(S.A.4)

REVIEW

LAND AND WATER

VOL. 1 NO. 1 OCT TO DEC 1988

WHY THESE MONSTER DAMS?

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A quarterly journal brought out by the Forum for People-Oriented Water Utilisation (POWU)
Edited collectively by the POWU committee
Address: c/o Kiran More, 91 Mistry Park, B. Desai Road, Bombay 400 036
Cost of printing: Rs 5 only

Printed at Ajmal Press, Byculla, Bombay
(For Private Circulation Only)

THE EDITORS

AGAINST DAMS

THE administration's unmitigated enchantment with major irrigation schemes despite their even officially acknowledged severe shortcomings epitomises a policy that has failed the masses but benefited its implementors and their minions.

The country has the dubious distinction of having the largest number of major dams in the world: 1578 had been built by 1985, at a cost of Rs 15,026 crore. The Planning Commission has admitted to the Public Accounts Committee: "No project in the irrigation, power or flood-control sectors has been completed within the time schedule from the date of approval and within the estimates." On October 6, the Commission accorded sanction to the Rs 13,500 crore Sardar Sarovar Project (SSP) in Gujarat's Bharuch district, the construction of which is already mired in controversy.

Though both the Commission and the national leadership have laid stress on the more manageable and beneficial minor river valley schemes and on the completion of the major projects which are as yet incomplete, the government -- through a special committee chaired by Prime Minister Rajiv Gandhi -- did not hesitate to clear the two largest dams of the Narmada Valley Project (NVP) namely, the SSP and the Narmada Sagar Project (NSP) in Madhya Pradesh's Khandwa district. These two dams alone will outstrip the cumulative cost of the 1578 large barrages built till now.

Whereas the cost per hectare of irrigation for major and medium schemes under the First Five Year Plan (1951-56) was Rs 1520, it has escalated to an incrediable Rs 26,873.40 under the current Seventh Plan (1985-90). in the same period, minor irrrigation expenses have risen only moderately from Rs 568.97 per hectare to Rs 3261.63, that is, by 5.73 times compared with 17.68 times under the major and medium schemes. Major schemes also account for major social and cultural upheavals through large scale displacement, irrevocable desecration of the environment, induced seismicity and the achievement of far fewer benefits than originally envisaged.

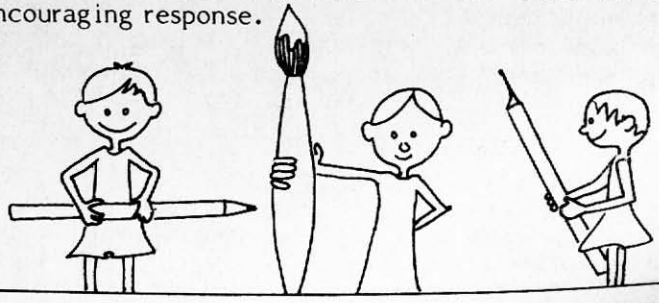
It was to counter this official penchant with such devastating major hydel irrigation projects and to ensure the adoption of a more rational approach that POWU was formed in April last year. Much water has flowed down the Narmada since then. The issue

of the Narmada dams has become immensely contentious and controversial and has spawned vigorous movements both for and against.

While the proponents have been unabashedly emotional, vindictive and offensive, the anti-NVP agitators also presented a rather diffused stance. While certain groups focussed on the aspect of rehabilitation and resettlement of the evacuees, tacitly (or perhaps inadvertently) accepting the dams as fait accompli , there were some elements advocating a mere scaling down of the height of the dam-wall to lessen the impact of submergence. While the supporters berated their opponents as anti-Gujarat radicals out to subvert national interests. Some of the antagonists were concerned with only the plight of the workers engaged at the damsite. Though each of these organisations had roles to play and a task to fulfil, the compaign had no cohesion in the absence of a unifying underlying thrust. POWU and other likeminded groups unshakingly held their ground in their opposition of the NVP and other massive irrigation schemes the Government was imposing on the unsuspecting masses.

Gradually it came to be realised that the Government did not have either the capability or the political will to fulfil the environmental, social and economic conditions the erection of the NVP required. Gradually the motley groups with their motley objectives gravitated towards the ultimate option: to oppose the scheme. The campaign is gaining momentum and the strategy has been formulated.

It is essentially to acquaint likeminded organisations and individuals about the question of water utilisation and land management and the campaign based on it, that POWU has undertaken publication of this quarterly newsletter. Hopefully, the issues discussed will be of interest and useful as information resource. We invite you to ensure the growth of this publication by contributing articles and news reports which you feel are relevant. Photographs, illustrations and graphics accompanying the contributions are welcome. We look forward to an encouraging response.



The following is the text of the resolutions adopted by the 200 odd participants of the Workshop on **'People - Forests, and Environment'** held at Dahanu on 12th June 1988. The Workshop was organised by POWU, Bombay, and Kashtakari Sangatna, Thane. Among the participants were activists from Maharashtra and Gujarat.

These resolutions deal with the vital issues relating to forests and people. The organisers hope they will be discussed as widely as possible, thereby paving the way for a national campaign on the issue.

Forests and People

A Report on the Dahanu Seminar

Preamble:

The Government of India has formulated a New Forest Policy to replace the National Forest Policy of 1952. The draft policy has been approved by the Central Cabinet and is likely to be introduced in Parliament soon. The New Forest Policy is the latest attempt by the Government to change the 1952 policy after the draconian New Forest Bill of 1980 had to be withdrawn due to opposition from tribal and other forest based communities as well as environmentalists.

The new policy makes a significant departure from its predecessors, most notably in its clear recognition that the primary function of our forests is the maintanance of ecological stability and environmental balance. But a number of specific recommendations in the policy do not reflect this new thrust. For example, the policy allows for the diversion of natural forests to non-forest use (like location of development projects) if sufficient 'compensatory afforestation' is undertaken. This flows from the misbelief that natural forests can be created by artificial means, which is an anti-ecological stand.

In addition, the policy does not view the preservation of forests by the population as part of an enlightened self-interest or as a participatory process. Instead, it relies on strengthening the policing role of the Forest Departme- and impinges on the rights of tribal and other forest based communities to forest produce.

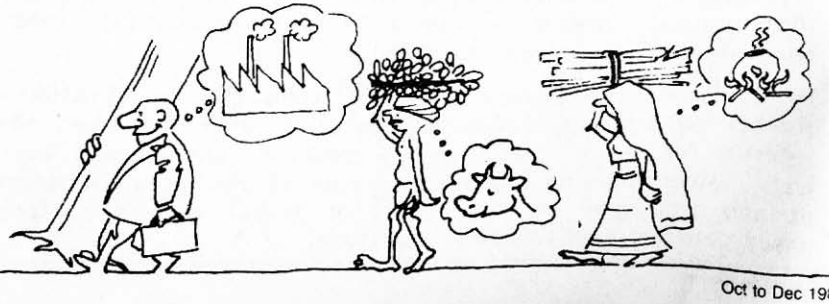
Thus, inspite of its change in the perception of the role of forests, the new policy is a continuation of the antipeople and anti-environmental orientation of the colonial policy.

In the pre-British era, forests belonged to the community, and were cared for primarily by the forest dwellers. The man forest relationship was basically need based. The forest was the security of the population, who fell back on the forests as their survival resource. This resource was available to all. According to British records, forest land was not privately owned but held by the community and managed through the elders. The concept of 'private property' did not exist.

The 'privatisation' of the forests as 'state property'was primarily with the intention to hold for oneself and one's profit. The nexus between man and forest became commercial and exploitative. In that context the state "owned" the forests exclusively against the interests of its citizens. The management of forests was left to paid employees (department) who have no interest in protecting, preserving or propogating the forest, other than their job and salary. Their commitment to the survival of the forests is secondary.

Forests are 'public property' held by the state in trust for the Indian people; and for posterity. The state as representing the interests of the whole population and not of some sectors has the duty to ensure that the legacy of the forests is protected and enhanced.

In such a situation it is really the tribal and forest dwellers who have an intrinsic interest in the survival of the forests, namely their own survival. It is this mutuality of interests that can be the major force towards the propagation and preservation of the forests. However, it is necessary that the deep-rooted alienation of these important groups which came as a result of policy, practice and legislation should be reversed. The state shall endeavour to assist/ encourage/enable the forest dwelling communities to excercise their rights and responsibilities in an effective participatory manner.



Resolutions:

In the light of the above, the following has been unanimously resolved:

1. It is absolutely essential to have a fundamental change in the orientation of the forest policy and look upon people as the rightful guardians of our forests, and the management of this common property resource should be by the people themselves through decentralised, community based institutions. We believe that the forests are a resource that needs to be managed not only to fulfil its ecological and environmental functions but the needs of human survival as well.

