refer your D.O.letter No.1888 dated 29th November, 1996 enclosing Prof. Shekhar Singh's letter on different environmental issues pertaining to the Tehri Hydro Electric Project. This Ministry is primarily concerned with the environmental aspects, such as protection of flora and fauna likely to be affected, catchment area management and relief and rehabilitation of the affected people.

2. While giving environment clearance, the project authorities were asked to undertake various studies on environmental aspects on which we are receiving periodical reports from the project authorities. The reports indicate that -

(a) Under the catchment area treatment plan an area of 22,746 hec. has already been treated. An additional area of 13,500 hec. in the direct draining catchment is being treated at a cost of Rs.23.4 crores.

(b) The Government of U.P. has prepared a rehabilitation plan, which is being implemented in two phases. Until July, 1996 for 98.5 % of Phase-I and 15.7% work on rehabilitation under Phase-II has already been completed. The rehabilitation sites of rural displaced families are in well located areas in Dehradun and Hardwar district. Under the urban rehabilitation programme, affected families are being rehabilitated at the New Tehri Town, Rishikesh and Dehradun.

3. The command area development programme is yet to be submitted by the Govt. of Uttar Pradesh as well as the Ministry of Water Resources. The reports on the surveys of flora and fauna have been received from BSI and ZSI. These indicate that there are no endangered species of flora and fauna that would be affected by the dam. Based on these surveys, a plan has been prepared for transferring Mahaseer fish from down stream of the dam to the lake for spawning

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purpose. Plantation of certain suggested species is being taken up under the afforestation programme.

4. The preliminary Disaster Management Plan was submitted by the Ministry of Power to the nodal Ministry of Agriculture for evaluation in April, 1992. Comment of this Ministry were sent in June, 1992 for revision of the plan. We have not received the revised version of DMP till date.

5. As regards the Bhagirathi Basin Management Authority, this was set up by an executive order of the State Government in 1991 but has still to start functioning as the necessary legislation is to be introduced.

6. As regards some issues quoted from the Bhumbra Committee report, the project was cleared after considering various aspects of this report. The safety aspect of the dam was not considered by the MOE&F, but by a High Level Committee constituted by the Department of Mines. The report of the Committee reveals that the dam has been designed for a peak ground acceleration of 0.5g and has been found satisfactory.

With regards,

Yours sincerely,



(VISHWANATH ANAND)

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*1/5/92
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पुनर्वास एवं पर्यावरणीय पहलुओं पर विशेषज्ञ समिति
EXPERT COMMITTEE ON REHABILITATION & ENVIRONMENTAL ASPECTS
टिहरी हाइड्रो-विद्युत परियोजना
TEHRI HYDRO-ELECTRIC PROJECT

प्रो. हनुमन्त राव
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February 26, 1997/2/97

Dear Shri Nair,

Thank you very much for the D.O. letter No.2-19/81-HCT-IA-I, dated February 3, 1996, received from Shri Vishwanath Anand, Additional Secretary in your ministry, in response to my letter of November 29, 1996, regarding the Tehri Project. The committee has, since, discussed your ministry's response and have the following further requests to make.

2. The committee requests your ministry to send a point by point response to the various points made in the note sent to you vide my said letter. In case your ministry has no comments on a specific point, that may kindly be indicated.
3. Given our terms of reference, the committee is particularly interested in finding out whether the issues shown as outstanding (point 1 of the note) in the presentation made by your ministry to the Prime Minister, in 1993, have since been resolved to the satisfaction of your ministry and, if so, the details thereof.
4. During the committee's field visit to the Tehri Project area certain misgivings were expressed concerning the manner in which catchment area treatment was planned and executed. As one of the conditions in the clearance letter specified that catchment area treatment plans must be approved by your ministry, the committee was particularly interested in knowing whether these plans had been approved by your ministry and, if so, the details thereof.
5. Your comments regarding the area of catchment to be treated are also solicited, as outlined in point 2 of the note sent to you.
6. Your response to point 3 (danger from surplusing) and point 4 (rate of siltation) would also be most helpful.

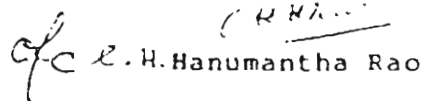
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- 2 -

7. We would also request your comments on the remaining points, especially point 17 and 18 of the note sent to you. The committee is particularly interested in the detailed reasons on the basis of which the recommendations of the Bhumbra Committee were rejected by your ministry, as these would help the committee to understand the correct environmental status of the project.

With regards,

Yours sincerely,


E. H. Hanumantha Rao

Shri T.K.A. Nair
Secretary to the Govt. of India
Ministry of Environment & Forests
New Delhi

T. K. A. NAIR



भारत गणराज्य

सचिव

पर्यावरण एवं वन मंत्रालय
भारत सरकारSECRETARY
MINISTRY OF ENVIRONMENT & FORESTS
GOVERNMENT OF INDIA

D.O. No.Z-19/81-HCT/IA-1

24th April, 1997

Dear Prof. Hanumantha Rao,

Sub: Tehri Hydro-electric Project.

Please refer to your letter dated the 29th Nov. 1996 and 26th Feb., 1997.

Based on the material available with us in the Ministry I am enclosing our response to the points made in your letters. Please let me know in case you require any additional information or clarification.

With regards,

Yours sincerely,

(T.K.A. NAIR)

Encl.: As above.

Prof. Hanumantha Rao,
Chairperson,
Expert Committee on Rehabilitation &
Environmental Aspects,
Tehri Hydro-Electric Project,
240, Jubilee Hill, Road No.18,
HYDERABAD-500 035.

POINT TO POINT RESPONSE TO THE COMMUNICATION RECEIVED FROM
THE EXPERT COMMITTEE ON REHABILITATION AND ENVIRONMENTAL
ASPECTS.

- 1(i) The information submitted by the project authorities pertains to the period before according environmental clearance. In July, 1990 the Ministry sought information regarding Catchment Area Treatment Plan after 1990 which is yet to be recieved.

- (ii) The Government of U.P. has prepared a rehabilitation plan, which is being implemented in two phases. Until July, 1996 for 98.5 % of Phase-I and 15.7% work on rehabilitation under Phase-II has been completed. The rehabilitation sites of rural displaced families are in well located areas in Dehradun and Hardwar district. Under the urban rehabilitation programme, affected families are being rehabilitated at the New Tehri Town, Rishikesh and Dehradun. being treated as a cost
The study requirements for the project
- (iii) The study undertaken by THDC through civil engineering Department, Roorkee university was submitted to this Ministry during 1992. As per the study no specific measures are required for maintaining water quality of the reservoir.

- (iv) Government of Uttar Pradesh is yet to submit Command Area Development Plan.

- (v) The reports on the surveys of flora and fauna received from BSI and ZSI indicate that there are no endangered species of flora and fauna that would be affected by the dam.

- (vi & (vii) Risk Assessment and Disaster Management Plan is interlinked. The preliminary Disaster Management Plan

was submitted by the Ministry of Power to the nodal Ministry of Agriculture for evaluation in April, 1992. Comments of this Ministry were sent in June, 1992 for revision of the plan. We have not received the revised version of DMP till date.

(viii) The Bhagirathi Basin Management Authority, was set up by an executive order of the State Government in 1991 but has still to start functioning as the necessary legislation is to be introduced. Ministry has not been informed of further action.

2. Submission of catchment area treatment plan with cost estimate:-

The THDC has submitted the catchment area treatment plan and intimated that an area of 22,746 hec. has already been treated. An additional area of 13,500 hec. in the direct draining catchment is being treated at a cost of Rs. 23.4 crores. The financial requirements for the proposed treatment was given by the State Forest Department to THDC, Yearwise total funds needed as indicated by THDC is given below:

<u>UNTER CAT PLAN</u>	<u>(Rs. in Lakhs)</u>
1993-94	292.00 (actual)
1994-95	351.00 (actual)
1995-96	342.56
1996-97	345.55 To be enhanced due to
1997-98	345.55 increase in labour
1998-99	345.55 rates.
1999-2000	334.01

Catchment Area Treatment Plan is not yet approved by this

Ministry. The THDC was advised during 1995 to consider the treatment undertaken prior to 1990 as background and to bring out separately an index map clearly indicating the treatment undertaken so far, and proposed programme of watershed management. The THDC is yet to submit this map. The Bhumbra Committee report of Feb. 1990 was taken into consideration while according environmental clearance in July, 1990. The clearance letter states that "The THDC will as per recommendation of Remote Sensing Applications Centre, UP identify the critically degraded areas conforming to the "very high" and "high" erodability classification and prepare action plans..."

3. The Ministry does not look into design and engineering part of the project as these are normally looked into by CWC/CEA. Hence this Ministry is not in a position to offer its comments on surplusing from reservoir.

4. The observations of the Bhumbra Committee is based on the data available for the period 1973 to 1988. The Bhumbra Committee while expecting a silt load of 22.72 ha. m. has also mentioned that data base is not adequate to predict silt load on a long term basis. The THDC observed silt load will be 14.50 ha.m.

5. The rate of siltation no doubt depends on soil conditions in the catchment area. While the data regarding siltation for the period 1973 to 1988 is available with the Ministry, no further data is available. However, the correlation between siltation and catchment area treatment is well established.

6. No assessment has been reported to MOE&F regarding quantity of silt expected to deposit from micro catchment to the dam site.

7. Soil conservation is an integral part of watershed management.
8. Catchment Area Treatment Programme will be implemented by the State Forests Department and funds will be made available by THDC. Afforestation works carried out in reserve forest area will be protected by State Forests Department as per the existing practice. The treatment work carried out on civil Sayam and private lands will be managed by Gram Panchayats under the guidance of district administration which are already under control of the local people. The possibility of Joint Forest Management (JFM) programme is also being explored by the project authority.
9. Detailed command area development proposal is still awaited from Government of Uttar Pradesh for assessing the water availability and extent of area which could be covered.
10. Drainage is part of command area development, the plans for which is yet to be received.
11. Water availability for downstream projects is generally ensured by CWC while making allocation for water resources projects. National River Conservation Directorate has taken up pollution abatement projects along the river bank towns to control pollution emanating from urban sewage.
12. According to Ministry of Power the hill slopes around the reservoir have withstood all natural calamities for hundreds of years. Even when severe earthquakes took place the hill slopes remained intact.

The stability of the hill slope has been examined

: 5 :

through the Earthquake Engineering Department, University of Roorkee and the rim has been found to be safe from the seismicity point of view. Copy of the report is being collected from THDC and will be sent immediately after receipt of it

13. The study focussed mainly on Mahaseer as it will be the most affected and harmed species of the area due to construction of dam.

14. This also forms part of Command Area Development Plan which is yet to be received.

15. Without full information on Command Area Development Plan it is not possible to comment on the observations contained in the report.

16. Compensatory Afforestation is to be done as per the provisions of forests(conservation) Act 1980. The proposal has been accorded forestry clearance under the provisions of the Act.

17. The Committee constituted by the Ministry of Environment and Forests, Government of India is advisory in nature. While taking a decision, Government of India takes into account various facts/aspects of the project including the recommendations of the Committee. The Committee of Secretaries considered all aspects of the project including environmental considerations and finally decided that Environmental Clearance be accorded.

18. The implementation of the conditions of environmental clearance was to be monitored by the Bhagirathi Basin Management Authority along with other projects in the valley. No separate monitoring was envisaged by the

: 6 :

Ministry. The THDC is submitting periodical reports on the progress made including environmental aspects. The project is not on schedule for a number of reasons. Hence, it is difficult to compare the work on the project pari-passu implementation of the environmental schedule.

Government of India
 Ministry of Environment and Forests
 (Deptt. of Environment, Forests and Wildlife)

New Delhi, dated the 7th February, 1988.

To

The Secretary,
 Forest Department,
 Government of Uttar Pradesh,
 Lucknow.

Subject: Diversion of 2582.9 ha. of forest land
 (2311.4 ha. Civil Boyan land and 271.5ha.)
 Reserve Forest land) for construction of
 Tehri Dam in Uttar Kashi and Tehri Garhwal
 districts.

...

Sir,

In continuation to this Department's letter of even number dated 4th June, 1987 on the subject cited above I am directed to say that, the following condition No. VIII may please be added after the other conditions I to VII in para 2 of this Department's letter dated 4th June, 1987 quoted above conveying approval in the case:-

(VIII) The compensatory afforestation may be raised on 3815 ha. Gram Samaj lands in the 151 villages of Lalitpur and 7 villages of Jhansi districts as already identified by the State Government at the cost of the project. The non-forest lands identified for compensatory afforestation may be handed over to the Forest Department and notified as protected forests.

2. Receipt of this letter may kindly be acknowledged.

Yours faithfully,

(R.S. BISHT)

Under Secretary to the Govt. of India

Copy to:-

1. Chief Conservator of Forests, U.P., Lucknow.
 Urgent action may please be taken over the non-forest area for compensatory afforestation and to notify the same as protected forests.
2. Conservator of Forests (Central), Regional Office, Northern Zone, 4 Midcor place, Lucknow, (U.P.) for monitoring the above condition in addition to other conditions already stipulated in this Department's letter of even number dated 4th June, 1987.
3. Guard File.

215

(R.S. BISHT)

Under Secretary to the Govt. of India

राज्य वन विभाग, भागीदार प्रकल्प, 2003, मुंबई 400 001 ।
पत्रा सं 72/29-1(1) दिनांक, मुंबई 21/7/93
सेवा में,

श्री बी.डी. राव,
सुनिश्चिंतक,
टी.एच.डी.सी. ।

ANNEXURE-III(XV)

विषय:- टिडरी डैम परियोजना क्षेत्र में फस प्रजातियों का वृक्षारोपण

तारीख:- आपका पत्र दिनांक 21-7-93 ।

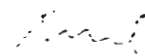
प्रति,
आपके संदर्भित पत्र पर मेरा विमर्शित जवाब आ रहा है ।

1- प्रत्येक वृक्षारोपण क्षेत्र में लगाए गये पौधों में से कम से कम 20 % पौधों को फस प्रजाति के लगाए जाने के आदेश हैं। इनकी आदेशों के अन्तर्गत प्रत्येक वृक्षारोपण के अन्दर कम से कम 20 % फस प्रजाति के पौधे लगाये जाते हैं। टी.एच.डी.सी. परियोजना के क्षेत्र के वृक्षारोपणों में लगाये जा रहे फस पौधों की सूची प्रजातियाँ निम्नलिखित हैं।

- 1- अंबला
- 2- शाहतूर
- 3- कचनार
- 4- दोल्हू
- 5- महुल
- 6- अहारोट
- 7- पया

2- पानी की सतह के पास वाली प्रजातियाँ लगाई जा सकती हैं जो कि पानी में डूबने के बाद भी जीवित रहे। टी.एच.डी.सी. परियोजना क्षेत्र में ऐसी प्रजातियाँ सेलिब्रिस, पोपुलर, इत्यादि हैं किन्तु वे तभी लगाई जा सकती हैं जबकि क्षेत्र में पानी हो। अतः इन प्रजातियों का वृक्षारोपण जब क्षेत्र में पानी भर जावेगा और लूट नहीं जा जावेगी तभी पानी के किनारे किया जावेगा।

भवदीय,



सहायक निदेशक
वन विभाग

राज्य वन विभाग, मुंबई, 400 001, मुंबई 400 001 ।



TEHRI HYDRO DEVELOPMENT CORPORATION LIMITED

ANNEXURE-III (XVI)

No. THDC/BSI/632

Dated : 17.8.1983

21.8.83

The Chief Conservator (Uttanchal)
Forest Officer,
Nainital.