2. The first step in this direction is an immediate permanent moratorium on all felling of natural forests.

3. These natural forests should be handed over as the property of the forest dwelling communities. The forest dwelling communities will have the right to manage them and the usufruct of forest produce and dead timber.

4. All wastelands, degraded forest lands and forest lands without adequeate tree cover should be repopulated with tree cover akin to the local flora with a view to reproduce as faithfully as possible the extinct forests. These forests will primarily serve the needs of the local population.

5. These forests should be handed over to the landless and marginal formers below the poverty line for silviculture. While the landless and marginal formars would invest their labour to raise trees akin to the species available in the area, the state shall invest all the financial and technical resources to raise and maintain these manmade forests. The income from these lands would be a return on labour for the toiling classes. For the state, the preservation of environment is adequate return on investment.

6. Forest lands already converted into commercial plantations would remain with the management of the Forest Department from which the needs of industry and trade will have to be met, and no further geographical expansion will be allowed. Industry cannot be provided forest produce at subsidised rates. An adequate return on full investment by the state on afforestation programmes will have to be included in the costs to be borne by the industry and commerce.

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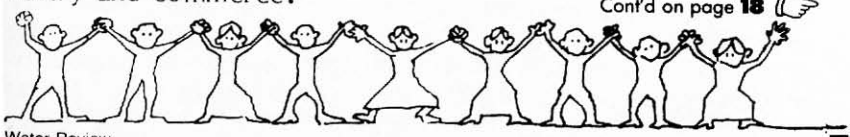


THE battlelines have finally been drawn on the issue of damming the Narmada River, with opposition parties of Gujarat threatening a stir against the environmentalists if the Government heeds the latter's demand for scrapping the scheme.

The Dam as Battlefront

Leader of the Opposition in the Gujarat Assembly, Chimanbhai Patel, who is also the State Janata Party president, threw down the gauntlet recently disclosing to reporters in Ahmedabad the combined Opposition's plan to launch an agitation if the Centre created obstacles in the implementation of the World Bank- aided Narmada Valley Project (NVP). The warning was issued soon after a massive Dharna was held in Bombay recently by various grassroots organisations, civil liberties groups, social activists, lawyers, journalists and conservationists to focus public attention on the glaring deficiencies and alarming consequences of this grandiose river valley project.

Iron ically, several Opposition politicians pledged their solidarity with the agitators, among them Chimanbhai Patel's own partyleaders like parliamentary Board Chairman Madhu Dandavate, forrmer MP Pramila Dandavate and Maharashtra legislator Mrinal Gore, Former CPI (M) legislator Ahilya Rangnekar, Peasants and Workers Party leader and leader of the Opposition in the State Assembly, Datta Patil, and other Janata Party legislators such as Haribhau Mahale and Thansingh Jhibhau also participated in the dhama. Addressing the 'Save Narmada' activists, Dandavate declared that his party would launch an agitation against the project if the Government failed to make public a comprehensive rehabilitation programme for the project-affected.

He charged that the Government was overriding the interests of the vulnerable sections of society in the name of 'development' and urged the full mobilisation of farmers, landless labourers, intellectuals and trade unionists in a concerted action against the administration's prevailing policies which were anti-people and favoured

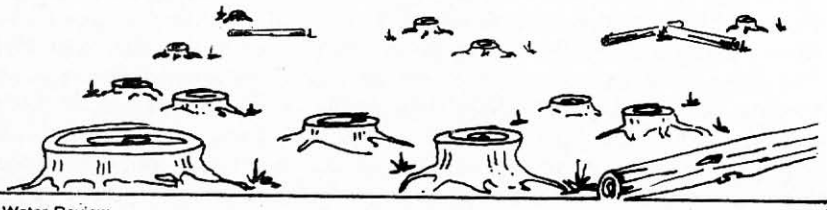
the affluent and the influential. Such an unequivocal stand on a major irrigation scheme by a political party in the country has as yet been unparalleled since these projects, touted as emblems of a modern prospering India, garner numerous votes. This is why the entire spectrum of parties in Gujarat, from the BJP to the Communists as also the Congress (I), are ranged against the conservationists.

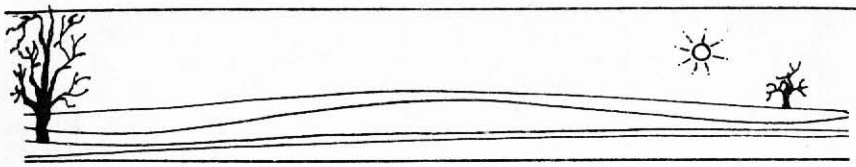
Chimanbhai Patel and his associates were also riled by the submission of a memorandum to Prime Minister Rajiv Gandhi by Magsaysay award-winning social activist Baba Amte, Dr. M.S. Swaminathan, president. International Union for the Conservation of Nature and Natural Resources (IUCN), Gujarat State Handicrafts Corporation chairperson Mrinalini Sarabhai, environmental economist Vijay Paranjpye and others on the day Patel issued his warning. Underscoring the catastrophic implications of the NVP, the memorandum affirmed there were meaningful avenues for alternate application of scarce national resources. Taking umbrage at the move, the Amarsinh Choudhary administration immediately asked Sarabhai to resign from her post.

The intransigent feuding on the acclaimed benefits and the disastrous fallout of this most expensive riverine scheme ever envisaged has helped raise vital questions. Not the least significant of them was the Government's perspective of development and its self-aggrandizing policy based on short-term political gains.

The cost of Gujarat's Sardar Sarovar Project (SSP) alone -- the largest of the projected 30 major Narmada dams -- has soared from Rs. 4887 crores in 1981-82 to Rs. 13,500 crore at present. The enormity of this sum can be gauged from the fact that the 1578 large dams built in the country till 1985 cost a cumulative Rs. 15,026 crore.

Initiating its campaign against the NVP in June last year, the Bombay-based Forum for People-Oriented Water Utilisation (POWU) held a national symposium attended by both those against and for the scheme, where eminent conservationists like Paranjpye, Anil Agarwal, Claude Alvares and K.R.Datye highlighted the scheme's devastating shortcomings.





When commissioned, the NVP will have uprooted a projected is lakh people, mostly destitute tribals, submerged 5.5 lakh hectares of farmlands and forests, generated but a fraction of the electric power contemplated owing to a feeble waterflow and excessive sedimentation and siltation, and irrigated far less acreage than planned. In their economic appraisal of the SSP in 1983, the Tata Economic Consultancy Services calculated a benefit-cost ratio of 1.84:1, computed on the basis of the project's then estimate of Rs 4887 crore. A ratio of 1.5:1 -- stipulating a return of Rs 1.50 for each rupee invested -- is the sine qua non of dam-construction in the country. Considering the current cost of a whopping Rs. 13,500 crore, the computable ratio plunges to a miserable 0.67:1. On this basis alone, the project should be summarily written off.

Countering these arguments, the proponents of the NVP berated the environmentalists as emotional do-gooders harbouring an altruistic and unrealistic 'back-to-nature' dream and derided them as impediments to progress. They soon stooped to jingoism, making the conservationists out to be motivated ogres fired with the singular determination of obstructing the progress of Gujarat state. Stressing his administration's unshakeable determination to proceed with the project, Choudhary castigated the 'so-called' environmentalists, maintaining it had become glamorous to speak in the name of ecology and environment.

The Gujarati press became a ready accomplice of the NVP's supporters. Journalistic ethics were thrown to the winds, with it all news about the anti-dam campaign blacked out and all articles arguing against the dam, unceremoniously spiked. In an unprecedented show of professional unscrupulousness, even the Gujarati newspapers published from outside Gujarat resorted to this subterfuge.

The unbridled Hoslilities reached such a pitch that a Bombay-based daily of a national group denounced distinguished social activitists like Sundarlal Bahuguna, Chandi Prasad Bhatt and Rajni Kothari (all of whom were to have attended POWU's seminar but eventually could not). The representative of the paper, who was invited to the event, apparently decided to boycott it and base his reckless charges on the programme schedule. In an attempt to appeal to their readership's emotions, the papers asked

why the environmentalist lobby did not oppose vast multi-purpose projects in States other than Gujarat. They chose to ignore the fact that Kerala's Silent Valley Project had to be abandoned by the Government in November 1983 following a protracted seven-year compaign. Conservationists have also opposed Uttar Pradesh's Tehri, Bihar's Koel Karo and Suvarnarekha, Madhya Pradesh's Bodghat, Bhopalpatnam and Narmada Sagar Project, Maharashtra's Inchampalli and Indira Sagar, Karnataka's Bedthi and Kerala's Pooyamkutty dams.