SUB : VEGETATION OF THE TEHRI DAM SUBMERGENCE AREA :
AN ENVIRONMENTAL IMPACT ASSESSMENT

Dear Sir,

We had commissioned Botanical Survey of India (BSI) to undertake the studies for preparing Action Plan for conservation of flora likely to be affected by the construction of Tehri Hydro Power Complex. They have completed their studies and have submitted the report.

The report recommends that in our afforestation programme we should include certain specific indigenously growing species. A list of the species recommended by them for plantation in the afforestation programme is enclosed as Annexure-1. You are requested to take note of the recommended names of the plants and arrange to plant these species in the afforestation programme being funded by THDC.

An early confirmation of the action proposed to be taken by Forest Deptt., GOUP, on the above shall be highly appreciated.

Thanking you,

Yours faithfully,

ENCL : as above.

(R.K. SHARMA)
MANAGER (C)

1. Shri Rajeshwar Dayal, Desk Officer, Ministry of Power, Shram Shakti Bhawan, New Delhi.
2. Chief Conservator (Forest), Dehradun.
3. Conservator Bhagirathi, Munir-ki-Retti, Rishikesh.

सहित, विजय टावर, 16 राजेंद्र-
नगर, दिल्ली-110008

दूरभाष 5720559, 5720465 टेलीग्राम : 031-63085 टेलीफोन-टोकी ई-
दिल्ली-110008 टेलीफैक्स : 5720559, 5720465 टेलीफैक्स : 031-63085 THDC IN, Gram : TEHRI CORP

पंजीकृत कार्यालय- भगोराव मठ, (राज टेरिंग) पर्वतश्री पुरम, रिहरी (पुष्पवात)-249001

Regd. Office: Bhagoraav Math (Raj Tering) Parnashree Puram, Rihri (Pushtawat)-249001

LIST OF SPECIES RECOMMENDED BY BOTANICAL
SURVEY OF INDIA, DEHRADUN

Albizia Jeebeck, *Bauhinia* *retusa*, *Pterospermum* *occidentale*, *Dalbergia* *sericea*, etc. wild edible plants like *Syzygium* *cuminii*, *Berberis* *lycium*, *Ficus* spp., *Pyrus* *pashia*, *Moringa* *oleifera*, etc. and the naturally growing *Pinus* *roxburghii*. Apart from that, medicinal plants like *Withania* *somnifera*, which is at present abundant around Tehri, should also be rehabilitated suitably under this programme.

Delugeasia *hypoleuca*, *Salix* *tetrasperma*, *Vitex* *negundo* and *Acacia* *catechu* may be introduced along the periphery of the reservoir to facilitate perching for our aviary guest. Hydrophytes like *Hydrilla* *verticillata*, etc. may be introduced in the reservoir to support to the fishes.

The evergreen *Bauhinia* *variegata* and the scarlet flowered *Erythrina* *suberosa* will be worth introducing around.

In order to prevent soil erosion, necessary steps must be taken. Accordingly plants like *Dodonaea* *viscosa*, *Rumex* *hastatus*, and *Rhus* *parviflora*, which are growing in abundance on the slopes around Tehri, may be planted in large numbers to stabilize the soil.

The aquatics like *Marsilea* *muta*, *M. Quadrifolia*, *Ricciocarpus* *natans*, etc. should also be rehabilitated in the reservoir as well as in ponds at an higher elevation.

Office of the Conservator of Forest Bhagirathi Circle
U.P. Munikireti.

No. 281/91905 Dated, Munikireti, August, 28, 1993.

To

The Manager (C),
Tehri hydro development Corporation Ltd,
15th Floor, Vikram Tower,
16 Rajendra Place, New Delhi- 110008.

SUB:- Vegetation of the Tehri Dam Submergence Area:
An Environmental Impact Assessment.

Ref:- Your letter No. THDC/BSI/682 Dt. 17/21/8/93.

Dear Sir,

Kindly refer to the letter cited above. The Catchment area is being planted with the species in accordance with the site quality and locality factors of the area. Indigenously growing species thus are always favoured and preferred for planting.

Species of the genera Pinus, Bauhinia, Acacia, Albizia, Pirus and Salix are already been planted in the area since the inception of the planting programme and the same shall be planted in the subsequent years as well. There are currently being raised in our nurseries along with other suitable and important species

As to the raising of Dodonaea, this species has nothing much to do in the stabilization as it being only a hedge plant. The same however, shall be tried in selected area in contour trenches. Syzygium Cumini also figures in our Choice of species and is already being planted in moist areas situated in comparatively lower altitude. Berberis lycium, Rumex hastatus and Rhus parviflora are only the shrub species and hence do not figure in our afforestation programme. In their stead Agave which is a very good soil binder

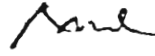
and fibre yielding species is currently being planted

on a limited basis in the areas which are erosion prone. How ever efforts shall be made to raise these shrub species in our nurseries in the immediate future. Hydrophytes like Hydrilla Vewrticillata shall be introduced in the reservoir only when it springs into existence. So is the case with Marsilea spp.

As to the medicinal plants, suitable action shall be taken for their conservation and rehabilitation.

Thanking You for making available the study report of B.S.I. However it will not be out of context to point out that we being professional foresters the species mentioned in the study report are already known to us.

Yours Faithfully,


(N.P. Nainwal) 28/8
Conservator of Forests
Bhagirathi Circle, U.P.
Munikireti.

No. / (1) Dated.

Copy to Chief Conservator of Forests (Uttaranchal) and (Garhwal) for information.

(N.P. Nainwal)
Conservator of Forests
Bhagirathi Circle, U.P.

DR. S. MAUDGAL
Adviser(IA)

D.O.No. 2-19/81-IA.I

Dear Shri Dewan,

Kindly refer to your letter No.8/24/90-D(T&N)/Vol.II dated 21st September, 1993 regarding the implementation of conditions of environmental clearance for Tehri Hydro Power Complex in continuation to which further discussions were held on 1st October, 1993. During the discussion, Dr. Chaturvedi, Director, Remote Sensing Applications Centre, Lucknow and his scientist colleagues had briefed about the data collected and the classification done for various categories of land uses in the catchment.

On the basis of the detailed discussions and perusal of the maps it had been mutually agreed as follows:

1. Catchment Area Treatment

-- The Remote Sensing Applications Centre would undertake the exercise of demarcating on a map the critically degraded areas i.e. areas covering E₁ and E₂ category of 'very high' and 'high' erodibility classification.

-- Simultaneously, the data collected by the Forest Department on the same subject would also be examined and the two sets of data reconciled.

-- Areas already treated would be clearly mapped after evaluating the efficacy and success of treatment.

पर
Telegram: PARYAVARAN,
NEW DELHI

दूरभाष
Telephone: 4362827
टेलिग्राफ (द्विभाषी)
Telex (bilingual): W-66183 DOE IN
फैक्स: 4360672

भारत सरकार
पर्यावरण एवं वन विभाग
GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT & FORESTS
पर्यावरण भवन, सी.ओ.ओ. कॉम्प्लेक्स
PARYAVARAN BHAWAN, C.G.O COMPLEX
लोदी रोड, नई दिल्ली-110003
LODI ROAD, NEW DELHI-110003

October 11, 1993

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-2-

- On the basis of these two maps, the area which have not been covered would be clearly identified and a phased catchment treatment programme would be prepared for its completion prior to commencement of reservoir filling.
- The proposal would also clearly indicate the existing infrastructure, manpower etc. and indicate the requirements of funds for the remaining phases of the catchment treatment scheme. A provision should also be made for additional funds required, if any, on the basis of mid course corrections that may have to be carried out during the course of action.

2. Command Area Development

During the discussion it was informed that the State Government is presently preparing a comprehensive Command Area Development Scheme covering existing areas receiving irrigation through various canal systems and the use of additional waters from the Tehri Project. A copy of this report would be ready by December, 1993.

3. Rehabilitation Master Plan

As per your suggestion, you may like to arrange the meeting at the earliest to discuss the socio-economic study conducted by Administrative Staff College of India, Hyderabad.

4. Flora and Fauna Studies

The preliminary reports for flora and fauna studies carried out by the Botanical Survey of India and the Zoological Survey of India are available with the executing agency. On the basis of the recommendations made in these reports, the THDC may be advised to prepare detailed Management Plans by December, 1993 with special reference to protection and conservation of such species as Mahaseer recorded in the project impact zone.

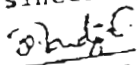
5. Bhagirathi Management Authority

A short write-up on the present status of progress may be furnished and you may like to pursue this matter with the State Government for enactment of legislation for creation of Bhagirathi Management Authority by December, 1993.

We await the above details and the commitment for their execution in a time-bound manner.

With regards,

Yours sincerely,


(S. MAUDGAL)

Shri V.K. Dewan,
Joint Secretary,
Ministry of Power,
Shram Shakti Bhawan,
Rafi Marg,
New Delhi.

V.K. Dewan
 Joint Secretary
 Tel. 3715378

D.O. No. 8/24/90-D(I&N)

22nd APRIL, 1994

Dear Dr Maudgal,

In continuation of my d.o. letter of even number dated 24th December, 1993 sending therewith maps and area estimate tables prepared by RSAC, UP in connection with catchment area treatment associated with Tehri Project, kindly find enclosed an action plan prepared by the Forest Department of UP for treatment of 13,500 ha in the direct draining catchment.

2. As you are aware, the Remote Sensing Applications Centre had identified 21,335 hectares of 'very high' and 'high' erodability classification requiring treatment in the entire catchment. As per the discussions held with you, the area to be treated was required to be demarcated after reconciling with the data of the Forest Deptt. On the basis of this, the area which has not been covered was to be clearly identified and a phased Catchment Area Treatment programme prepared for its completion before impounding the reservoir.

3. THDC has now stated that the detailed maps prepared by Remote Sensing Applications Centre demarcating critically degraded area were sent to forest department of UP for reconciliation. The position now emerges as under :-

i] total area identified for treatment as per the RSAC in the entire catchment - 23503 hectares

ii] area required for treatment as per Remote Sensing Applications Centre falling in the direct draining catchment - 10733 hectares

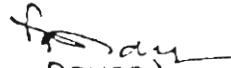
iii] area already covered by the forest department in the direct draining catchment [most of the treatment had been done by the forest department inside the direct draining catchment] - 1646 hectares

iv) after excluding the area treated in the direct draining area of catchment and the areas where treatment is not feasible due to the site conditions, the balance critically degraded area left for treatment in the direct draining catchment is -9000 hectares.

v) after taking into consideration the slope factor, the area becomes 1.5 time of the plan projection i.e. $9000 \times 1.5 = 13500$ hectares.

4. The forest department has now proposed treatment of 13,500 hectares during the next 7 years so that catchment area treatment in the direct draining catchment is completed before the impoundment of Tehri Reservoir. This has been suggested by them keeping in view the feasibility of the forest department of Govt. of UP to undertake the work.

Yours Sincerely,


(V.K. Dewan)

Dr. S. Maudgal,
Adviser (Impact Assessment)
Ministry of Environment & Forests,
Paryavaran Bhawan, CGO Complex, Lodhi Road,
NEW DELHI-110 003

✓ Copy to Chairman and Managing Director, THDC

ILLUSTRATION FOR PLANNING AND IMPLEMENTING OF ECODEVELOPMENT ACTIVITIES AS PART OF THE CATCHMENT AREA TREATMENT PLAN

the two most critical questions that need to be answered before a degraded ecosystem can be regenerated is : what in the first place degraded that ecosystem and how can one ensure that it does not get degraded again? These questions are often ignored.

Usually responsible are one or more of the following for the original degradation

- Unsustainable pressures from local communities, especially in terms of over grazing, excessive collection of fuelwood and other NTFP, inappropriate land use, etc.
- Willful neglect and destruction by the local communities primarily because they have no sense of ownership over the resource
- Lack of management inputs and investments
- Poaching and extraction by outsiders
- Inappropriate development and infrastructural projects and activities, including roads, dams, irrigation, mining and quarrying activities, etc.
- Inappropriate interventions by the forest department including clear felling planting of monocultures or of inappropriate species.

Consequently, if any strategy for regeneration is to succeed, and if the ecosystems are to be sustainably conserved, all these issues need to be addressed. The "watershed guidelines" given above need to be supplemented in this regard and for the purpose need to be dovetailed with ecodevelopment guidelines.

Essentially, ecodevelopment involves:

- Assessing the carrying capacity of the ecosystem in terms of the required land use, in this case catchment.
- Assessing the type and quantum of pressures on the area which are in contradiction with its assessed carrying capacity.
- Identifying the sources of these pressures and their social and economic legitimacy.
- Those pressures which are considered legitimate, primarily from local communities for their basic needs, are then targeted for diversion or minimisation.
- Where the demand is for biomass, the area is sought to be made more productive, other areas are also attempted to be so developed to add to the local supply of biomass, and the demand for biomass is sought to be rationalised.
- Where the demand is for income derived from biomass and other land based activities, in so far as they are beyond even the enhanced capacity of the area, alternative forms of income are sought to be established, along with training market feasibility surveys and initial seed money.
- All this is done, from the initial assessment to the final implementation, in partnership with local communities.

- Local communities, through appropriate institutions like ecodevelopment committees, are made equal partners in the management of the area and the major partners in managing the project
- The local communities, through their ecodevelopment committees, enter into a contract with the concerned government department, along the lines of joint forest management contracts, where they undertake to conserve the area in return for rights over usufructs and joint control.
- The communities also get, during the duration of the project, financial and other inputs in the form of seed money, training and wages for labour.
- A part of the wages they earn from the project are treated as their contribution and are put into a village trust fund, with a matching grant from the project. This village trust fund gets activated only after the project period is over and is managed by the local committees. This is used as a revolving fund to give loans to local villagers for setting up or expanding their own income generation units
- After the project is over, the money that would ordinarily have been spent by the forest department on protection of the area is handed over to the village community for organising their own protection. A proportion of this (perhaps 25%) goes into the village trust fund and the remaining is used by the village to organise protection.
- The understanding is that this is only available to those villages who continue to protect their areas. A system of external appeal is built in where there is dispute between the concerned department and the village on whether the area is being adequately protected.