So ingrained was this distaste for those against the project that journalists from Gujarati newspapers have kept away from all events organised by them though they have been earnestly invited. As a consequence, the unsuspecting readers were only presented one side of the case.

Water Supply, power generation and irrigation potential are not the only issues at stake in the SSP. Some time ago, 76 dissident legislators of the ruling Congress (I) in Gujarat served a memorandum to the Prime Minister alleging widespread corruption end mismanagement in the Project's implementation. Referring to document ed reports of the State's Irrigation Department, they indicated the connivance of Choudhury in the affair and demanded a thorough inquiry into the vast embezzlement of funds and substandard construction. The Narmada Dharangrast Samiti of Dhule, which has been mobilising the communities in Maharashtra affected by the SSP (36 villages in the State will be affected), has alleged that resettlement schedules approved by the World Bank in its appraisal report and the principles enunciated in the Narmada Tribunal Awards have been flouted brazenly by the project authorities. And the Gujarat High Court ordered a three-man inquiry commission to investigate charges of intimidation and exploitation of workers engaged at the damsite.

The affronted tribals have resolved to steadfastly resist eviction from the catchment area, asserting that the administration neither had the will nor the capability to rehabilitate them. "We will rather drown than allow our way of life to be ravaged," they assert.

The standoff is not simply between the conservationists and the superdam's proponents: it is one between a judicious mode of development for benefiting the widest cross-section of society and a self-serving ideology that spreads inequality and corruption.

BY SAROSH BANA

Employment, Really?

Conditions of the Workers at the Sardar Sarovar Damsite

Independent India marches on the road to development and progress. One of the foremost examples of this 'progress' is the Narmada Valley project, a massive project involving the expenditure of 25,000 crores (estimated), consisting of 30 major dams, 135 medium dams and around 3000 minor weirs - the most expensive riverine scheme envisaged anywhere. The largest dam in this project is the Rs. 13,500 crore Sardar Sarovar Project.

But this development of the nation is not for the 'little man' - the peasant, the worker, the cowherd, the adivasi. It is the progress of the power hungry politicians and the blood sucking construction magnate, who are the only beneficiaries of Rajiv Gandhi's policies. The Sardar Sarovar Project will uproot 1.7 lakh inhabitants from 237 villages and will submerge 39,134 hectares of arable land.

Apologists of this dam counter the arguments of the environmentalists with the justification that the dam will provide employment

One of the justifications put forwardby the apologists of the dam is that it will provide employment. Around 5000 persons employed at the dam site (the figure varies seasonally from 2000 - 6000) is hardly adequate justification for the displacement of nearly 2 lakh inhabitants. Then again, is the measure of development to be the mere quantity of jobs generated? Is not the quality of the employment generated worthy of consideration?

The jobs generated at the Sardar Sarovar Project are, in the best traditions of the unorganised sector of Indian industry, exploitative and oppressive of the workers in the extreme. A lot of them are not even paid minimum wages, P.F. is restricted to a very small number. In fact, Shri D.G. Kakde Executive Director (Technical) of Jai Prakash Industries, when questioned about this, said that this was being done as it would be too much trouble for the poor workers to get their P.F. amounts back after they had ceased working. Overtime is paid to the workers at a single rate. The accomodation provided to workers, if at all, consists of tin shacks - eight feet by twelve feet - each housing between three to six workers. The drinking water storage tanks (at Continental Constructions) - one must remember that these dam sites are far away from civilisation - are at ground level and even dogs have been known to drink from them. Though electric lines run through the area, many workers still live in the dark.

One could go on and on. But it would not really be anything new to one who is conversant with the plight of unorganised sector workers anywhere in India. But what really sets the plight of the workers of the Sardar Sarovar dam site apart is the open state suppression of their right to organise.

How the Government Violates its Own Labour Laws

There are three main companies involved in the construction of the Sardar Sarovar dam and the connected canals. The first is Jai Prakash Industries (formerly Jai Prakash Associates) run by the patriarch Jai Prakash Gaur. The other two are the Mahalingam Shetty Construction Co. and the Continental Construction Co. The current struggle for unionisation is being fought by the workers of Jai Prakash Industries. A history of this struggle brings out clearly the unashamed collusion between the captains of industry on the one hand and the state apparatus in general and the police in particular, on the other.

Jai Prakash Industries has been granted the contract for the main dam canal and the underground power house. The family controlling this company was known to be close to Sanjay Gandhi. Upon landing the Rs. 320 crore contract, the company's advertising agency - Lintas India - issued a publicity announcement last August saying that completing the Sardar Sarovar Project within the stipulated period of 110 months from the time of getting the contract - April 24, 1987 - will be the firm's "contribution to the welfare of people of that region and to the nation building task". Truly, it must be this concern for the 'people' and the 'nation' (not to mention the Rs. 320 crores) that is spurring Jai Prakash Industries to such efforts in bleeding it's workers dry.

To understand exactly how the JPI workers are being bled dry, it is necessary to study the nature of the relationship set up between the workers and the Company. The Company gives three different kinds of status to it's workers. At the lowest rung are the casual workers. Theoretically they can be thrown out any day and are employed merely for that day. These workers are given almost no facilities. Almost all the local adivasis employed and the unskilled workers are maintained in this category Though the Industrial Employment (Standing Orders) Act prescribes certain limits to keeping a worker 'casual', workers here remain so for years at a stretch. These workers, by the very insecurity of their job, are not amenable to unionisation. The next, higher, category are the workers termed as 'work- charge'. This category is not even mentioned in the Model Standing Orders issued by the Government and is an invention of the JPI. The workers in this category are given the facilities of the permanent workers - like leave, bonus, etc.- but only as long as there is work. If there is no work for them, they are given no pay; not even half wages for being laid-off as required under the law. Most of these workers are skilled and semi-skilled - riveters, welders, drivers and the like. They have usually come from far away places like U.P., Bihar and Punjab to get themselves a job. They find themselves in an extremely frustrating and hopeless situation if they are suddenly told, somewhere in the middle of nowhere in Gujarat, that there will be no work for them for the next 20 days. They usually have neither the means to go home and return, nor the means to stay at their own cost.

In February, 1987, 50 workers of this category, among them 47 drivers, were asked to go on leave with the assurance that they would be recalled when their services were required. The workers demanded, however, that they be issued notices declaring they were on forced leave and part of their salaries for that period be reimbursed to them. Alternatively, the company should arrive at a final settlement and pay all their dues. The management, it was reported, rejected these terms and turned them out.

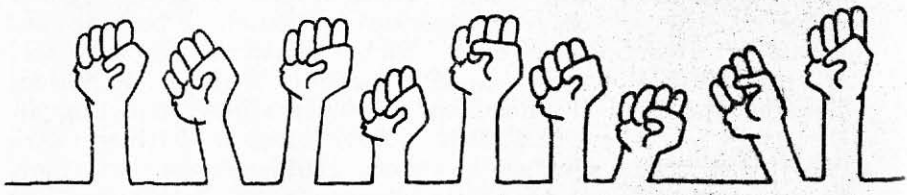
Later, 43 of them were said to have been coaxed back into service when they threatened to file cases demanding their complete overtime and other dues. Seven others, held their ground and went to court and the hearings of their cases were in progress. Some of them have claimed total compensations ranging from Rs. 70,000 to Rs. 1.7 lakh for the overtime and work they did and a victory for them would inspire a host of similar cases by other workers who have been wronged.

The best and highest status is that of permanent workers, but even they ae not impervious to management torture. The usual routine for troublemakers in this category is a 'transfer'. Ostensibly, they are transferred to another site where JPI has some construction under progress. However, this is only a cover-up for union - bashing and harassing 'trouble makers'. Such transfers are actually illegal. When Mohan Misra, IPS, General Manager; R.N.Rao, General Manager (Finance and Administration); K.L.Duggal, Personnel Manager and B.N. Jha, Liaison Officer were questioned about whether a worker could demand, of right, to be given work at another site when work at this site was over, they unanimously answered, 'No!. This shows clearly that the worker's employment is at that particular site. In spite of this, if the Company transfers persons when they find it convenient, then it is clearly a case of ' running with the hares and hunting with the hounds'. In fact, a transfer is not so innocuous as it might seem. Some sites it seems, are maintained much like concentration camps. A transfer to Shahidabad, for instance, the workers say, could very well mean grievous injury or death at the hands of the Company's goons.