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ILLUSTRATION FOR THE PROJECT FUNDED BY THDC

Project strategy and approach:

The project would adopt an integrated approach for sustainable management of watershed in the project area. Microwatershed (MWS) will be the unit for taking up project interventions related to the components identified below

- Forestry
- Livestock
- Horticulture
- Minor irrigation
- Agriculture
- Soil conservation
- Energy conservation
- Skill development

A convergent participative planning by local communication in the village falling within each MWS will be adopted. The project staff will act as facilitator in planning exercise which will be carried out through Participatory Rural Appraisal (PRA) methodologies. Priorities of the villagers identified during PRA exercise may have to be incorporated as "Entry Points" to win over their confidence and to ensure their participation.

Planning and Implementation:

(A) Overall Work Plan:

An Overall Work Plan (OWP) will be prepared for the entire project period. OWP will provide the indicative targets (both physical and financial) for different components and activities within each component. However, the OWP, would document the "over view" at project formulation stage and the sectoral targets may have to be revised intermittently depending on the feed back received and the data generated during the detailed planning which will be done annually.

(B) Annual Work Programmes.

The Annual Work Programmes (AWPs) will be prepared by the end of December for the following (financial) year. AWP will indicate the details of the activities to be carried out in the identified MWS under different component and distribution of allocation.

As mentioned earlier, MWS will be the unit of operation for watershed management. Since there would be more than one village within a MWS, the participatory planning process will be taken up for all villages falling within MWS

The "village plan" prepared through PRA techniques will incorporate the "entire area of influence" of that village (irrespective of the village boundary) and will also include adjacent forest land. Thus, village plans of all the villages falling within a MWG when consolidated, will give the plan for the entire area of a MWS.

(C) Users' Groups

While carrying out PRA exercises in the villages, the villagers will be facilitated to form formal/informal societies of Users' Groups at planning stage itself. These Users' Groups will take over the responsibility of managing their resources during the project interventions and also after the withdrawal of the project from the area..

(D) Gender Issues

Since women are the principal users of the land based resources their active involvement in planning, implementation and subsequent management of resources will be ensured. During PRA and while facilitating the formation of User Groups and developing the concepts of revolving funds, gender issues will be properly looked into.

Women motivators as also subject matter specialist to form multi disciplinary team will be engaged on contract basis to facilitate involvement of women in the project and participatory processes.

(E) Revolving Funds

Efforts will be made to generate revolving funds for the User Groups during the project implementation stage. These revolving funds will be managed by the User Groups by operating a joint account and loaning amongst the members of the Users Groups will be developed and efforts will be made to facilitate counter part funding by different agencies.

(F) Skill Development and Income Generation.

Depending upon the feedback received during PRA exercises, skill development and income generation activities will be identified. Mushroom cultivation, bee keeping, floriculture etc. may be some of such activities. These will be linked with revolving funds for providing loans.

FINANCING

The project will be financed out of grants provided by Telur Hydro Development Corporation (THDC)/other funding agencies for the project activities and administration and management costs including staff salaries.

Procedural Aspects.

An Empowered Committee will be constituted at the State Level. The Empowered Committee would meet at least twice a year to review the progress of project implementation. The OWP & AWP will be approved by the Empowered Committee before implementation of the project is started. Any major mid way changes will be approved by Empowered Committee. Since secretaries of Finance and other administrative depts. will be members of the Committee, the approved OWP & AWP and other decisions regarding staff to be engaged on Contract will be treated as financial and administrative sanction for implementation of the project.

An independent monitoring/ evaluation team would also be commissioned to oversee & monitor the progress of implementation of AWP as also the quality of work.

lenvrpt05.doc
June 29, 1997



टिहरी हाइड्रो डेवलपमेंट कॉरपोरेशन लिमिटेड
Tehri Hydro Development Corporation Limited

एम० एल० गुप्ता

प्रधान एवं प्रबंध निदेशक

M L GUPTA

CHAIRMAN & MANAGING DIRECTOR

No. THDC/OMD/502 --
Dt. 22nd January, 1997

Dear Prof. Hanumantha Rao.

This is with regard to the decision taken in the meeting of the Expert Committee meeting held on 13th January, 1997, to entrust to the Wadia Institute the review of the following :

1. Reservoir Rim stability of Hill Slopes:
2. Effect of impoundment on water quality:
3. Sedimentation and run-off, including glacial sediment transport; and
4. River flow and hydraulics.

As already appraised to the Committee, Reservoir Rim Stability studies had been carried out by the University of Roorkee and the GSI which were based on field investigations. The study carried out by the Wadia Institute of Himalayan Geology (WIHG) during the year 1983 was forwarded to the GSI who considered that the WIHG report was based on preliminary studies without going into site specific problems related to the hill stability.

As regards the studies at S.No. 2, 3 and 4, these have been conducted by the UOR, and the CWC/NIH under the Ministry of Water Resources, who are the only Government agencies for these studies. The WIHG is primarily a Research Institute who conduct studies in the field of Geology and we feel that this Institute is not qualified for conducting the above three studies or reviewing the studies conducted by specialised institutions. As regards the river flow and run-off studies, THDC has already indicated its position with regard to the flow data being classified information, for which THDC has given an undertaking to maintain its secrecy. This data can be furnished only after approval of the concerned Government authorities.

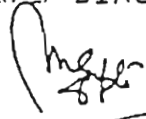
It would have been appropriate if the Committee had requested the concerned agencies to clarify or explain any point or doubts which any of the esteemed Committee Members might have. I would, therefore, suggest that before any studies are to be reviewed, the GSI/UOR/NIH/CWC may be asked to present their studies before the Committee and offer any clarifications which may be required. Further review, even if needed should be got done through specialised institutions for which suggestions could be obtained from the concerned Ministries/Departments.

Continuation Sheet.....

A copy of detailed comments on the proposal to get the studies reviewed by WIHG: including GSI's compilation of studies in Reservoir area, ~~and comments/appraisal~~ of the studies on Rim Stability carried out by WIHG is enclosed for perusal.

With kind regards,

Yours sincerely,


22/11
(ML GUPTA)

Prof. Hanumantha Rao
Chairperson
Expert Committee on Rehabilitation
Environment Aspects
-B, Jubilee Hills, Road No. 1
Hyderabad -500 035.



वाडिया हिमालय भूविज्ञान संस्थान
WADIA INSTITUTE OF HIMALAYAN GEOLOGY
(भारत सरकार के विज्ञान एवं प्रौद्योगिकी
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DEHRA DUN-248001 (U.P.)

FAX : 011-4627751

No. 12/17/TC/96-97
Date: 4.3.1997

To,
Sh. N.D. Jayal
Room No. 15
The Himalaya Trust
India International Centre
NEW DELHI

SUBJECT: Comments on the THDC 1992 Reports on "Tehri Dam Reservoir rim Stability of hill slopes and Effect of impoundment In Tehri Reservoir on Water Quality"

Sir,

I am directed to enclose herewith comments on the above mentioned reports for further necessary action at your end.

Thanking you,

Yours faithfully,

(DR. K.K. PUROHIT)
Technical Secretary

Comments on the THDC 1992 Report on
TEBRI DAM RESERVOIR RIM STABILITY OF HILL SLOPES
AT VILLAGE SITES WITHIN 500 M FROM FRL.

Following are the comments on the above report.

a. General

The stability of slope in relation to river impoundment and the formation of a large lake body in a geologically sensitive terrain is a problem that confronts project managers and environmentalists alike. It is therefore important that slope studies are carried out with a sense of responsibility, clarity of data and lucid deductions. The report under review contains some detailed site specific studies pertaining to hill slope stability taking into consideration the normal as well as extreme conditions like earthquakes, storm events, etc. The report also takes into account the slope stability of the reservoir rim in drawdown conditions in various seasons.

b. Chapter 1 - Introduction

1) The observation in column 1.3 (page 1) of the report that the villages above the FRL have existed for centuries, vis-a-vis that the sites are stable, is not disputed to some extent. But what is important is that the natural equilibrium of slope by artificial impoundment may be influenced in some way, depending upon the local conditions, ~~however~~ to eventually lead to slope failure and consequent soil erosion, which will be detrimental to village establishment and the siltation of the reservoir.

ii) The same point (as in column 1.3) has been emphasised in one way or the other in column 1.4 and again a common set of

explanation has been offered on the earth surface processes which is not disputed. The whole question is that of change in the natural equilibrium conditions of the slope material which react with certain inertia. Whether oversaturation of slope material by river impoundment disturbs this equilibrium or not is to be assessed on ground realities rather than in theoretical or verbose terms.

(ii) The observations made in column 1.5 (page 3) related to the evolution of slope in simple terms. This is a long drawn geomorphological process and cannot be equated with changes occurring naturally against those developed artificially. The point that may be stressed here again is disturbance to the natural equilibrium which needs to be properly assessed.

c. Chapter 2 - Geology

As regards the geological setting, no map has been provided to depict the rock types and their disposition in the Tehri reservoir area. No detailed site specific structural data i.e. bedding, cleavage, schistosity, foliation, joint pattern, etc. (on an enlarged scale) has been incorporated in the report to appreciate the slope stability results derived from wedge failure analysis method. This is absolutely essential in studies under reference. Geomorphic details (column 2.7) have been directly ~~made~~ ^{taken} from the WIHG report (1983) without actually including it in the bibliography.

d. Chapter 3 - Geotechnical Characteristics

As a first hand information it would be desirable to prepare a geotechnical map (rock mass strength) of the reservoir

area based on Schmidt Hammer technique. Using standard values of rock mass strength given by various authors has the risk of by-passing the geotechnical attributes existing on ground. No method whatsoever employed in measuring the rock mass strength in the field has been mentioned by the authors in the report.

e. Chapter 4 - Method of Analysis

Expert opinion of geotechnical specialists must be sought both on geotechnical data collection and analysis and interpretation of the results.

f. Chapter 5 - Results

While the report highlights the inputs that have been employed in the analysis and interpretation of geological and geotechnical data, the overall manifestation of expected or likely impact on slope stability is adversely lacking. In explicit terms, the stability classes for the entire reservoir rim should have been depicted in map form with site specific enlargements. That would give a conceptual understanding on the dimension of the problem in reference. The WIHG has already submitted a detailed report in 1983 which could have been utilised for such work. The geomorphological map in that report in particular gives a comprehensive data base (1: 25,000) where geological and geotechnical parameters could be employed to deduce the slope stability changes upon river impoundment. The map candidly outlines the variety of alluvial fills and the hard rock slopes that will be exposed with the reservoir water. The other advantage in ~~the~~ ~~report~~ would be easy referral of village sites above the ~~reservoir~~ ~~level~~ which is otherwise difficult to

visualise. It is not in the scientific spirit that this data base be ignored summarily, ostensibly to project the merit of the report under review.

The report is silent on upslope changes that would ensue consequent to any possible impoundment related instability. It is interesting to note that the report indicates a stable position of the slopes almost everywhere. Would ~~any~~ it be a sheer coincidence (?). This needs to be re-examined.

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वाडिया हिमालय भूविज्ञान संस्थान
 WADIA INSTITUTE OF HIMALAYAN GEOL
 भारत सरकार के विज्ञान एवं प्रौद्योगिकी
 विभाग का एक स्वायत्तशासी संस्थान।
 (An Autonomous Institution of Dept. of Science
 & Technology Govt. of India)
 33, जनरल महादेव सिंह मार्ग
 33, General Mahadeo Singh Road,
 देहरादून-248001 (उ०प्र०।
 DEHRA DUN-248001 (U.P.)

Dated: 17.04.1997

To

Mr. D.P.S. Lamba
 Secretary
 Expert Committee on Rehabilitation &
 Environmental Aspects of Tehri
 Hydro-Electric Project
 15th Floor, Vikram Tower
 16, Rajendra Place
 New Delhi- 22- 008.

Dear Mr. Lamba,

This is in reference to your letter No. THDC/DP/EC/97/232-234/2706 date 03.04.1997 regarding meeting of Expert Committee on Rehabilitation and Environmental Aspects of Tehri Hydro-electric Project being held on reschedule date of 18th April, 1997 at IIC, New Delhi. Since we have discussed at length the various aspects of slope stability studies during the previous meeting held on 7 April 1997 I have nothing more to add in the proposed meeting. In any way I am not able to reach Delhi for this meeting due to my preoccupation on this date. However to smoothen the deliberations of tomorrows meeting I am herewith sending a note emerging mainly out of my previous discussion in April 7 meeting.

In case you require any further clarifications please feel free to write.

With best regards.


 Dr. (R.K. MAZARI)

TEHRI DAM RESERVOIR RIM STABILITY OF HILL SLOPES AT VILLAGE
SITES WITHIN 500 M FROM FRL

The stability of Tehri reservoir slopes in relation to river impoundment was discussed in light of the comments offered by WIHG on the THDC report held at Wadia International Centre, New Delhi on April 7, 1997. The main point that emerged at the meeting emphasised the course of action to be taken next, and is done in this note.

The WIHG as per the terms of reference in earlier meetings during early eighties prepared a report (1983) showing likely impact of reservoir water on the rim slopes in gross terms. Specifically the report shows the various stability classes for a quick grasp of the problem in question. Four main classes of slope stability have been documented in the report. The subsequent studies carried out under the auspices of the THDC related to geotechnical parameters to determine the stability of slopes within 500 m from FRL, particularly around the village establishments.

While point specific studies have their own merit, it is pertinent to show the likely impact of impoundment on the reservoir rim slopes in map form depicting various classes of stability as has been done in the case of WIHG report (1983). Such a plan view will go a long way in appreciating the environmental impact of the Tehri reservoir in a more broader and objective way rather than limiting it to specific points around the rim. The THDC report is silent on upslope changes that could ensue consequent to any possible impoundment related instability. It is interesting to note that the report indicates a stable position of the slopes almost everywhere. Would it be a sheer coincidence or this would need re-examination.

As regards the geotechnical approach that has been employed in the THDC regarding slope stability studies the comments are reserved since WIHG does not have the geotechnical expertise.



Dr. (R.K. MAZARI)

Wadia Institute of Himalayan Geology
33, Gen. Mahadeo Singh Road
Dehra Dun- 248001.

Dated: 17.04.1997

RIM STABILITY

Extract from 11th meeting held on 18&19-4-1997

Discussion with Prof. L.S. Srivastava, formerly Professor in Deptt. of Earthquake Engineering, University of Roorkee.