Three workers, Anil Kumar Singh, Satnarain Dube and Rohini Prasad Upadhyay, who were preparing to mobilise their colleagues for the Bharat Bandh sponsored by the national opposition parties on March 15, 1988, were issued transfer orders that night, which they refused to accept, said Thakorebhai Shah, a veteran Seva Dal volunteer and General Secretary of the Vadodara Kamgar Union (VKU).

The union was formed six months ago, influenced by the legal aid centre at Rajpipla, 32 kms. away from the SSP's dam site at Kevadia, to organise the workforce and has subsequently been active in the area ever since. Shah pointed out that the transfer orders were illegal as the names of the three workmen were on a list of 'protected workers' (as provided for in the Industrial Disputes Act) which had been handed over to Baroda's Labour Commissioner by the VKU.

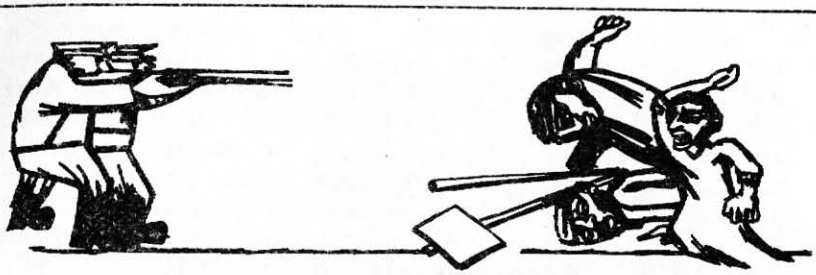
The three were then detained in the company's conference room in the presence of Rajpipla's Sub- Divisional Magistrate (SDM) R.J.Patel, Deputy Superintendent of Police (DSP) Gadvi, and Police Sub-Inspector (PSI) N.B.Jadeja of Kevadia, who were called by the Company officials as they anticipated 'disorder'. **During interrogation, the DSP was reported to have pointed his revolver at the three detenus, threatening to shoot if they did not sign their transfer orders.** These transfer orders are in SDM Patel's own handwriting. They were coerced into signing them, bundled into a van, driven to Baroda Railway Station and warned against returning to work, said Anil Kumar Singh. It was reported that the van was escorted part of the way upto Dabhoi by the vehicles of the PSI and SDM.



The Vadodara Kamgar Union, is in fact, the main union trying to organise the workers at the dam site. Though the response from the workers has been overwhelming, the response from the industrialists and the state has been horrifying.

The dam area had been declared a Protected Area, way back in 1969. This act is often used to bust union meetings as it was almost used to stop a rally of tribal oustees of the Narmada Project on January 30 this year. However, the intervention of some voluntary agencies at the last minute, saved the rally. Whenever the union calls a meeting however, the local police officials, suddenly materialise and ask the workers to disperse as permission under this act (Protected Areas) has been refused!

Another favourite section of the local police is No. 144 (assembly of 5 or more persons banned), and it is only the proximity of the tensil border that allows the union



to hold any meetings at all. Even these meetings are not without incidents. On April 3, the VKU had called a meeting across the border. There was heavy police presence along the route. Buses were stopped and persons going to the meeting were asked to disembark. Even the meeting was disrupted by some goons sent by Dinesh Tadvi, a Congress - I 'tribal leader'. The VKU officials and the POWU team which attended this meeting just narrowly escaped attack. The general suppression of the union is compounded by individual oppression. Last year, a worker and trade union activist, Shambu Tiwari, fell ill while on leave , and could return to work only after five months. In the meanwhile, he was sacked. When he pleaded for re-instatement, he was assured he would be taken on if he submitted his resignation. But when he did he was told that the resignation settled matters and he was not eligible for another job or monetary compensation. Backed by the VKU, Tiwari went to court. It was reported that Nageshwar and Dayashankar, his two brothers, who also worked at Kevadia, were persuaded by the management to have their brother withdraw the case. When they refused, they were also removed from service. They too, have filed a case in court.

In January this year, when Nageshwar entered the Kevadia area to meet with some workers, he was allegedly set upon by a company guard and brutally beaten, requiring hospitalisation. It was found that a case of molestation of a woman had been filed against him by the guard at the Kevadia police station. Nageshwar related that when he went to lodge a complaint at the police station, the staff on duty refused to register it and instead arrested him on the charge of attempted rape. Shah had to rush down from Baroda and obtain his release from bail.

A year ago, another union worker, Sugar Singh, whose services had been terminated, joined his former co-workers for a drink at an illicit liquor den at Kevadia. (Prohibition is in force in Gujarat). Shah alleged that another worker, Rajinder Singh, a union organiser who subsequently became a turncoat, also joined them and picked up a quarrel with Sugar Singh in which he assaulted the latter ruthlessly. Police once again refused to entertain the victim's complaint and instead registered the one filed against him on charges of drinking.

And the story could go on. The workers, though their jobs depend upon the dam, in a sense, have no basic contradiction with the local inhabitants, though the government is trying to create one. But both the workers and the locals have common enemies: the state and the huge construction companies. These enemies are so huge and so powerful that the only way for both the workers and the locals to survive is to help each other, cooperate with each other and link up with the other struggle. A meaningful dialogue in this direction must be initiated.

BY KALA RAO
ADV. SANJAY SINGHVI

Cont'd from page 7

7. Strip plantations along roads, railway, canals etc. should be basically mixed plantations to meet the needs of the local population. These should be handed over to the local landless to manage. The income from these plantations would be shared equally by the labourer and the state.

8. There should be a ban on import of timber from developing countries either for domestic consumption or for processing for re-export. While a ban on felling is to conserve our own forest resources, it is convenient to import timber from other developing countries and thereby be responsible for destruction of their environment.

9. As the present trend of "exploitation of natural resources" poses a grave threat to the present forests, no environmentally hazardous project should be sanctioned henceforth and those which have already been accorded official sanction will have to be re-examined against stringent critieria and scrapped if necessary.

(Resolutions adopted by the workshop on 'People-Forests, and Environment' held at Dahanu (Thane District, Maharashtra on 12th June, 1988. The Workshop was organised by POWU, Bombay and Kashtakari Sangatna, Thane.) ■

IRRIGATION BY WATERSHED DEVELOPMENT

The Case of Ralegan Siddhi

BY R. K. PATIL
K. R. DATEY
SUHAS PARANJAPE

In 1976, Anna Hazare, a retired army jawan, returned to his village, Ralegan Siddhi-in Ahmednagar district to settle down. his village was a picture of economic stagnation and the people were constantly haunted by the spectre of drought. Some people were even forced to content themselves by eating only 4 to 5 days a week. Because of lack of employment, the village had, become a centre for distribution of illict liquor and, consequently, drunkeness and other social evils such as gambling were rampant.

Unhappy with what he saw, Hazare was determined to reform and restructure his village so that it would become self-sufficient and free of vice. To this end he initiated various measures for the conservation of water resources, which would ensure adequate water supply for drinking and irrigation purposes at all times, despite fluctuation in rainfall.

Similarly, innovate methods of fulfilling the fuel needs of the villagers and methods of generating bio-fertilisers were evolved. The following is an account of the project undertaken by Anna Hazare in the last decade. The method of water-havesting undertaking in this chronically drought-prone area is more likely to help in the upland regions of Madhya Pradesh, rather than irrigation by the Narmada Sagar Dams, at a fraction of the cost.

OVERVIEW OF RALEGAN SIDDHI

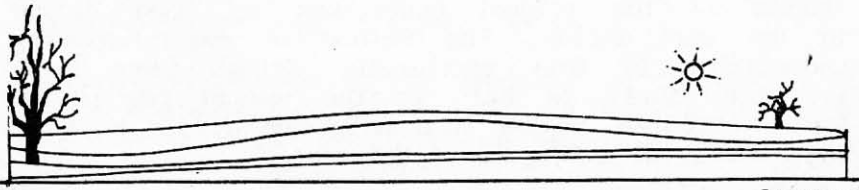
Ralegan Siddhi is a small village in Parner Taluka, Ahmednagar District, covering an area of 982 hectares (ha). It is at an altitude of about 750 metres and is surrounded by small hillocks on the north-eastern and southern sides. The terrain is undulating and slopy. The soil cover of 70 percent of the area is shallow, but the plains have a black soil cover which is suitable for rabi cultivation. The water table was 40 to 45 feet below ground level and water was available for drinking and irrigation purposes, provided the rainfall was normal.

PRONENESS TO DROUGHT

The village is situated in a drought prone zone. It falls in a rainshadow area with an erratic rainfall. The annual rainfall series for the last 86 years shows the maximum rainfall at 1072 mm in 1916 and the minimum rainfall at 203 mm in 1972.