Prof. L.S. Srivastava participated in the discussion on stability of the reservoir rim of Tehri dam with the Committee in response to the invitation of the committee. Prof. L.S. Srivastava informed the members that he joined University of Roorkee in 1958 as Lecturer in Geology. In 1964, he moved over to Department of Earthquake Engineering (formerly named School of Research & Training in Earthquake Engineering) from Department of geology and Geophysics (now named as Department of Earth Sciences). He told that he has been associated with engineering geological and geosismological studies of the area around the Tehri Dam site from time to time since 1962 and has visited the area. He retired from Roorkee University as Professor in 1993 and was the head of Earthquake Engineering Department ^{from} 1982-1985 (three year term). In 1983 his group in Roorkee University carried out the study of stability of Tehri Dam reservoir rim consisting of various insitu rocks, alluvial deposits and other surfacial material, and submitted a report in May 1983. The basic data collected by his colleague Dr. A.K. Jain during field investigation, which led to the award of Ph. D. degree to him, was utilised in this study. Earlier studies on geomorphology and related studies were also taken up by Dr. R.K. Mazari of Wadia Institute of Himalayan Geology (WIHG) and valuable discussions were held with him and Dr. S.C. Shah (the then director of WIHG) which also helped in preparation of maps of the Tehri Dam reservoir rim.

The 1983 study was based on study of near surface rocks and overlying alluvial deposits and concluded that existing hill slopes, in general, appear to be stable as bedding planes and major joints dip toward hillsides, except in some regions with alluvial deposits and near surface intensely fractured/jointed slaty phyllites. Further investigations undertaken after 1983 were presented in a report in July 1986, which incorporated detailed maps showing geological, geomorphological, forest/soil cover and slope classification characteristics. Large scale maps (1:50,000) were compiled, although reduced size figures were given in the report. The 1986 report and various maps compiled for the study were presented before the Russian Consultants, who subsequently got involved in the construction of Tehri Dam. Similar study of reservoir rim stability has been carried out for Koteshwar Project.

The result of study incorporated in "1986 report" concluded that the hillsides forming the Tehri Dam reservoir rim extending from the present river bed level to the hill tops are stable. The surficial material lying over the insitu rock formations from present river bed level upto 1000 m AMSL (above mean sea level) are, in general, noted to be stable as the average slope is less than 10° . Steep slopes (higher than 25°) in surficial material are less than 20 m in height which could undergo local slumping/sliding. The report pointed out that villages are generally located near terrace cultivation fields on hillsides. Evaluation of stability of all villages located on the surficial deposits above full reservoir level (FRL) around the reservoir rim was recommended.

During subsequent investigations stability of the area of all the villages located within 500 m from the full reservoir level was studied. Each village site along the reservoir rim was surveyed by U.P. Irrigation Department and ground profiles at all village sites were made available for the study. Contour map of the reservoir prepared by the Survey of India, Ministry of Defence was also utilised. The aerial photographs permitted to be studied by the Ministry of Defence and large scale maps, being classified documents, were not included in the report which was submitted in September 1992. This report did not include the results of study of the village sites which will be submerged on filling of the reservoir to the FRL. The report incorporated the results of study at 66 village sites within 500 m above the FRL and concluded that the hillsides at all these village sites are stable. The stability was evaluated taking into consideration nature of geological formations, structural features, land forms, probable failure mechanism (model), seismic ground motion and other factors. Computer programmes were developed for slope stability analysis under the guidance of prof. Bhawani Singh. Field Surveys were carried out by Prof. A.K. Jain and Research Assistants and litho-tectonic units and structural features present at each village sites were studied, which indicated that in general edges of the rock wedges bounded by the predominant bedding, foliation and joint sets plunge into the hillsides. These have provided the stability to the rock slope at village sites. The villages located at or adjacent to the terrace deposits were found to have adequate factor of safety against sliding.

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On a query from a Member that when the reservoir will be full, water table will rise and whether in that case also the rim slopes will be safe. Prof. Srivastava explained that stability has been evaluated under prevailing normal conditions as well as extreme natural hazards (earthquakes, hydrometeorological condition, etc.). Full reservoir conditions were considered for analysis under earthquake loads. As per internationally accepted engineering practice earthquake force was not taken to act simultaneously with the extreme hydrometeorological conditions as the probability for the two to occur at the same time is extremely low. Maximum credible earthquake (ground motion) with FRL and normal ground water level in the hill sides was considered. Impounding of water will fill the voids in hillsides in place of air and will not change the shear strength characteristics of the insitu rock mass or create any additional danger to the hillsides. The existing rock conditions indicate that "well-drained" conditions would exist along the hillsides forming the reservoir rim and dilatation and or collapse of hillsides will not occur. Slopes along the rim will adjust within reasonable limits during fluctuations of the reservoir and will not lose their integrity.

On a query by a Member that the worst scenario has not been considered, he explained that one cannot take all worst conditions to occur at the same time and out of 5 or 6 factors at the most 1 or 2 conditions can be ^{of} extreme nature. All the conditions cannot be of extreme nature simultaneously. They have adopted a deterministic approach considering the realistic values of the possible factors and not extreme values based on a probabistic approach. They have also kept in view the purpose for which the study was under taken, for example if it is design ground motion (earthquake) related to design of high dam, then performance has to be checked for extreme values, but not on the issue related ^{to} stability analysis of reservoir rim slopes whose failure does not create very high risk. He clarified that he has considered 0.25 g as peak ground motion in the time history of ground particle horizontal acceleration used in carrying out displacement analysis of ^{to} hillsides, results of which were given in the 1986

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report. He also clarified that total saturation of hill slopes above prevailing ground water level during a cloud burst generally remain only for 1-2 days. The occurrence of a cloud burst with full reservoir level alongwith occurrence of maximum credible earthquake at the same time have not been considered in the analysis. But he was of the view that even in such a situation the hillsides will be safe considering the factor of safety adopted by them. Based on the 1936 report it can be concluded that a scenario of overtopping of the dam due to very large rock mass falling into the reservoir will not occur as the reservoir rim is stable and possibilities of collapse and onrush of failed rock mass into the reservoir generating a high water wave to overtop the dam can be ruled out.

On ^{an} other query from a Member, Prof. Srivastava explained that water in the reservoir load the toe of the hillsides which act as counter weight increasing the stability against sliding, and toe loading will prevent movement of hillsides into the reservoir. He further clarified that Roorkee University had already discussed this issue of rim stability with the representatives of the Wadia Institute at the time of preparation of their 1983 report as well as after the Wadia Institute prepared their Report. On the objection of Wadia Institute about the scale of the maps on a scale of 1:50,000 he mentioned that G.S.I. have maps with the scale of ^{1:25,000} ~~1:50,000~~ (which were confirmed by Mr. Nawani, representative of G.S.I.) . He further stated that the maps produced by Wadia Institute have also been made available to them by the project authorities and these were also considered by them while preparing the 1986 report.

RIM STABILITY

Extract from 11th meeting held on 18&19-4-1997

Discussions with Dr. P.C. Navani, representative of G.S.I. Sr. Geologist and Party Chief, Tehri.

Dr.P.C.Nawani came as representative of G.S.I. for discussion with the Committee in response to the invitation by the Committee regarding rim stability of slopes. Dr.Nawani opined that the Report of Wadia Institute of 1983 is based on aerial photo interpretation on 1:60,000 scale and it provides broad identification of different zones of slope stability above the proposed Tehri reservoir rim. However, this Report does not deal with the site specific problems. On the other hand, report from Roorkee University of 1992 touches upon site specific status of the slope stability above FRL encompassing about 66 villages. The analysis is based on the characteristics of the geotopical and structural features under extraordinary conditions of MCE and water saturation, as explained by Prof.L.S.Srivastava.

Dr.Nawani informed that a long term study programme has been drawn in 1985 by the G.S.I. to identify and evaluate potential areas of slope instability, silt generation and calculate actual rate of siltation in Tehri/Koteshwar reservoirs. This study programme contemplates large scale investigations in three stages - before and after the completion of the Coffor Dam and after the completion of Main Dam when the reservoir in operation. Base data as regards to channel gradient, valley configuration, degradation and silt accumulation along the Bhagirathi and Bhillangana rivers has already been completed. These will be of immense help in maintaining the macro and micro level changes in geology, geomorphology, mass wasting activities, sedimentation with the change in hydrological conditions with the impoundment of the reservoir. This exercise will bring out ground reality as regards to slope instability, silt generation and accumulation. No extraordinary geotopical situation related to instability of slopes has been encountered during the first stage of investigations.

While commenting on the processes responsible for destabilising the slopes, Dr. Nawani expressed the opinion that this has to be understood in terms of natural processes which would in fact come into play after impoundment of reservoir. He explained how Bhagirathi river which was river bed, in the past, had affected the slopes during progressive down cutting and this process of downward erosion and toe cutting of the slopes by river/stream will be checked or completely ceased with the impoundment within the reservoir once the high energy fluvial regime changes into the lacustrine (lake) regime supporting quiet water condition. With the result, the stability of the slopes will improve as reservoir water will always be present at least upto the dead storage level providing additional support. Further, the accumulation of silt load in the dead storage capacity would provide a padding effect and thus give further toe support to the standing slopes. The water table will rise and would create favourable condition for the growth of the vegetation on these slopes which will in turn improve the slope stability.

He stated that the sedimentation pattern in a reservoir is akin to the process of delta formation at the confluence of silt laden streams with the reservoir lake. As a result, a major part of silt load would get arrested in the upper part of the reservoir.

In a reply to the specific query by one Member on the letter written by Dr. Nawani to THDC in 1990 regarding instability in some areas on the left bank of the Bhagirathi, he informed that he had written this letter to AGM (Reh. & Env.) to supply large scale (1:5000/1:10,000 scale) topographic maps based on ground surveys by Survey of India, as some problematic areas were identified during preliminary investigations in some villages on the basis of information received from the villagers. He added that the Report from Roorkee University (1992), however, confirmed that these areas/villages have no problem of instability.

Comments on the Report
"EFFECT OF IMPOUNDMENT IN TEHRI RESERVOIR ON WATER QUALITY"
BY THDC, RISHIKESH

River impoundment and the resultant man made lakes generate a number of impacts which affect the human, biological and physical component of the environment. The quality of natural river-water is controlled predominantly by the ultimate hydrogeological characteristics of the drainage basin. Water storage in open reservoirs induces physical, chemical and biological changes within the stored water. As a result water discharged from impoundments can be of different composition, and can show a different seasonal pattern, from that of natural river. Many factors influence the quality of reservoir discharges, but forces capable of generating reservoir stratification and hence discharges of different quality from different stages elevations are particularly important.

Reservoirs also act as thermal regulators and nutrient sinks so that release from them may have relatively high concentration of many chemical constituents. Wetzel (1975) predicted that Ca/Na ratio can increase in rivers receiving hypolimnial releases. During certain periods of the year, reservoir discharge can have extremely low concentrations of Dissolved oxygen (D.O.) and unnaturally high concentrations of iron, manganese and hydrogen sulphide. The impoundment of a river causes two major changes in the character of water both of which have a marked effect upon the water quality of the release - firstly, the creation of a reservoir greatly increases the travel-time of water through the system, secondly thermal or density stratification may occur. Density stratification can have severe consequences for downstream water quality particularly if the reservoir releases are large in relation to the cumulative volume of tributary discharges.

Thermal Stratification

Water temperature is an important quality parameter for the assessment of reservoir impacts upon downstream aquatic habitats. In a reservoir, however, the increased mass of relatively still water allows heat storage to take place and thus produces a seasonal pattern of thermal behaviour due to temperature-density difference in water. As lake gains heat and its surface temperature increases a well defined temperature gradient develops with well developed stratification. Once a thermal stratification established, chemical changes within the impounded water will follow.

Chemical changes within the reservoir have been attributed to a variety of factors that are typically associated with their flow dynamics and biological activity. Major biologically induced water quality changes occur within thermally stratified reservoirs. Phytoplankton often proliferate in the warm epilimnion, releasing oxygen and maintaining concentrations at near saturation levels for most of the year. Little mixing occurs below the thermocline and sunlight necessary for photosynthesis, does not

nerate to the hypolimnion which, deprived of reoeration, cannot replenish the D.O. used in biochemical processes. Due to settling of dead phytoplankton and the presence of heterotrophic bacteria, oxygen will be consumed in the hypolimnion often exhaustion. Thus the process of organic matter decay becomes anaerobic, hydrogen sulfide gas is produced, CO₂ is released, pH decreases, conductivity, alkalinity and phosphate all increase, and the solution of iron and manganese occurs from the bottom sediments. The quality of hypolimnetic water thus becomes progressively worse.

Lakes act as nutrient sinks and considerable attention has been directed to the eutrophication of natural lakes resulting from the accumulation - particularly of nitrogen and phosphorus, although K, Mg trace element (Fe, Mn & Cu) and organic growth factors also play a role.

The nutrient concentration within different layers of reservoir will demonstrate seasonal changes with oxidation reactions becoming dominant during periods of stratification and mixing whilst reducing reactions occur within the hypolimnion during anoxia.

Changes of water quality below dams can affect fish species and populations in several ways: by exceeding tolerance limits; by inhibiting the normal sequence of production, development and survival and by altering the competitive balance and predator-prey relationship. Water chemistry changes can also be significant for riverine life. Downstream from an impoundment, nutrient availability may be decreased, because of metabolism within the reservoir, and this will be repeated by reduced load of nitrogen, phosphate and other dissolved elements. Such changes would effectively lower primary productivity of the river.

From the above discussion, it is clear that impoundment makes several impacts on the water quality of the reservoir and downstream water. Therefore, it is essential that assessment of the likely impacts should be based on the carefully selected parameters depending on the use of reservoir water and downstream water for different purposes.

Water quality parameters for different purposes/uses include:

Water potability (for drinking purposes): Parameters related to inorganic constituents, include - pH, DO, EC, TDS, hardness, Ca, Mg, K, Na, Al, HCO₃, SO₄, Cl, NO₃, Ag, As, Ba, Cd, C, N, Cr, Cu, F, Fe, Hg, H₂S, Mn, Mo, Ni, P, Pb, Se and Zn.

Industrial use: Turbidity, iron, Mn, TDS, hardness, alkalinity, H₂S and pH.

Irrigation: EC, sodium hazard, salt tolerance, trace metals, total dissolved solids, pH, DO, sodium, chloride, Boron, Heavy metals, arsenic, fecal coliform.

(iv) Aquatic Life and Fisheries : Temperature, suspended solids, turbidity pH, DO, Ammonia, Nitrate, Chemical Oxygen demand, Biological Oxygen Demand, (BOD) cyanide, Heavy metals, Arsenic and selenium, Pesticides and other organic contaminants.

(v) Power generation : Suspended solids Dissolved solids, Ph, Hardness, DO, Chemical oxygen demand.

The report in reference deals only with dissolved oxygen (DO) and temperature. Though DO is an indicator of water quality for aquatic life but is not sufficient to assess the quality of the impounded reservoir water for different uses. For example, silica content and hardness of the water is important for hydro projects. Other parameters such as bacterial count, BOD and trace metals NO_3 and PO_4 are also important for aquatic life within the reservoir. Impoundment of water may adversely affect these parameters.

As stated in the report the impoundment of water in the reservoir would produce thermal stratification and may increase the temperature. Besides having advantages of increase in temperature, the negative aspects of the increase in temperature such as eutrophication should also be considered while evaluating water quality which may in turn reduce the D.O. level and toxic metals and nutrients may be released with sediments.

It is also not mentioned how DO has been measured. Other parameters of water quality should also be taken into account while assessing quality of water of the Tehri reservoir for different purposes which is likely to be a multipurpose dam.

The report under review does not represent comprehensive study of water quality report, as commented above. Hence for a multipurpose project like the Tehri this study needs to be done seriously to account for likely impact of impoundment on the water quality of the entire system.



टेलिग्राफ / Telex : 0715-7233
 गाव : नेहरो / Gram : NEERI

फोन / Phone : 226071 to 226075

राष्ट्रीय पर्यावरण अभियांत्रिकी अनुसंधान संस्थान
 NATIONAL ENVIRONMENTAL ENGINEERING RESEARCH INSTITUTE

नेहरू मार्ग, नागपुर / Nehru Marg, NAGPUR-440020

अ. शा. सं. / D. O. No. WTD/41/97

दिनांक / Date 3.5.97

SPEED POST

Professor Shikhar Singh
 Indian Institute of Public Administration
 Indraprastha Estate
 Ring Road
 NEW DELHI 110 002

Dear Sir,

Sub: Effect of Impoundment in Tehri Reservoir on Water Quality

This has reference to your letter of April 26, 1997 addressed to Dr. Khanna, Director of this Institute enclosing a report on the aforementioned subject for his comments.

Please find enclosed the comments on the report duly approved by Dr. P. Khanna.

Thanking you,

Yours faithfully,

Encl : as above

R. Paramasivan
 (R. Paramasivan)
 Deputy Director & Head
 Water Technology Division

NATIONAL ENVIRONMENTAL ENGINEERING RESEARCH INSTITUTE
NEHRU MARG : NAGPUR 440 020

Comments on the Report

Effect of Impoundment in Tehri Reservoir on Water Quality

General

In the modelling studies, only two parameters viz., temperature and dissolved oxygen (DO) have been considered and quantitatively assessed through mathematical modelling using finite element technique. The Huber and Harleman model modified by Markofsky and Harleman has been used for thermal stratification studies, while the Markofsky and Harleman model has been employed for DO studies. The input data for most of the parameters in the models has been furnished by the project authorities and the rest of the parameters have been either estimated or assumed by the modelling team.

The modelling studies for thermal stratification have shown that the temperature varied from 13°C to 17°C over a depth of about 200 m of the reservoir and that the outflow from the Tehri reservoir will be warmer than the inflow throughout the year, the rise in temperature being 2-3°C in summer months and 6-8°C during winter months (p-3).

The modelling studies for DO indicate that the outflow DO does not change much from the inflow DO, and ranges between 4.5 ppm and 8.0 ppm. The level of DO in the outflows is always higher than that required for the various downstream water uses considered (p-5).

As for the impact, the higher temperatures of outflows are reported to be beneficial from agricultural and fisheries point of view.

Comments

The following are the specific comments on the report :

- * The rationale and appropriateness of the models used in the study in preference to the more widely used models such as WASP-4, which can model both temperature and DO simultaneously, needs justification. Further, the study has

been restricted to two physical parameters only, viz. temperature and DO. The actual values used as input data for modelling are not stated to facilitate a critical review of the results reported.

* It is well-known that the Himalayan rivers carry considerable sediment load, most of which will be settled in the reservoir due to impoundment. Over a period of time, due to biogeochemical changes in the accumulated sediments, the water quality would be affected. When anaerobic conditions prevail in the bottom layers, iron and manganese are reduced and go into solution, sulphates are reduced, hydrogen sulfides are formed and the pH of the water is lowered by the excess carbon-di-oxide that is generated. The impact of these changes on water quality could be significant from the point of view of corrosion if the impounded water is used for hydro-power generation.

* Depending upon the nutrient inflow into the reservoir, the process of eutrophication may set in with its associated impact on water quality. Apart from possible tastes and odours resulting from increased algal activity due to impoundment, the DO levels in water will also be affected. The modelling studies have not addressed these aspects.

The temperature profiles obtained from the modelling studies and depicted in Figs. 2 through 16 (Annexure p. 14 to 28) do not match with the temperature values reported in the text (p-3)

As per the modelling studies, the temperature of outflows from the reservoir will be higher throughout the year than that of the inflows, the increase in temperature during winter months being of the order of 6-8°C. Naturally, the DO levels in the outflows should be expected to be less than that in the inflows. However, the trend in DO values depicted in Fig. 3 is the reverse i.e. a higher DO value of outflow at higher temperature while the influent DO is less.

The phytoplankton forms an important link in the food chain affecting the fisheries potential. The impact of impoundment on these aspects has not been addressed.

THDC CLARIFICATION ON COMMENTS OF NEERI, NAGPUR AND WHIG
GIVEN ON 11.7.97.

1. RATIONALE AND APPROPRIATENESS OF THE MODEL USED :

The University of Roorkee had used the models for temperature prediction by "Huber and Harleman" modified by Markofsky and Harleman, i.e. for thermal stratification and Markofsky and Harleman Model was employed for DO predictions. There are various models available for prediction for temperature and DO level studies. Since Prof. P.K. Pandey had been associated in the use of these models which have been validated by applying them on "Fontanna Reservoir" in USA, accordingly the temperature prediction and DO prediction have been done separately by use of respective models. WASP-4 model which may be available with NEERI for mathematical modelling simultaneously for temperature and DO level prediction may be one of the several models which may be internationally available. The appropriateness of the model used has been validated on one of the important reservoirs in the world before this was used by the University of Roorkee. The same model has also been used by Japanese for the water quality modelling studies for Yakoyama reservoir project in Japan.

Regarding input data as mentioned on Page 4 of the Report, it is a normal practice that the final results and conclusions are given in the Report, however, the voluminous input data and the calculations are not appended in the Report. All the input data and other parameters which have been collected from IMD, CWC were given to University of Roorkee and is available on records.

2. BIO-GEO-CHEMICAL CHANGES IN THE ACCUMULATED SEDIMENTS :

It has been stated by NEERI that when anaerobic conditions prevail in the bottom layers, the impact of chemical parameters, i.e. Iron and Manganese, gaseous impurities like Hydrogen Sulphide gas, Carbon dioxide, etc. is generated affecting the ph value of the water. It may be mentioned that the chemical analysis of the water quality of Bhagirathi river at Tehri Dam site has been carried out indicating the total dissolve solids varying from 100-400 ppm, absence of iron ions and sulphide ions in small quantities. In the Tehri reservoir, since the water shall be drawn for downward releases at a level 120 m from the river bed, the total dissolved solids would further get reduced. As regards the gaseous impurities since sulphide ions are in small quantities and iron ions are absent (Annexure-I), there is no likelihood of generation of

hydrogen sulphide gas with the formation of Tenri reservoir. The carbon dioxide produced due to decomposition of organic matter when combined with water forms carbonic acid which may dissolve limestone and dolomite which may become source of temporary hardness of water. Since limestone and dolomite do not exist in the Tehri reservoir submergence area, formation of carbonic acids and consequential resultant temporary hardness of water will not be there. As such the pH value of the water will not undergo any change. There is no likelihood of any impact on water quality from the point of view of corrosion as the iron ions are nil.

3. EUTROPHICATION :

Eutrophication of reservoir is a highly complicated phenomenon that depends upon hydrodynamical, chemical, physical, biological and geographical characteristics of the reservoir. Trophic nutrients flowing into the reservoir from household waste water, industrial effluent, etc. are normally inducing eutrophication in reservoir with long hydraulic residence time by promoting excessive growth of algae. The distance between the Tehri reservoir from the origin of river Bhagirathi i.e. Goumukh glacier is only about 160 km and there are no industries or household waste water as such which is joining the river

course. There is no major city upstream of the Tehri reservoir and as such there are no trophic nutrients which are flowing into the reservoir. Thus, the process of eutrophication shall not set in. The DO levels in the reservoir water have been well addressed in the modelling studies.

4. TEMPERATURE PROFILES :

As per the study conducted by UOR, the reservoir gets thermally stratified in the 4 months during the first year of its initial filling. It may be noted from the perusal of figures 2, 3 & 4 on Page 14, 15, & 16 of the UOR Report which indicates the initial first 3 months of the filling. In figure 5 the temperature is nearly 13 deg. C and as mentioned in the Report the temperature varies from 13-17 deg. C in the stratified reservoir. As such there is no mismatch in the temperature values reported in the text at Page 3.

5. DISSOLVED OXYGEN :

As per the modelling study the temperature of released water would be higher than the inflow temperatures of water, because the water intake lies in thermocline region (upper region) which is not effected by the inflow temperatures. The average DO in outflow has been found to be around 8.5 ppm. The DO levels in the outflow will

always be at saturation level in this region. Therefore, the DO value of outflow would remain close to the average DO level of inflow and is not directly governed by the temperature change in inflow.

6 PHYTOPLANKTONS:

Phytoplanktons are the aquatic vegetations, which tend to increase in relatively still water of the reservoir. ICOLD literature on this subject has reported some problems in small reservoirs due to excessive growth of phytoplanktons. However, such problems have not been observed in large reservoirs in India, China, etc. As reported in ICOLD literature, because of the growth of algal bio-mass and associated zooplanktons, the nutrition base for aquatic fauna has been found to widen, thereby leading to increase in overall fish population in most of the reservoirs. Thus, no adverse effect on fish life on account of food chain is envisaged in case of Tehri reservoir, which is spread over an area of 42 sq. km. The reservoir operation schedule is based on irrigation requirement and power generation. Due to this, there shall be fluctuation of reservoir water level during the whole year, the minimum and maximum water levels being 740 m and 830 m respectively. Hydrophilous plants can not survive such fluctuations in water level. Hence, excessive weed

growth is not likely. Nevertheless, enough nutrition would be available for aquatic fauna in the form of small floating plants and other bio-mass.

CLARIFICATION ON THDC ON WATER QUALITY COMMENTS OF WADIA
INSTITUTE, DEHRADUN GIVEN IN MEETING OF EXPERT COMMITTEE
ON 11.7.1997.

1. PARAMETERS STUDIED:

The temperature and DO content of the water released from the reservoir are the most important water quality parameters for ascertaining the suitability of water for downstream uses. Before the creation of the reservoir, the water quality parameters are assessed through the modelling study as per the prevalent models available in the international arena. In a mathematical modelling study (such as the one referred above), the temperature and DO can be reliably studied as these parameters are the functions of thermodynamics and hydro-dynamics of the reservoir impoundment. The other parameters such as effect on presence of trace elements, phytoplanktons, bacterial counts etc. are governed by bio-chemical processes. In the available literature, such studies have been found to be carried out in case of reservoirs already impounded and are under operation.

Shri Ram Institute for Industrial Research has carried out detailed chemical analysis of Bhagirathi river water at Tehri. The test results for a number of water samples have been appended in Environmental Action Plan submitted by THDC in November'1989. These results are given as

Annexure - I. It is clear from these results that Bhagirathi river water contains no permanent hardness and silica content is also nil. After the impoundment these are not likely to grow in the water released from reservoir.

2. EUTROPHICATION

The Tehri reservoir site is located at a small distance from the origin of river Bhagirathi. Moreover, there is no potential source of addition of trophic nutrients in the river water as mentioned in comments on NEERI, Nagpur under Para - 3. Thus, the change in temperature would not give rise to eutrophication as the basic ingredients are not present in the storage.

3. MEASUREMENT OF DO

The DO values in the water released from the reservoir are computed values and have been arrived at as a result of mathematical modelling of inflow DO accounting for the decay of organic matter and advection - convection effect prevailing in the reservoir. The inflow DO values used as input data in the modelling study have been obtained from Central Water Commission. The CWC measures the DO in river water as per standard methods.

4. QUALITY OF DOWNSTREAM WATER

The water released from Tehri reservoir shall be mixed up with Alaknanda flow at Deoprayag and as a result of this intermixing of the flow, any variations due to impoundment shall get balanced, before being put to any extensive use.

RIVER WATER QUALITY DATA AT TEHRI DAM SITE

Chemical Parameters	Sample No.							
	1	2	3	4	5	6	7	8
Electrical Conductivity (micromhos/cm)	550.0	460.0	500.0	600.0	650.0	470.0	470.0	-
pH	6.0	7.7	7.8	7.7	7.8	7.7	7.7	7.3
	ppm							
Total Dissolve Solids	350.0	304.0	325.0	395.0	285.0	308.0	108.0	100.0
Sulphate as SO_4	17.0	24.0	24.0	24.0	18.0	10.0	10.0	14.0
Temp. hardness	218.0	230.0	240.0	200.0	185.0	185.0	105.0	53.0
Permanent Hardness	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Bicarbonates	285.0	225.0	280.0	295.0	118.0	230.0	230.0	-
Carbonates	30.0	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Chloride	Nil	14.5	18.0	18.0	24.0	20.0	20.0	10.0
Iron	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Dissolved Si as SiO_2	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Calcium	56.0	50.0	56.0	48.0	50.0	55.0	55.0	2.0
Magnesium	20.0	24.0	28.0	26.0	14.0	20.0	20.0	38.0
Sodium	Nil	16.0	17.0	19.0	12.0	11.0	11.0	15.0
Aluminum	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil

TEHRI HYDRO DEVELOPMENT CORPORATION LIMITED

NO : THDC/C-522/199 SS

DT : 29th Oct 1991

Dr. D.B. Sharma
Additional Director
Botanical Survey of India,
P-8, Brabourne Road,
CALCUTTA-700053.

Sub : Action Plans for the conservation of Flora likely to be affected due Tehri Hydro Power Complex.

Sir,

Tehri Hydro Development Corporation has now taken up the construction of Tehri Hydro Power Complex on the river Bhagirathi near Tehri Town in the State of UP. As you may be aware that this Power Complex comprises of two reservoirs, Tehri & Koteshwar submerging areas of 5200 ha, 255 ha respectively. The environmental clearance was granted by the Ministry of Environment & Forest (GOI) for construction of Tehri HPC. The various environmental action plans are to be submitted to MOEF and after approval these are to be implemented. The conservation of Flora & Fauna is one of the issues.