If the rainfall series is arranged in descending order, an 80 per cent dependability of rainfall is evident at 430 mm (i.e. in 80 out of 100 years, the watershed would receive an annual rainfall of 430 mm). In 14 out of 100 years, the annual rainfall is less than 400 mm, in 24 per cent of the years it is between 401 to 500 mm, in 38 per cent of the years it is between 501 to 700 mm and in only 20 percent the years is it and above 700 mm. This distribution is an indication of the drought proneness of the area.

Further, much of the rainfall was wasted in the form of run-off. In 80 percent of the years it is estimated that of a run-off 7,74,000 cu.m. of water, only 16 percent was utilised for irrigation and drinking purposes. Valuable top-soil was carried off in the process, making the area poorer in terms of cultivable productivity.



DRINKING WATER

Though the village was never supplied water through government tankers, there was an acute scarcity of potable water, especially in the summer months. Only two wells had water perennialy. Consequently all the villagers were dependent on these two wells, so that some women were forced to walk a distance of 2 to 3 kms., daily to fetch water. This also led to over-crowding at the wells and constant squabbles for water.

PEOPLE

The population of 2,100 is distributed over 270 households. The majority of the people are Marathas, only 94 persons belong to the scheduled castes and tribes. There are 5 landless families and 13 artisan families. Most of the people are small landholders with holdings of between 1 to 3 ha. Only 12 farmers own over 6 ha.

Ordinarily, the average landholding at 2.6 ha should have been adequate to sustain its tillers, but because of recurrent drought the income generating capacity of the land was low. The yield for jowar was 5 qts/ha, and for bajri, 3-4 qts/ha, these being the staple crops of the area. Thus, only 30 percent of the total food grain requirement was being produced in the village.

As a result of this, many villagers had to migrate or seek employment under the Employment Guarantee Scheme (EGS). The less fortunate had to frequently go without food. The production and consumption of illicit liquor was high - a direct result of these wretched conditions.

ATTEMPTS TO COMBAT DROUGHT

The year 1972 was the worst in the living memory of the village folk as the rainfall constituted an ill-distributed total of 200 mm. Almost all the villagers were employed on relief work (metal breaking). This being the situation, the Tata Relief Committee built a community well in the village with the potential to irrigate 20 acres, depending on the recharge.

In 1975, the construction of a percolation tank was sanctioned under the EGS. Its capactiy was estimated at 11.4 mcft and its cost at Rs.4.8 lakhs. However, because of inadequate supervision and the bureaucratic nature of operations, the intended objectives were not achieved. it was observed that the tank could not store the accummulated water for any length of time, as the water seeped away through the bund because the impervious stratum in the hearting of the bund was not provided.

PROJECT ACTIVITIES

Anna Hazare came to Ralegan Siddhi in 1976 and promptly concerned himself with the social, educational and economic issues of the village. He vigorously campaigned against liquor consumption, which he felt was responsible for the plight of the village. He faced stiff resistance. However, his unselfish behaviour helped to strengthen his moral position in the village. He donated his entire service benefits (about Rs 20,000) to the village and appealed to the villagers to rebuild the village temple with the money he gave, contributing shramdan. He succeeded in resolving petty village conflict and persuaded the villagers to send their children to school. He took an active interest in rehabilitating the disadvantaged sections, particularly the scheduled castes.

At an early stage, he realised that no permanant social change could occur without perceptible economic benefits. He studied the current government rural development programs and came to the conclusion that schemes like the IRDP are inadequate to generate collective action for the benefit of the community, as such schemes emphasise benefits to individuals.

As water was the key to economic development, he studied the topography of the village and what could be done to conserve rain water.

WATER CONSERVATION MEASURES

Repair of the tank : Since the percolation tank was defective, the district authorities were approached for carrying out repairs. The tank could not store water beyond a month or two of its filling. It was ascertained that the impervious layer was not provided in the foundation trench and in the embankment above ground level.

This defecticiency was overcome by providing a cut-off trench and rectifying the impervious core. An outlet was provided for regulating releases and a series of nala bunds were provided on the down stream, which are diversion structures and function essentially as recharge works.

Ordinarily masonry check dams would have been necessary to restrict the submergence at the diversion structure. However, this difficulty was overcome due to the participation of the local people, and because the free overfall flank spillways in the diversion channels have been able to cope with the limited flood flows. The technology adopted is well-suited to the region and full use was made of the local labour. The necessary repairs were carried out by the district authorities owing to Hazare's persistence, backed by the local people. The estimated cost of repair is Rs.3.91 lakhs - almost equal to the original cost of the tank.

Watershed development : The next priority was soil conservation measures, like nala bunding, contour, bunding land shaping etc. This was done under the state government Comprehensive Wasteland Development Programme (COWDEP), introduced in 1980. 31 nala bunding sites were identified and an area of 605 ha was convered under nala and contour bunding. The storage capacity of these nala bunds is estimated at 282.12 cu.m. The work of land shaping/grading was completed in an area of 181 ha, against a potential area of 257 ha. At least 20 new wells were dug, of which 7 were community wells.

Consistent efforts to make water percolate into the soil at various stages and then to utilise it whenever required has increased the irrigated area from 40 ha to 460 ha. The cropped area has gone up from 630 ha to 871 ha. Besides, the water

table has come up from 45 ft. to 25 ft. While the works were under construction, Hazare and the village people through constant supervision saw that technical norms were adhered to by the department and contractors. This indirect form of village participation in the collective works executed by the state agencies has a beneficial effect on the quality of work.

Lift irrigation : The Kukadi Canal flows 3 km away from the village. It was decided to lift water for irrigation from this canal. The "Krishna Pani Puravata Society" was formed for installing the lift. The labour was provided by the beneficiaries. Hazare raised a loan from a bank and successfully completed the scheme, estimated to cost Rs 38 lakhs and benefitting an area of 300 ha and 170 farmers.

As result of all these measures, Ralegan Siddhi is today self-sufficient in food grains. the yield per hectare has gone up from 5 to 10 qts/ha for jowar and from 3-4 qts to 6 qts/ha for bajri. A grain bank run by the Tarun Mandal of the village exists, and charges an annual interest rate of 15 percent, to be paid in kind on grains borrowed. This was set up to cater to the needs of the economically backward sections of the village, who were otherwise forced to buy grains from markets out side the village at exorbitant rates. However the number of persons who require this facility has been low. This has now put the village in a position where it is able to sell its grains to markets outside the village.

EQUITABLE WATER DISTRIBUTION

In the context of Ralegan, this concept needs some elaboration. The landless have no right to water as of today. The equity concept as enunciated by V.B. Salunke in the Pani Panchayat Scheme in Purandhar taluka of Pune district is not followed here. Equity is ensured only in the irrigable command.

Individuals who can afford to, have dug individual wells. However, they have been persuaded not to take up the cultivation of water-intensive crops like sugarcane, so that wells below could be recharged by the nala bunding works.

DRINKING WATER

As part of the development programme, three borewells were constucted near the village (60 m depth) and piped water was supplied to the cluster of houses. Rotations and timings for different outlets have been fixed. No one has to walk more than 100-150 metres to fetch drinking water. Although the year 1987-88 was comparable with the year 1972-73 as the village received only 220 mm of rain, there was no problem of drinking water.

AFFORESTATION

A programme of afforestation has been taken up in the village in which the soil conservation office has also participated, by planting trees in the developed watersheds. Almost two lakh trees have been planted. It is worth noting that the survival rate of village plantations is as high as 90 percent, as compared to 50-60 percent on the government-managed ones. The afforestation has been done in government forest land, gayran area, area owned by harijans and along the field bunds of private lands. It is also proposed to plant trees on the bunds of the fields in the lift irrigation command.

FUEL

Previously, the villagers used firewood and cowdung cakes as fuel. But they have now realised the importance of afforetation and take care to guard newly-planted trees despite the absence of fencing. There is now a tendency towards relying more on bio-gas for fuel.

As a part of the project, about 30 gobar plants have been installed, of which two are large-size, having an installed capacity of 14 cu.m. each. These plants serve the school hostel inmates and four scheduled caste and economically disadvantaged families, who look after the plant. These plants are mainly fed hy human excreta. The remaining plants are near the residences of the villagers and are fed by cow dung and individual latrines. In addition, smokeless chulhas have been installed, because of which we estimate an annual saving of 67 tonnes of firewood. These innovative methods have contributed about 142 tonnes of coal replacement (c.r.) in terms

of energy, to the village fuel supply, which amounts to 32.5 percent of the village fuel needs.