The earlier surveys conducted by the ZSI & BSI has identified large number of plant & animal species. Inadvertently the earlier studies were not supplemented by the precise locations on the map of these species. The MOEF has desired that the mapping may be done about the species distribution in and around the submergence area. When the locations of these species are identified then the task of conservation, of rare and endangered species become more precise. It would be essential to identify such niches where these species would be grown. Although the earlier study by BSI identified 12 rare species of flora in the area likely to be submerged by Tehri Dam Reservoir it would be appreciated if the present study is extended to cover the areas likely to be submerged by the Koteshwar Dam reservoir also. The submergence area maps are also enclosed to facilitate the location of these reservoirs for the study.

In view of the above, you are requested to kindly to submit your proposal on conservation a study of the Flora going under submergence of the two reservoirs, Broadly the studies would involve the following :

contd...P/2

ज. वि. म. कार्यालय, 16 राजीव गांधी रोड, नई दिल्ली-110055 दूरभाष : 5752575, 5752489, 5720552 टेलीफैक्स : 001-68095 टेलीग्राम टी. ई. एन.
M. S. T. Office, 16 Rajiv Gandhi Road, New Delhi-110055 Telephone : 5752575, 5752489, 5720552 Telex : 001-68095 T. E. N. G. M. TEHRI CORP.

टी. ई. एन. कार्यालय, नई दिल्ली, (एच. टी. ई.) नवी दिल्ली, दिल्ली (दूरभाष)-246001

टिहरी हाइड्रो डेवलपमेंट कॉर्पोरेशन लिमिटेड
TEHRI HYDRO DEVELOPMENT CORPORATION LIMITED

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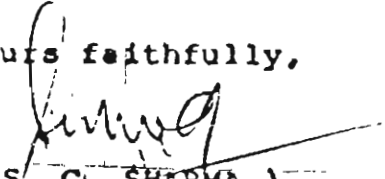
- 1) The detailed survey & investigations identifying location wise the flora coming under submergence of the two reservoirs and spelling out the rare species that needed protection.
- ii) The scheme & action plan for conservation of these rare species.
- iii) Providing supervision & guidance during implementation of the action plan.

It is requested that you may kindly submit your proposals indicating the cost estimates, time frame and inputs required from THDC for carrying out the above proposals.

I hope to receive your response within a fortnight or so.

Thanking you,

Yours faithfully,


(S. C. SHARMA)
DY. GENERAL MANAGER (C)

261

.टेलीफोन :

Telephone. 242-3881/4922

भारत सरकार

भारतीय वनस्पति सर्वेक्षण विभाग
कार्यालय

संख्या

No. BSI-30/1/96-Tech.

सेवा में

To

Sri D.P.S. Lamba.
Secretary,
Expert Committee on Rehabilitation
&
Environmental Aspects,
Tehri Hydro-electric Project,
New Delhi.

Sir,

With reference to your Fax letter No. THDC/EC/DP/97-3060 dt. 21.5.97, I am sending herewith the necessary comments on Rehabilitation and Environmental Aspects of Tehri Hydroelectric Project.

This is for your kind perusal and necessary action.

This issues with the approval of Additional Director,
Botanical Survey of India.

Encl: AS mentioned.

Yours faithfully,
Jayanti Bhattacharjee
(J. Bhattacharjee)
Scientist 'SD'

COMMENTS ON THE STAFF REPORT OF THE EXPERT COMMITTEE ON
REHABILITATION AND ENVIRONMENTAL ASPECTS OF TEHRI
HYDROELECTRIC PROJECT.

Botanical exploration in the Tehri Distt. date back in 1882. In this Century also, workers like Kanjilal, (1901), Dudgeon & Kenoyer (1925), Wilson(1928), Gupta(1956, 1957, 1962), Dey, Uniyal & Shanker (1968), Ouyal & Uniyal(1966), carried out surveys in the Tehri Garhwal. From Botanical Survey of India A.K.Goel visited Tehri Distt. between 1977-1981 and collected 1500 specimens including the area to be submerged by the dam. Thus three tours by the Botanical Survey of India party between 1992 -93 were enough to complete the studies. In fact the very first sentence of the summary deals with the vegetation around Tehri. The committee has quoted Bhattacharyya & Goel, 1992 wherein references mentioned above have been provided. Thus the observation "that the study was carried out on the basis of only three short visits" is not tenable.

As far as the methodology of collection of plants is concerned, It is emphasised that different ecogradients of the study site were surveyed to make the sampling as far as representative as possible within time limit given for the study. The specimens collected by A.K. Goel, B.P.Uniyal & Surendra Singh are all available at the herbarium of the Botanical Survey of India Dehra Dun (BSD).

Rare or endangered plants are categories of plants that face threat due to various reasons. No doubt, loss of habitat is one of the reasons, but equally important is the over exploitation of such species. For example *Gloriosa superba*(cited by the committee) is an important medicinal plant that has become rare due to its over-exploitation. Such species can be preserved through conservation measures as recommended in the report of the Botanical Survey of India.

As concerns the addition of "more than 125 species" it applies only to the earlier report by Bhattacharyya & Goel (1982). It is further clarified that all these 125 additions are mostly shrubby and tree species hence could not find place in Bhattacharyya & Goel's report which dealt with only herbaceous taxa. Besides, these may be found in other work as mentioned earlier. The committee further observes "over 70 species listed in this report were actually rare in this region." Here it may be clarified that all these species are found in the neighbouring regions most of them widespread. Even species considered rare by Bhattacharyya & Goel were taken into consideration and have been included in a separate chapter.

The committee also cites *Perbena officinalis* and *Artemisia* sp. as the insect repellent and medicinal respectively. True, but how many people use them as raw? Needless to say that both these species are widespread. Moreover, with the rehabilitation of the consumers, the question of usage of such plants by them may not arise.

The wild relative of pea *Lathyrus lacvigatus* is widespread and not confined to Tehri only. Therefore, its disappearance from the area does not bear much importance.



सर्व पर्यावरणीय पहलू में पर्यावरण संरक्षण
EXPERT COMMITTEE ON REHABILITATION & ENVIRONMENTAL ASPECTS
टिहरी हाइड्रो-विद्युत परियोजना
TEHRI HYDRO-ELECTRIC PROJECT

D.P.S. LAMBA
 SECRETARY

No. JHDC/DP/EC/97

Dt. 13.06.1997

To

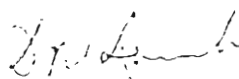
All Members
 Expert Committee

Dear Sir(s),

As desired by the Committee, Director, Botanical Survey of India was requested to forward their comments on the portion of the draft report prepared by Prof. Shekhar Singh on 'Flora & Fauna'. The comments as received from the Office of Director, Botanical Survey of India, Calcutta are being forwarded for your(s) kind information.

Thanking you,

Yours faithfully,


 D.P.S. Lamba
 Secretary

Copy to :

Chief Environmental Officer
 JHDC, Expert Committee
 JHDC, Jhansi
 Jhansi
 Jhansi-206001

टिहरी हाइड्रो डेवलपमेंट कॉर्पोरेशन लिमिटेड TEHRI HYDRO DEVELOPMENT CORPORATION LIMITED

NO : THDC/C-502/22254

DT : 29th Oct' 1991

Dr. M.S. Jai Rajpuri
Director,
Zoological Survey of India,
M-Block, New Alipore,
CALCUTTA-700053.

Sub : Conservation of Fauna likely to be effected
due to Tehri Hydro Power Complex.

Sir,

Tehri Hydro Development Corporation has now taken up the construction of Tehri Hydro Power Complex on the river Bhagirathi near Tehri Town in the State of UP. As you may be aware that this Power Complex comprises of two reservoirs, Tehri & Koteshwar submerging areas of 5200 ha, 255 ha respectively. The environmental clearance was granted by the Ministry of Environment & Forest (GOI) for construction of Tehri HPC. The various environmental action plans are to be submitted to MOEF and after approval these are to be implemented. The conservation of Flora & Fauna is one of the issues.

Earlier ZSI has reported a number of animal species terrestrial and aquatic to be affected by the reservoir. Inadvertently the earlier studies were not supplemented by the precise locations on the map of these species. Now locations would have to be identified along with their habitat so that a meaningful conservation action plan could be formulated. The study should identify the impact of reservoir on the habitat fragmentation and migration pattern of rare & endangered animal species frequenting the area. As noticed in the Kalagarh Dam reservoir, the rapid growth of different species of fish. This may also be brought out in the study for Tehri Dam & Koteshwar Dam reservoirs.

In view of the above, you are requested to kindly submit your proposals on investigation & study of Fauna going under submergence of the two reservoirs. Broadly the studies would involve the following :

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contd....P/2

टिहरी हाइड्रो डेवलपमेंट कॉर्पोरेशन लिमिटेड
TEHRI HYDRO DEVELOPMENT CORPORATION LIMITED

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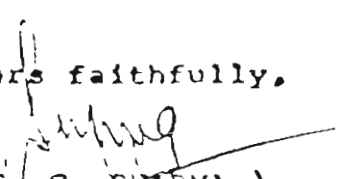
- i) The detailed survey & investigation identifying location wise the fauna coming under submergence of the two reservoirs and spelling out the rare species that needed protection.
- ii) The scheme & action plan for conservation of these rare species.
- iii) Providing supervision & guidance during implementation of the action plan.

It is requested that you may kindly submit your proposals indicating the cost estimates, time frame and inputs required from THDC for carrying out the above proposals.

I hope to receive your response within a fortnight or so.

Thanking you,

Yours faithfully,


(S. C. SHARMA)
DY. GENERAL MANAGER-(C)

o/r

ANNEXURE III.3 (ii)



भारत सरकार
GOVERNMENT OF INDIA

पर्यावरण एवं वन मंत्रालय
Ministry of Environment & Forests

Dr. J. R. B. Alfred,
Director,
Camp: Dehra Dun.

REGISTERED

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भारतीय प्राणि सर्वेक्षण

उत्तर क्षेत्रीय वे.सं.

२१८, कौलाग्रह रोड, देहरादून (उ.प्र.)

ZOOLOGICAL SURVEY OF INDIA

Northern Regional Station

218, Kaulagarh Road, Dehra Dun (U.P.)

Pin 248195

D.O. No. D/ZSI/ 352

Dated 10.3.1997.

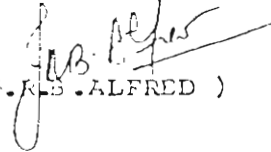
Dear Shri Shekhar Singh,

This is in connection with the Tehri Project in which you had discussion with me over the telephone as well as with Dr. Arun Kumar, my Joint Director from NRS, Dehra Dun. I must point out to you that the report submitted earlier in this connection by the ZSI was only preliminary in nature and as such can not be used as a basis for determining the final impact of the project. The project report had to be prepared at that time within a period of only six months and this had to be done along with the general activities of the NRS utilising the some manpower of scientists.

The assessment of the impact on the population in the valley needs to be more comprehensive with special reference to fish and mammals. To my mind detailed report is called upon as any comprehensive impact assessment would also involve the impact assessment of all ecosystem and just not individual species. Therefore, I suggest that the final report should be a coordinated effort and hence the Wildlife Institute of India, Dehra Dun may be approached to submit a comprehensive impact assessment report and ZSI and BSI will help in the identification of the organisms and plants collected by Wildlife Institute of India.

With kind regards.

Yours Sincerely,


(J. R. B. ALFRED)

Shri Shekhar Singh,
Member,
Tehri Project Expert Committee,
Indian Institute of Public Administration,
Indraprastha Estate, Ring Road,
NEW DELHI-110 002.

Director
Zoological Survey of India
New Delhi

Ref: Environmental Impact Assessment Study,
Faunal Analysis, Zoological Survey of India (199)

The Scientists of Zoological Survey of India surveyed for six months (1992) the proposed Tehri Dam area to study the faunal diversity. As far as the methodology of sampling of animals is concerned, it is emphasized that various habitats (both within and above submergence level) were extensively surveyed (approx. 80 localities) so as to make the sampling of the representative fauna, as far as possible. Since the area was also studied faunistically earlier by Zoological Survey of India and the information thus available was incorporated in the present studies.

During the present surveys extensive mapping of both aquatic and terrestrial fauna, within the proposed area of study and the limited altitudinal variations, physiographic and climatic conditions was done.

The major animal groups which might have been directly or indirectly effected due to the submergence of the proposed reservoir were also studied and as per the mandate, the rare and endangered species in accordance with the Indian Wildlife (Protection) Act, 1972 have been highlighted.

The possible impact on the populations of various faunal components have been included in the present report, wherever possible, though the main thrust has been on the rare and endangered species.

During the surveys 10 spp. of fishes were recorded (though a no. of species reported earlier from the area either by ZSI or others could not be recorded). Of these for outitors - the Yellow finned Mahaseer along with the Snow trout are the major migratory species and ascent upstream for breeding. The proposal for 'Construction of Fish Ladder' was mooted by ZSI, the induced breeding studies by various scientists on Mahaseer are regularly being conducted in various parts of the country, including Garhwal. The suggestion was primarily given by ZSI scientists to highlight the obstruction by the proposed dam on the migratory route of the Mahaseer and Trout, with the suggestion that alternative measures for their conservation and rehabilitation must be initiated by TREC authorities.

The detailed recommendations via a via the possible impact of the proposed reservoir on the fauna of the area have been given in the report under reference.

FINAL COMMENTS MAY BE FAXED TO SRI D.P.S. TAMRA, SECRETARY, Expert Committee on Rehabilitation and Environmental aspects, Tehri Hydro-electric Project by 15.7.1997 on Fax No. 011-577 0632, 15 Floor, Vikram Tower 16, Rajinder Palace, New Delhi 110 006

Sd/- ARUN KUMAR
NRS, Z.S.I.

Forwarded
JUS
11/7/97

(DR. S. R. S. ALIRED.)
DIRECTOR,
Zoological Survey of India.

Director
Zoological Survey of India
New Delhi

ANNEX III. 1/15/07
URGENT

FAX: (0135) 625217

भारत सरकार
जल संसाधन मंत्रालय
श्रम शक्ति भवन, नई दिल्ली
GOVERNMENT OF INDIA
MINISTRY OF WATER RESOURCES
SHRAM SHAKTI BHAVAN, NEW DELHI
C.G.O. Complex, 107th Post

A-17W, DR. V.C. THAKUR
DIRECTOR, W.H.
CHRA DUN.

संख्या/No. 9/6/94-ER/487

दिनांक/Date 1/15/07

To

The Director,
River Data Directorate,
Central Water Commission,
West Block No. I, Wing No. 4,
2nd Floor, RK Puram,
NEW DELHI-66

Sub: Supply of Hydrological Data.

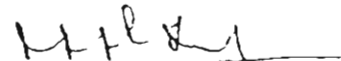
Sir,

This office has received letter (copy enclosed) from prof. Hanumantha Rao, Chairperson, Expert Committee on Rehabilitation and Environmental Aspects, Tehri Hydro-Electric Project regarding supply of discharge and sediment load data and snow melt and run off data of all stations in Bhagirathi and Bhilangana catchment to Wadia Institute of Himalayan Geology (WIHG) who are entrusted to carry out scientific evaluation of the availability of water in the Bhagirathi river including water quality and rate of sedimentation. Wadia Institute of Himalayan Geology is an Autonomous Institute of Deptt. of Science and Technology, Govt. of India.

In this connection, I am directed to convey the permission for release of Ten daily/Monthly average discharge and sediment data of all the CWC sites on Bhagirathi and Bhilangana basin for the available period to Wadia Institute of Himalayan Geology. The necessary data may be given to Wadia Institute of Himalayan Geology or his authorized representative after obtaining normal security stipulation.

Encls: As above

Yours faithfully,



(M.M.N. SAXENA)

Dy. Commissioner (R)

270

टैलेक्स

Telex : 31-66568-IJR

फैक्स

Fax : Shram Shakti Bhawan. 3710253

C. G. O. Complex 4354313

Krishi Bhawan 3362256

Lok Nayak Bhawan 4612000

ग्राम : जल संसाधन

Gram : WATER RESOURCES

Copy to Prof. C. H. Hanumantha Rao, Chairperson, Expert Committee on Rehabilitation and Environmental Aspects, Tehri Hydro-Electric Project, 240-B, Jubilee Hill, Road No. 16, Hyderabad-500 035. for information.

Copy to Shri N.D. Jayal C/o Wadia Institute of Himalayan Geology, 33, General Mahadev Singh Road, Dehra Dun-248 001(UF) for information.

Spore copy

NOTE GIVEN TO G.M. (RISHIKESH) ON 7.7.1997 IN EXPERT COMMITTEE MEETING.

WATER DISCHARGE AND SEDIMENT LOAD DATA

Apprehension has been expressed about the discharge and sediment load of the Bhagirathi river on which the high rockfill dam is coming up at Tehri. Questions like availability of sufficient discharge for the Tehri reservoir to meet the water requirement for different purposes, possible time related decline in river flow, how reliable is the sediment delivery data, etc., loom large in the mind of the critics. This ultimately reflects upon the usefulness of the project in cost and benefit terms. To address these questions in some way the water discharge and sediment load data of the Bhagirathi river has been examined in some detail. The data cover a 23 year period from 1971 to 1994. The following observations are given.

1. Some inconsistencies have been observed in water discharge of the Bhagirathi river. For example, high discharge of nearly 300 cumecs at Uttarkashi in 1977-78 (Fig.1) is not consistent with the discharge some kilometres downstream at Tehri in the same year which is on a lower side of about 260 cumecs (Fig.2). If the year in reference is a flood event, which it is, then the downstream discharge should correspondingly be of a higher order. In 1979-80, a supposedly reverse trend in river discharge has occurred at Tehri (Fig.2), recording a maximum of nearly 460 cumecs. In essence this should be treated as a normal trend since downstream point could record a higher discharge. In the same year ⁽¹⁹⁷⁸⁻⁷⁹⁾ the discharge data of the Bhilangana at Tehri ⁽¹⁹⁷⁸⁻⁷⁹⁾ is also on a higher side of about 90 cumecs and could well mean an input from this subcatchment provided there was any storm event or unusually higher melting rate, etc.

When the trend of 1978-79 is compared, the Bhilangana shows a much higher figure than the Bhagirathi at Uttarkashi. Similarly trends seem to be at variance at

Devprayag as well showing a much lower discharge corresponding to the data at Tehri (Fig.4). The discharge should be much higher at Devprayag since another major tributary of the Ganga, the Alaknanda, joins the Bhagirathi at this point. It is not known whether the Devprayag data are for the Bhagirathi only, or, for the Ganga as a whole. If the data at Devprayag pertain to the Bhagirathi only then loss of water discharge needs to be explained i.e.; whether or not there are any major artificial outlets upstream of the confluence along the Bhagirathi up to Tehri. If there is no such loss of discharge, then the Devprayag data seem to be in gross error.

2. Like water discharge discrepancy is also noticed in the sediment load data as well. For example, the discharge of 1979- 80 at Tehri is not proportionately related with the sediment data for the same year which is on a lower side compared to the figure of 1982-83 where river discharge is relatively lower but with highest sediment delivery on the available 21 year data record (Fig.5). Same is the case with other years in one way or the other.

3. From the foregoing it is sufficiently clear that the water discharge and sediment data have not been properly recorded. The data resource does not give any indication of the bed load and the solute load either. The available data indicate only the suspended load carried by the Bhagirathi river. While checking the discharge and sediment load per litre vs total discharge, it has been found that the bed load has been considered as 20 % of the total suspended load which is again a thumb rule that has been exercised for years by the concerned authorities. This needs to be re-evaluated by carrying out some tracer studies on the bed load movement. It is also not known what methodology and the sampler have been used for recording water discharge and sediment data at Tehri. Also, whether UNESCO (1985) laid guidelines have been employed by the data recording authority, which among other things considers particle size of the sediment load of

the river as one of the key factors for calculation of sediment delivery from its drainage basin.

4. For a project of the size of Tehri, only one recording station is not enough. Water stage and sediment recording stations should have been employed at every major confluence point of the Bhagirathi river and the Bhilangana river along which the Tehri reservoir is to have its two arms. Intensive network of water discharge and sediment delivery data would give a confident handle on sediment and water budget calculations. Sediment load in particular would be analysed in terms of residence time and distribution within the catchment especially the impounded area. There are no data on water losses due to canals and aqueducts from the intake point near Dharasu (end point of submergence line) up to the dam site, and also up to the Bhagirathi-Alaknanda confluence to consider this for water discharge discrepancies at Tehri and Devprayag.

5. Above all, no rainfall data are available for the Tehri catchment, which is key to verifying the pattern of hydrograph derived at Uttarkashi, Tehri and even Devprayag. Ever since the controversies surfaced about the Tehri Dam Project, minimal of minimum, ~~the establishing~~ network of weather stations (rainfall) and water discharge and sediment measuring stations ~~could have been established~~ to give some confidence of water budget and sediment load estimates after a period of 21 years or so. This is really a callous approach to such a mega-project.

6. On the face of these serious limitations it is difficult to work out the rate of siltation of the Tehri reservoir and thumb rules and comparisons with other reservoirs do not seem tenable in an era where scientific knowledge and technology are at their best.

7. The available data (1971-1994) shows no significant change in discharges over the years except discharge of the Bhagirathi river at Uttarkashi with slight

declining trend (Fig.1). However, detailed investigations and more data (rainfall, etc.) are required to ascertain the possible causes.

8. It is not known how much water has been projected for power generation? Whether or not the discharges are available for the projected power generation throughout the year? In this context it must be noted that minimum actual discharges during the lean period (December to April) are in the range of 20 to 135 cumecs (or in the range of 631 Mm³ to 4257 Mm³ annually). Whereas, annual water requirement of Tehri Dam for various purposes excluding power generation is 2615 Mm³. This would, require careful and judicious regulation of reservoir water during the lean period. This is the time when water requirement for power generation, irrigation and domestic consumption increases considerably.

What needs to be done:

1. An extensive network of water stages and sediment recording stations needs to be established at the mouth of every perennial stream confluencing with the Bhagirathi and the Bhilangana rivers. Water stages may also be established at the intake points of major aqueducts or canals in the Tehri catchment. In broader terms, every surface flow needs to be monitored to allow meaningful calculations of water budget which includes seepage losses as well. Data recording of water discharge and sediment delivery should be carried out on regular basis even after the supposed commissioning of the Project to permit periodic estimates of reservoir sedimentation and detection of declining water trend, if any. The greatest advantage, among other things, in establishing the extensive network of water stages and sediment recording stations would be to develop an understanding about the erosion pattern of the various subcatchments of the Bhagirathi, so that remedial measures can be adopted to arrest the excessive erosion, in the identified subcatchments, vis-a-vis, sedimentation of the reservoir.

2. Care is to be observed with respect to methodology as laid down in the UNESCO (1985) manual on the estimation and monitoring of reservoir sedimentation. Sampling techniques and methodology must be sharpened and applied uniformly at all the water stages and sediment recording stations. Sampling in particular should be done with high precision as this is vital to sediment load calculations.

3. It is high time that tracer studies are conducted on bed load movement to derive confident values for sediment delivery estimation. Often this is taken as some vague percentage of suspended load which is misleading as illustrated by assumed rates of siltation of the various reservoirs having been exceeded several times by the actual (measured) rate of sedimentation.

4. It is absolutely essential that weather recording stations (particularly rainfall, snowfall) are also established at various nodal points in the Tehri catchment (including Devprayag). Such stations should preferably be automatic so that large data bases are developed with a high precision. Weather data is extremely significant for analysing relationship with the hydrographs and general response of ground attributes to the prevalent climatic behaviour. This is an intrinsic part of the methodology for monitoring the external energy system and should not be ignored at any cost.

*(Data source: Expert Committee on Rehabilitation
& Environmental Aspects of Tehri
Hydroelectric Project)*

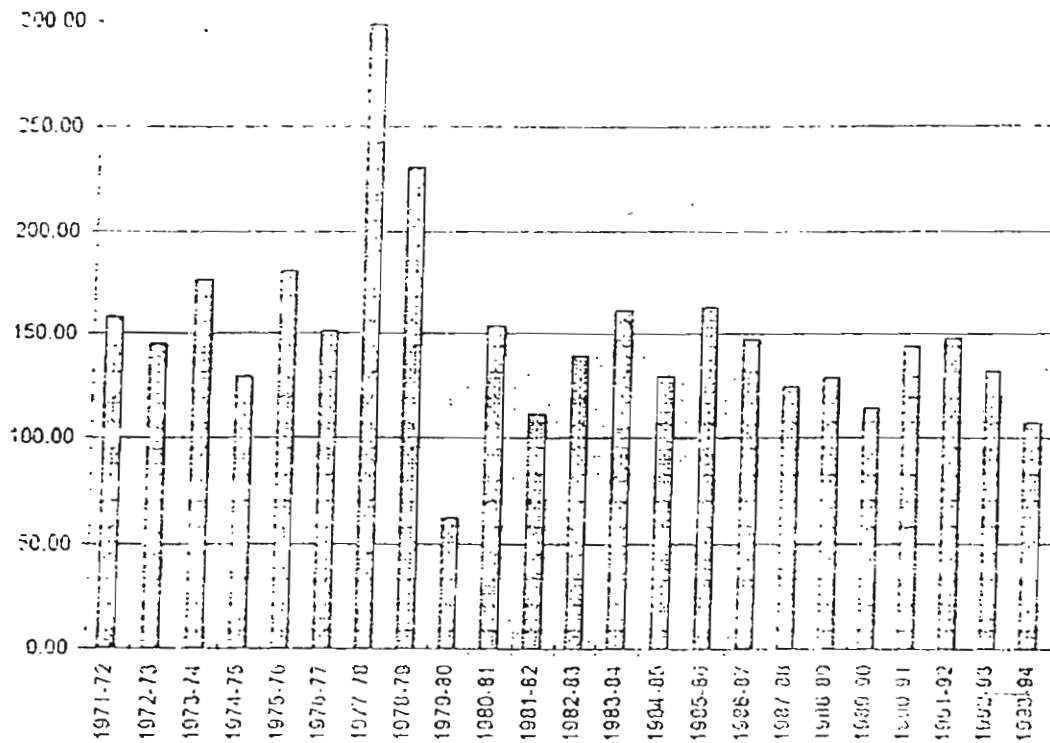


Fig 1. Average Monthly Discharge of Bhagirathi river at Uttarkashi (in cumec)

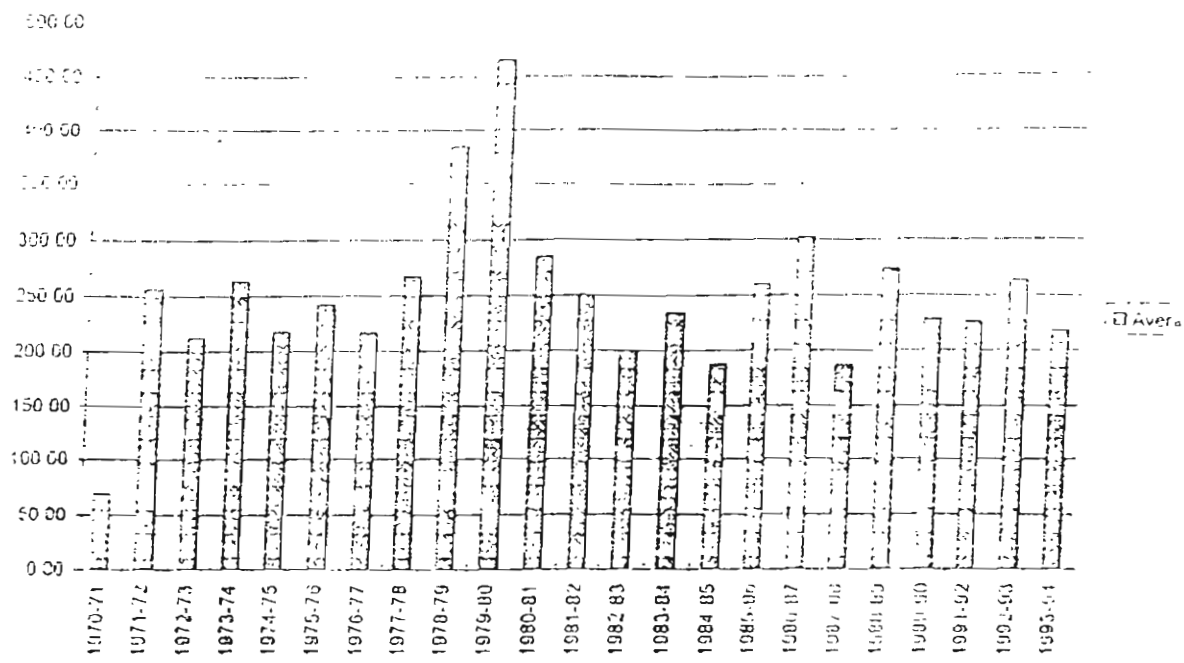


Fig. 2 Average Monthly discharge of Bhagirathi river at Tehri (in cumec)