A communal bio-gas plant with a capacity of 85 cu.m. is under construction at a cost of Rs.2.5 lakh. In addition, it is proposed to introduce solar cooking devices. Hazare is confident that over the next ten years, the entire fuel needs of the village will be met by non-conventional renewable energy resources. It may be noted that Ralegan has been chosen by the government as an "Urja Gram". It will thus be entitled to technical and financial assistance.

FERTILISERS AND MANURE

Prior to the project, the village did not use any commercial fertilisers and local manurial resources were used on the irrigated area of 70-80 acres. With the completion of the watershed development programme, the irrigated area has increased to 800 acres (only two seasons). The use of commercial fertilisers, even today, is marginal but there is a trend towards increased use of local manrial resources

With the installation of bio-gas plants, local manures are easily available. Manure from individual plants is used by the individual farmers, while manures from the communal plants is regularly auctioned. Reportedly, Rs.5,000 is realised annually, which is credited to the Tarun Mandal, which oversees the developmental efforts in the village.

Another innovative method has been evolved to augment the manurial resources of the village. Urinals for the school children have been designed, whereby the urine is collected in a small pit. A mound of soil is kept nearby and the children are instructed to spread a thin layer of soil on urination. Once the pit is filled, the debris is collected and stored in bags. Over a year, 200 bags of 50 kg each were collected. A chemical analysis of the matter showed that the alkalinity of the soil was reduced, while it was rich in potash, superphosphate and nitrogen. The collected material is to be filled in horticultural pits laid out in areas unfit for

regular crop raising. Hazare hopes that villagers, seeing the impact of this manure (locally known as Hirekhat) on the fruit trees, will start to recycle human urine in their own homes.

Another experiment involving school children is being conducted. Pits of 180 cu ft. have been dug near the two commercial bio-gas plants. The children, during their spare hours or as part of PT discipline are encouraged to collect wasted dried biomass from the fields and roadsides. A layer of this is spread, followed by a layer of earth, which in turn is covered with a layer of bio-gas slurry. This is repeated till the pit is filled. This compost is later removed and auctioned. This method ensures 35 kg of rich compost with an investment of just one kg of dung or its slurry. Having seen the benefits, villagers are now ready to go in for similarly designed compost pits.

Pit latrines are to be popularised for those who cannot install biomass plants. Experiments have shown that a family pit latrine can give Rs.25 worth of manure per month. Hazare is confident that over the next 5 years, the village would be able to recycle all human and animal waste, and attain self-sufficiency in manures and fertilisers.

LIVESTOCK IMPROVEMENT

According to Hazare, planning for reproduction of the animal population is required, just as there is planning for the human population: A small well-fed animal population results in increased production compared to an ill-fed large population Cross-breeding has also proved beneficial. There are now about 70 crossbred cattle. The milk yield of the crossbreed is in the range of 7 to 8 litres per day, compared to about 1 to 1.5 litres given by the local breed. The milk supply in the village has increased, and

An ambitious project to demonstrate the benefi of dairying on scientific lines has been starte A cowshed accomodating about 50 crossbred co is being built. The villagers, chosen mostly fr the disadvantaged class, will be given one anim each to look after. The dung would be collect at one point to feed a bio-gas plant with the capaci of 85 cu.m. and costing Rs 2.5 lakh. The gas wou benefit about 70 families. The underlying princip is that common facilities would be mantained collectivel while individuals would be responsible for the animal welfare.

Incidentally, all the animals are stall-fe Whenever they are taken out, the owners use mas to cover the mouths, so as to minimise the dama to the pastures and trees. Further, no stray anima are to be seen in the village.

TRAINING

As the achievements of the projects initiated Hazare in Ralegan have been publicised within a outside the state, young persons wrote to him, e pressing the desire to follow his example and constructive work in their villages or outside. Th sought his guidance. Consequently, Hazare decid to start a training programme for those who a genuinely interested. He has taken a four acre pl in Ralegan, and has drafted a rigorous two ye course with the help of Pune University with emphas on technical aspects of rural development and soci motivation. The first batch was to start from Jun 1988.

EVALUATION

The Ralegan experiment in rural upliftment is uniq in many respects. It is located in a resource-pc area and is, in a sense, a one-man show of a devot social worker; though economic upliftment was objective, it was strongly underpinned to mor values and the awakening of a social conscienc Unlike the IRDP, where the objective was to rai the living standards of the families below the pover line (BPL) dealing with them individually, the Raleg

experiment emphasises the village collectivity/community and what it could do for the BPLs. In doing this, no doubt, non-BPL families would benefit.

Thus nala training and bunding is necessary, but this work cannot be done in the hope that only BPL families will benefit. In fact, owners of land near the nalas would be the first potential beneficiaries. Further, Hazare emphasises that as an individual social worker, one has no authority to redistribute the land. Fortunately in Ralegan, there are no big landlords.

So it appears that the emphasis is not on a radical alteration of the socio-economic structure of the village, but to take steps to improve the living standards of all villagers with the help of schemes announced by the state government.

Another noteworthy feature of the programme is that all the developmental activities are carried out either through government funds or bank loans. Under the guidance of Hazare, grants and donations from Indian and foreign philanthropic agencies have been declined. He believes free grants and donations make the villagers idle, irresponsible and power-hungry He would accept such money only provided the objectives are clear and fit in with the total programme. Thus, the training programme, which cannot be undertaken by the villagers, has to be funded from outside.

The experience of the last ten years shows that he has been successful in attaining his key objectives. That there has been a distribution of benefits in facour of the poorer section is a fact. But this has not been accomplished by coercion. The moral leadership provided by Hazare commands respect among the villagers. Alchoholism is virtually absent. A system of collective marriages has been established, so that wasteful expenditure is averted. He has also been successful in settling local disputes locally, without any reference to the judicial courts. The decision-making process has been democratised, with about 10 percent of the villagers taking active part in the monthly meetings. Perhaps the success of the project can be attributed to the fact that the activities undertaken have been all-encompassing, ensuring all-round improvement of the villagers lives.

■

Items of Development

Sr. No.	Item of work	Sources of funds: Rs. in lakhs				Benefits		
		Govt.	Bank	Shramdan	Total	Area irrigated ha	Irrigated yield quintal ha	Unirrigated yield quintal ha
1.	Lift Irrigation on wells							
	a) Construction of 20 new wells	10.00	10.00		10.00			
	b) Sant Tulkaram Pani Puravatha Mandal electric motor+Pump+ Pipeline		1.70		1.70	30.0	5	
	c) Sant Yadavbaba Pani Puravatha Society		1.5		1.5	7.5	N.A.	N.A.
	d) Sant Dyneshawar Society		1.5		1.5	4.0	12	3
	e) Padmavati Pany Puravatha Society		2.0		2.0	125.0	N.A.	N.A.
2.	Krishna Lift Irrigation on Kukadi Canal	15.0	23.0		38.0	300.0	N.A.	N.A.
3.	Hotel Building	10.0		6.0	16.0			
4.	Veternary Hospital	1.0		0.0	1.0			
5.	Tree Plantation	3.55		5.0	8.55			
6.	Percolation Tank	8.75			8.75	) Due to which the twenty wells		
7.	Soil Conservation Work	14.45			14.45	) get water, which is used for) irrigation. The area has gone		
8.	Other allied activities like dairy poultry, gobar gas		8.30	8.30	8.30	) from 40 ha to 460 ha.		
		52.75	8.00	11.00	110.75			

Note : 1. For items 3 to 8 the benefits are mostly intangible.

Pre-Project Cropping Pattern

Kharif Season		Rabi Season	
Bajara (Local)	57 ha	Local Jawar	66 ha
Bajara (Improved variety)	4 ha	Jawar and Saf flower	350 ha
Hybrid Jawar	10 ha	Wheat	15 ha
Fodder	84 ha	Gram	8 ha
Paddy	3 ha		
Maize	2 ha		
Tur	20 ha		
Mung	2 ha		
Udid	5 ha		
Total	187 ha	Total	439 ha

Present Cropping Pattern

Kharif Season		Rabi Season	
Local Bajari	48 ha	Local Jawar	30 ha
Improved variety of Bajari & Tur	165 ha	Hybrid Jawar	398 ha
Habrid Jawar	2 ha	Saf flower	30 ha
Paddy	1 ha	Wheat	2 ha
Maize	8 ha	Sunflower & Saf flower	10 ha
Mung	100 ha	Gram	12 ha
Ground nut	11 ha		
Sunflower	5 ha		
Green manure	20 ha		
Fodder	17 ha		
	377 ha		428 ha

Livestock and Other assets

The livestock situation is as follows:

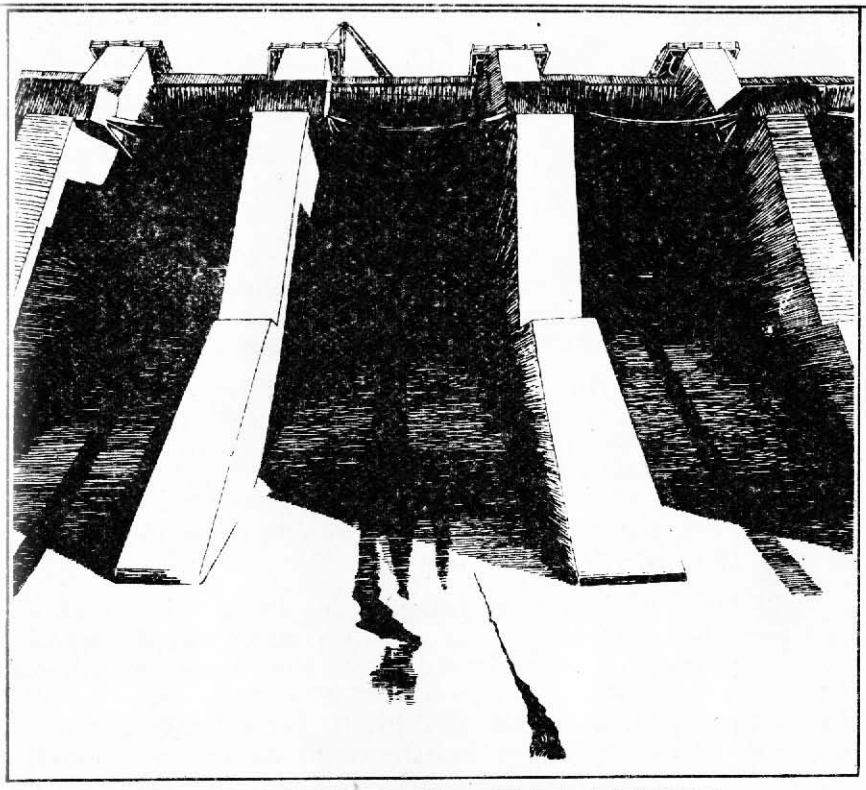
Particulars	1981	1987
No.of adult cattle	800	
Heifers	700	
of which working bullocks	265	297
Dairy cows of which 25 are crossbred	40	574
Dairy buffalo	25	
Goats & Sheep	160	
Poultry Birds	900	

(Though 1987 data are not available, it is reported that dairy animals are on the increase).

The situation in regard to other assets is as follows:

Particulars	1981	1987
Bullock carts	27	76
Tractors	1	2
Iron ploughs	67	30
Oil engines	17	12
Electric Motors	25	79
Gobar gas plants	25	28
Smokeless Chulas	--	130

This article is based on an investigation done by the **Centre for Applied Systems Analysis & Development (CASAD)** for a case study sponsored by the **Society for Promotion of Wastelands Development (SPWD).**



HAZARDS OF THE HIGHEST DAM

The Case against Tehri

BY SAROSH BANA

AN independent appraisal of the controversial Tehri dam coming up in the Gahrwal Himalayas has irrefutably underscored the utter nonviability of the project.

The inbuilt hazards of Tehri, at 260.5 m the fifth highest dam in the world and the highest in India, are parrticularly unsettling as revealed by the study. 'Evaluating the Tehri Dam':an extended cost benefit appraisal';.

Undertaken by a team of interdisciplinary researchers headed by Prof. Vijay Parranjpye, lecturer in economics at Pune's Ness Wadia College, the 139-page study has been sponsored by the Natural Heritage Cell of the Indian National Trust for Art and Cultural Heritage (INTACH) with financial support from the Friedrich Naumann Foundation of West Germany.

When initially envisaged in 1972, the rockfill hydro-electric project's cost was estimated to be Rs.200 crore. Today, its anticipated cost has escalated almost fifteenfold to Rs. 2930 crore. The recent hike in the final cost estimate from Rs. 1737 crore last December was due to the structural modifications suggested by Soviet technical experts who were assisting in the construction of this barrage at the confluence of the Bhagirathi and the Bhilangana, tributaries of the Ganga.

The report of the team of Soviets headed by chief engineer Aleksandr Fink, averred that the high seismicity of the Tehri region was not sufficiently considered in the Indian design of the dam. Its base-width of 1100 m was deemed inadequate and justified the apprehension of the local Garhwalis around Tehri about the likelihood of a calamitous cave-in if the U.P. government insisted on executing the present design. The Soviet seismologists recommended instead a foundation breadth of 1500 m to root the dam firmly to the geologically vulnerable terrain. Special crumble-proof securely fixable stones of a definite composition wee suggested for construction.

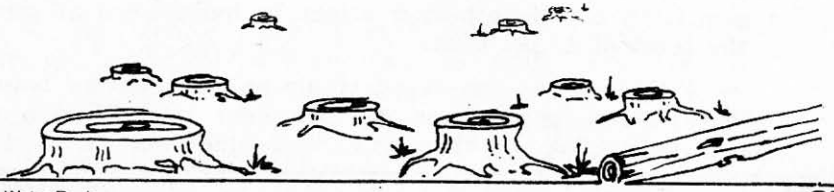
But Prof. Paranjpye's report noted that such an alteration in design would increase the claycore rockfill dam's cost by at least 25 per cent, from Rs 347.18 crore to Rs 433.98 crore, affecting the project's benefit: cost ratio drastically. The headrace canals would need to be re-excavated in this contingency, leading to a further loss of Rs 100 crore.

The benefit/cost ratio of the project would consequently be upset, the study's principal finding being that it would sink to as low as 0.56:1.

By declaring the existing dam design faulty, the Soviet experts have put the Tehri dam authorities in a quandry. In a case pending before the Supreme Court against the setting up of the dam, both the Union Government and the Government of Uttar Pradesh have been arguing in favour of the project on the basis of the design formulated by Indian engineers. They have simultaneously committed themselves to Soviet assistance which will not be forthcoming if the dam design remains unchanged. Tehri's fate, therefore, hangs in the balance. The Government does not wish to abandon the project as it stands today, partly because of the resources already committed -- the expenditure incurred on the project so far amounts to over Rs 220 crore -- and partly because it would mean admitting the falsehood of its earlier claims before the Supreme Court. "If it wants to go ahead, then the modifications necessary will be so great as to result in a new dam altogether," the report observes.

A particularly disquieting aspect is Tehri's proximity to the chinese border barely 100 km away. The communist neighbour has not exactly been our traditional well-wisher and in times of hostility, the dam might be an attractive target for Chinese bombers. During the last War, the Allied Forces and Germany breached each other's dams with impunity. Since then it has been rightly decided by most countries not to build dams too close to assailable frontiers.

According to Hyderabad's National Geophysical Research Institute director Vinod K. Gaur, the Tehri dam-site happens to lie in a region of high seismic potential. Besides, the creation of a large reservoir in a region which may already be critically stressed might induce rock failure and if a dislocation should occur near the dam, the 260 m thick sheet of water supported by it at an elevation of 550 m above mean sea level would turn into a veritable agent of widespread devastation downstream, Dr. Gaur warned.



In their avid determination to push the projec through, the authorities have been overestimating it benefits and downplaying its costs. They have gone t the extent of underestimating the number of villager to be displaced by the submergence by disregarding certai villages so that the expenditure on rehabilitation could b considerably reduced. They have thus chosen to be guide by 1981 census figures and reckoned the number of oustee as 46,000, 12,000 of them from the Tehri township alone while the INTACH study has projected the number a 85,764 belonging to Tehri town.

Any irrigation scheme of the magnitude of Tehri i designed to last a 100 years to justify the immense investme nts, but the study asserts that even in the best of circums tances, the economic or useful life of the dam will nc exceed 61.4 years going by the siltation data currentl available. In the case of Tehri, for instance, the numbe of years required for the incoming siltload level to reac the elevation 720 m would be the useful life of the dam i terms of power generation and 730 m elevation in term of irrigation. In other words, the life of the dam is dependen on the annual rate of sedimentation in the reservoir an the total dead storage capacity. Aware that the colossa financial investment required would be difficult to justif either in social or economic terms if the lifespan c the dam proved to be substantially less than a century the Tehri authorrities decided to overestimate the dea storage capacity to 0.75 million acre feet by raisin the dead storage level to 740 m without explaining ho that was physically possible. The INTACH report indicate that with the rate of siltation being 16.53 hectare metere per 100 sq km per annum, the dead storage capacity at 720 i would be only 0.5 MAF.