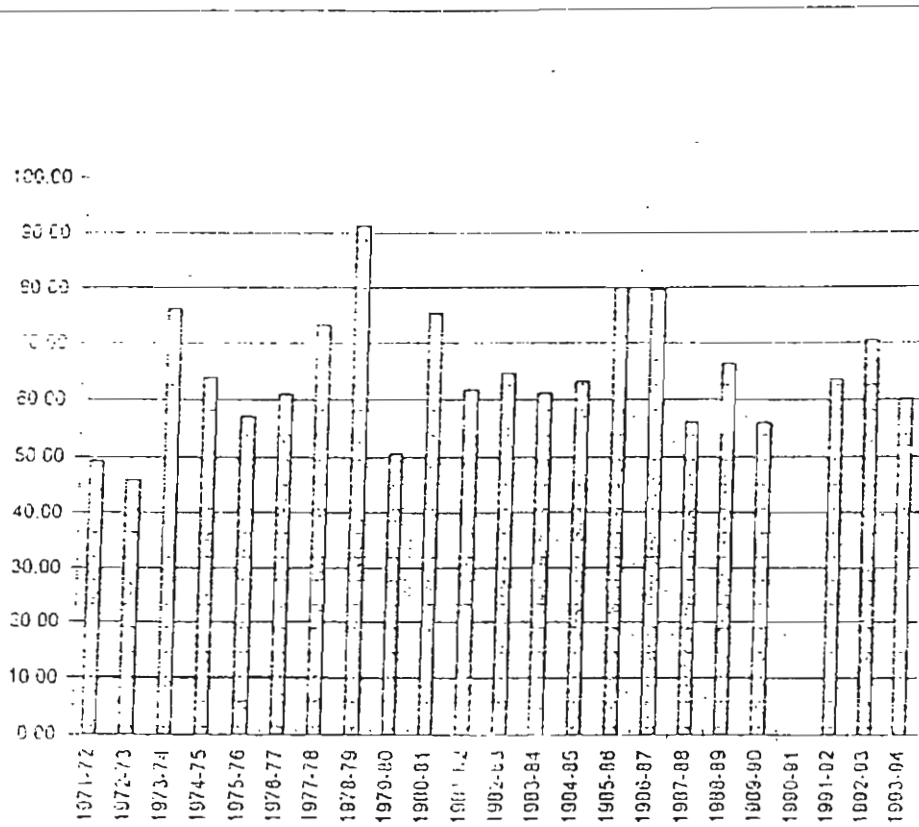


Fig. 3 Average Monthly Discharge of Bhilangana river at Tehri (in cumec)

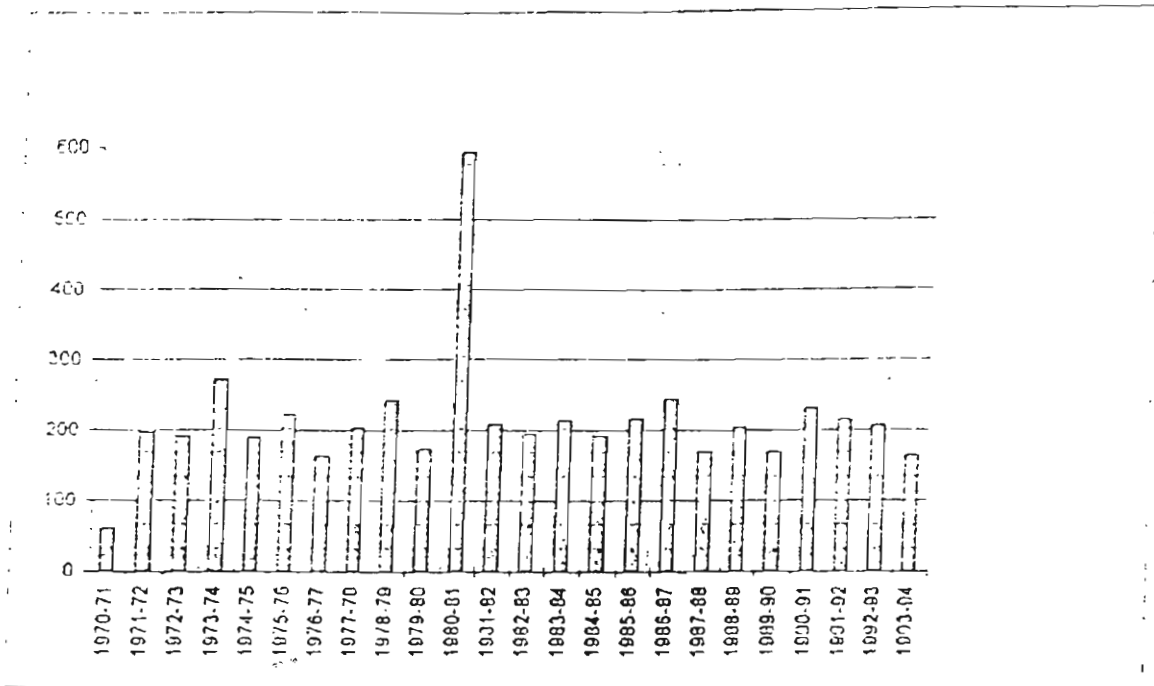


Fig 4 Average Monthly Discharge of Bhagirathi river at Deopryag (in cumec)

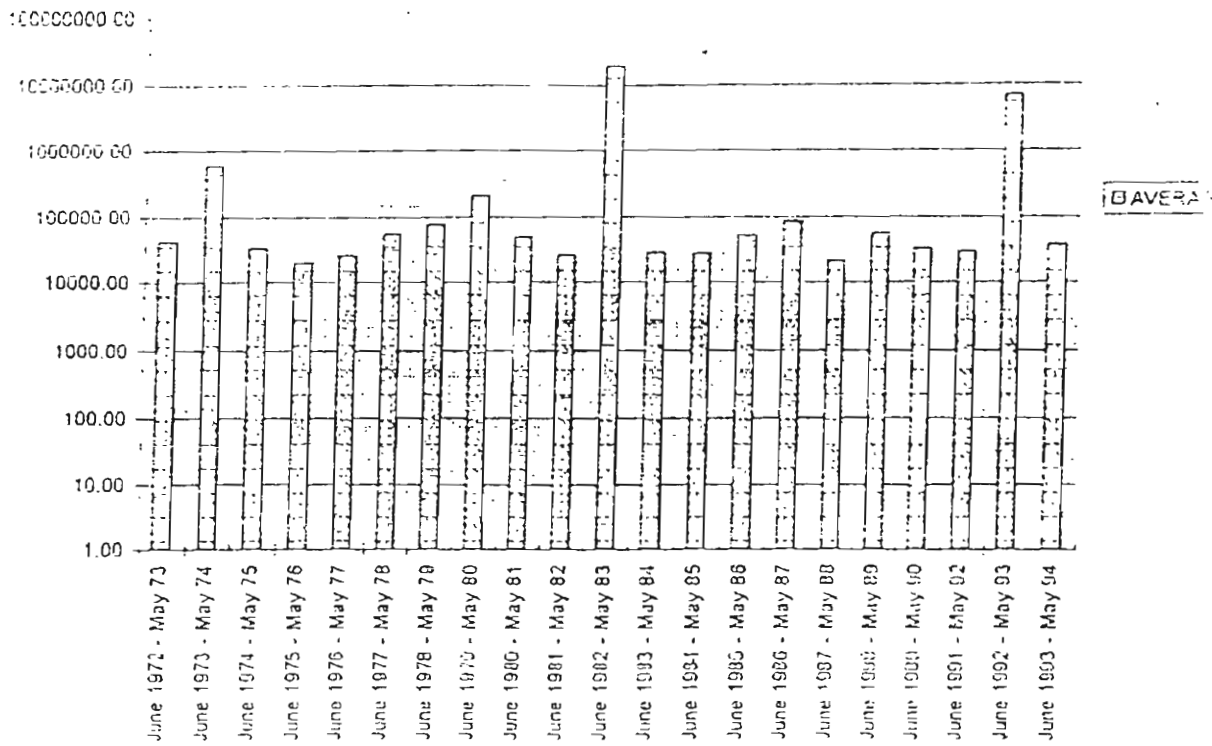


Fig 5 Average Monthly Sediment Discharge Data of the BHAGIRATHI river at TEHRI in T / DAY

THDC'S OBSERVATIONS ON THE REPORT OF WHIG ON WATER
DISCHARGE & SEDIMENT LOAD DATA

The Wadia Institute of Himalayan Geology, Dehradun (WHIG), has analysed the water discharge data of Bhagirathi river, which appears to have been obtained from the Central Water Commission and, have offered their comments. The THDC observations on the report given by WHIG to the Committee, are as under:

1. WHIG has taken into consideration the data base of 23 years i.e 1971 to 1994, for analysis and representing them in the form of various graphs attached in the reports with their comments. The form of basic data is not clear from their comments. On the other hand, THDC had used the water discharge data for 31 years, from 1963 to 1994, and only after thorough analysis the projected conclusions had been reached. The WHIG comments appear to be based on a hasty analysis and apparently the data was not correctly utilised.
2. The values of average monthly discharges as presented at para 3 of the comments of Wadia Institute do not tally with the data available in the records. It appears that the basic technical terms of average monthly discharge and average annual discharge have perhaps not been understood clearly and some figures, neither exactly the average monthly discharges (highest) nor average annual discharges corresponding to a particular year, have been indicated in the comments. For information, these terms as they are referred to are defined below and adequate care has to be taken to use these as per their meaning.

total of daily discharge in a month

Avg. monthly discharge = -----
Number of days

Total of daily discharges for the whole year

Avg. annual disch.= -----
Number of days

A comparison between the discharge data quoted in the report of WHIG and the data of highest average monthly discharge and average annual discharge for the selected years of 1977-78, 1978-79 and 1979-80, as per records, has been made in the table given below:

Name of the site	Year of Observation of data	Highest average monthly discharge as mentioned in the comments of WIHG in Cumecs.	Highest Average monthly discharge as per the records of CWC in Cumecs	Average Annual discharge as per records of CWC in Cms
Uttarkashi	1977-78	300	439.43	161.16
	1978-79	230	806.12	231.64
	1979-80	60	666.07	218.78
Tehri (Bhagirathi)	1977-78	260	858.72	269.89
	1978-79	380	1220.68	383.73
	1979-80	460	1324.86	360.89
Tehri (Bhilangana)	1977-78	73	291.43	74.04
	1978-79	90	327.74	91.89
	1979-80	50	197.40	42.84

At para 3 of the WIHG comments it has been mentioned that the high discharge at Uttarkashi in 1977-78 is not consistent with the discharge of Tehri of the same year. Referring to the above table, it can be seen that average annual discharge at Uttarkashi during 1977-78 was 161.16 cumecs and at Tehri in the same year it was 269.89 cumecs. In fact, both the values of highest average monthly discharges and also the average annual discharges at the two sites are seen to be quite consistent with the flow of the river. As such, there is no inconsistency in these figures.

In another case cited at page 3 under para 1 of the WIHG comments, it has been stated that the discharge of 1978-79 of river Bhilangana (about 90 cumecs) at Tehri is on the higher side. As would be seen from the above table, the sites at Uttarkashi and Tehri (Bhagirathi) had also recorded relatively higher discharges in 1978-79 and therefore, the higher discharge at Bhilangana was consistent with data in the other river.

- Like the discharge data, the sediment data as mentioned in the report of Wadia Institute also does not tally with that collected by CWC. The comparison could be seen from the following table:

Name of the site	Year of Observation of data	Average Monthly sediment as mentioned in the comments of WIHG in Tons/Day	Average annual water discharge as per CWC in Cumecs	Average Annual sediment load as per the records of CWC Tons/Day
Tehri (Bhagirathi)	1979-80	100000	360.89	64346
	1982-83	1000000	200	30590

From the above table, it can be seen that, as per CWC, the average annual discharge in river Bhagirathi at Tehri during 1979-80 is 360.89 cumecs and the average annual sediment load is 64346 Tons/day. In the year 1982-83, the discharge at the same site is about 200 cumecs and the sediment load is 30590 Tons/day. It is seen that during 1979-80 the discharge and sediment both are more than those of the year 1982-83. Therefore, there is no discrepancy in the sediment data. Again, while presenting the sediment data, the figures quoted by Wadia Institute do not tally either with the data as per CWC records of average monthly sediment load or average annual sediment load.

4. The water discharge data of the major rivers, including Bhagirathi and Bhilangana, are measured by the Central Water Commission, which is the premier specialised organisation in India for this purpose. For such measurements in various river basins all over the country, the CWC follows the set norms and standards for these observations. The CWC measurements also consider the particle size of sediment load. There would appear to be no ground for error in recording the data.
5. A network of rainfall and snowfall recording stations in Tehri region is also maintained by the Indian Meteorological Deptt. (IMD). The above data is available with IMD and the same has been used by the Tehri Project in various hydro-meteorological studies.
6. As pointed out earlier, the sediment studies of the Tehri reservoir are based on actually measured silt load in river Bhagirathi at Tehri. The above studies are based on the standard procedures/guidelines recommended by Central Board of Irrigation & Power (CBI&P) and the Bureau of Indian Standards. Thus, the assumption of WIHG that these studies are based on thumb rules, is totally unjustified.

7. Regarding the WIHG comments on water availability, it may be noted that Tehri dam is a storage project having a live storage of 2615 MCM. It is well known that more than 80% of the rainfall occurs in the monsoon period. Tehri reservoir will store the river flow during monsoon period, which will be utilised for power generation and irrigation requirements. The methodology of working out the water availability on the basis of minimum discharge during lean period (December to April) by WIHG is, therefore, misleading.

ANNEXURE - IV.1

Other Employment Schemes for the benefit of Project Affected Families are as follows :

- (1) Training for Tourists' Guides
- (2) Setting-up of Bio-Gas Plants
- (3) Introducing Improved Stoves
- (4) Establishment of Nurseries
- (5) Establishment of Fodder Plantation
- (6) Establishment of Fuel Wood Plantation
- (7) Sericulture
- (8) Bee Keeping
- (9) Poultry Farming
- (10) Mushroom Cultivation
- (11) Fisheries
- (12) Weaving Khadi
- (13) Envelope Making
- (14) Paper Making From Waste Material —
- (15) Tailoring
- (16) Carpet Weaving
- (17) Blanket Weaving
- (18) Pulses Processing
- (19) Chip Board Cottage Industry

ANNEXURE - IV.2

The following employment schemes are available in the districts of Hardwar and Dehradun for the benefit of Project Affected Families settled in re-settlement colonies of these districts..

- (I) Animal Husbandary
 - (a) Cross Breed Cows
 - (b) Murrah/Graded Murrah Buffaloes
 - (c) Poultry
 - (d) Goat Rearing
- (II) Bullock Carts
- (III) Bee Keeping
- (IV) Plantation and Horticulture
 - (a) Banana
 - (b) Parwal
 - (c) Kundru
 - (d) Fruit Crops
 - (e) Mushrooms
 - (f) Farming of Mango, Leechi, Papaya, Ginger & Seasonal Vegetables
- (V) Sericulture
- (VI) Farm Mechanisation
 - (a) Tractor
 - (b) Other Agricultural Employments
 - (c) Threshers
 - (d) Chaff

- (VII) Land Development
- (VIII) Bio-Gas
- (IX) Inland Fisheris
- (X) Cultivation of Rose for oil
- (XI) Lavender and it's cultivation
- (XII) Cultivation of Gerenium