The study maintained that though the installe capacity was to be 1000 MW, the firm power calculate on a continuous basis with 90 per cent availability c water turned out to be a meagre 346 MW or 3029.18 millic units. And considering the price escalation of the projec the estimated per unit cost of electricity was likely t rise from 73 paise at the end of 1987 to over 100 paise Besides, the electricity finally reaching the consumer would be a paltry 2423.16 million units as the averag transmission and distribution losses in India were at preser at the level of 20 per cent.

Till 1983, the apportionment of costs betwee irrigation and power was 43 per cent and 57 per cer respectively. But in the detailed project report of 198

the ratio was suddenly changed to 20 and 80 per cent. This change naturally led to a substantial improvement in the benefit/cost ratio for irrigation. It, of course, affected the power sector adversely, but since a separate benefit/cost ratio for power was not calculated, the impact did not surface prominently.

Apart from emphasising the undesirability of the project, the INTACH report has forwarded an alternative of run-of-river scheme deemed viable and beneficial. The run-of- river scheme involves the generation of hydel electricity without impounding the river waters in a reservoir. The riverflow is diverted, and using the natural fall in height, turbines are activated for generating power. Since no reservoir is necessitated, no land gets submerged and the problems of displacement and induced tremors are thus obviated.

It is time the authorities took this appraisal seriously.

In Sorrow and Anger

BY GEETA SESHU

Amidst the plethora of material written and documented on the Narmada Valley Project (NVP), the report prepared by the Campaign Against Indira Sagar (CAISA) entitled **'In sorrow and anger - the victims speak'** - fulfils a sorely felt need in its record of the voices of the damned.

Based on interviews of those affected by the Indira Sagar dam project, conducted by four members of CAISA between December 8-23, 1987, the report brings home the stark and chilling realities of the project for the people affected and, through their fears and apprehensions, the effects of the project on the environment.

The Indira Sagar dam project is one of the major dams to be constructed on the Narmada river in Madhya Pradesh. Apart from submerging about 43,000 hectares of rich, natural forests and a corresponding amount of cultivable land, the dam will also displace more than 1,70,000 people, many of them tribals. What do the oustees feel about the dam project that will uproot their lives in the name of development?

The CAISA report goes beyond statistics in a worthy attempt to make the voices of those affected heard. They tell a poignant story of confusion and anger, dreams done to dust by the govt, surveys and plans interspersed with the lies and distortions trotted out by officials.

So we listen to Govind Prasad, a small farmer from Bijalpur, who has not enjoyed the benefits of hospitals, schools or even roads 'since they have declared that a dam is to be constructed here and have not built anything for us' or Gendalal, another small farmer from Abhawan, who was told to mind his own business when he questioned surveyors.

Another small farmer from Bijalpur, Ranvir Singh, speaks of the 'white sahibs' from the World Bank who don't understand the villagers and is not sure whether the villagers' statements against the dam are being accurately translated. The farmers interviewed talk of being promised watches and adequate compensation; other, more well-to-do farmers hope for benefits from the project, they voice their concern for the forests and wild-life, their anger at the fate of other villagers ousted for the construction of other dams, their fears about seismic activity.

The report, which begins with interviews on the environment, the dam project and its impact, concludes with voices of dissent. Unfortunately, the report would have been more complete if more interviews with women were recorded. As it is, only two interviews of women have been included. One can empathize with 55-year-old Jattanbai's resignation as she says, 'Government officials never asked me anything. Nobody asks the women.' Given the strong interaction of women with their environment and the disruption any such project is bound to bring into their lives, perhaps CAISA should make amends to see that their voices are not submerged even before they can be articulated.

* **In Sorrow and Anger - The Victims Speak**
Published by Campaign against Indira Sagar (CAISA), 198

THE ACTIVISTS' HANDBOOK

'The Narmada Valley Project- a critique' brought out by KALPAVRIKSH in April 1988 is a concise guide for activists, researchers and students seeking capsuled information about the project and all its implications. The 24 page booklet is priced at Rs 10 but comprises very lucidly written arrguments against the dam projects.

It traces the history of the project, details environmental effects from loss of forests and wildlife, health, seismicity, downstream ecosystems etc. More details on working out a cost-benefit analysis of the project along

with more concrete information on alternatives to dam projects would have been welcome.

The booklet also summarises the Narmada Action Plan chalked out by various groups concerned about the project in the appendices. All in all, a useful handbook.

* **The Narmada Valley Project - A Critique**
Published by KALPAVRIKSH, 1988
Price : Rs. 10

Damming the Narmada

BY NINA D.

"Damming the Narmada", subtitled "India's Greatest Planned Environmental Disaster", puts forward the very cogently argued viewpoint of groups and individuals opposed to the Narmada Valley Project, in particular to the two large dams on the main Narmada river.

The reader proceeds rrom a general introduction outlining the well-known and lesser known facts about the scale of environmental and human loss to the more specific question of how the benefit-cost ratio has been manipulated in respect of the Sardar Sarovar and Narmada Sagar projects.

One is surprised to read of the unprepared and unscientific way in which calculations, and estimates are arrived at (The total benefit from Narmada Sagar is placed at an incredible and improbable Rs 50,000 crores.)

A detailed analysis by the authors places the cost-benefit ratio at 1.11:1 as against the official Figure of 1.5:1.

In an earlier chapter titled the "The Human Tragedy", the authors bemoan the difference between official statements and the findings of NGOs at the field level. Most prospective oustee families are still in a state of uncertainty about their future.

In making out a case for why the entire Narmada project should be cancelled, they enumerate its many disastrous consequences. This description and critical analysis form Part I.

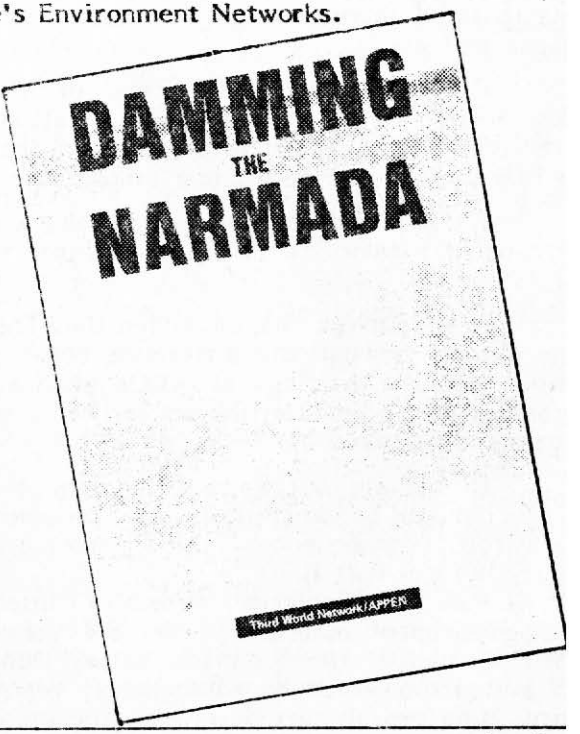
Part II recounts verbatim interviews with two top government officials - Mr. S.C.Varma in his capacity as chairman of the Narmada Valley Department Authority (a post from which he subsequently resigned) and Mr S.P. Pant, who explains exhaustively, the method of calculation

of benefit-cost ratio. The interviews throw some light on the motives of the government machinery. Mr. Varma emerges as a fairly optimistic person who admits the snags in the project - but thinks that human suffering can be alleviated if not avoided and destruction of flora and fauna can be minimised through proper planning and reafforestation measures. In all fairness, one must admit that he is committed to tribal rehabilitation as he says,"I will fight to the last for it."

Part III draws on official and non-official sources of information - a note prepared by the Department of Environment and Forests and a critique of the Sardar Sarovar project by the well-known activitst Medha Patkar, as well as an extract from a court petition filed by an oustee of the Sardar Sarovar project.

No stone has been left unturned. Any reader, whose perceptions question the value systems that spawn these kind of "progressive" projects which benefit only a few, will sympathise with and support the case argued by the writers.

DAMMING THE NARMADA
By Claude Alvares and Ramesh Billorey,
Third World Network and
Asia-Pacific People's Environment Networks.
Rs 40.



PEOPLE AGAINST DAMS

THE SUCCESSES MOUNT

BY PRIYA KURIAN

Rarely have we seen the democratic process at work so palpably and so effectively as in the growing mobilisation of people against large dams. Opposition to these multi-crore projects (there are 1,500 of them today in India) has been voiced before. By activists fighting for displaced people. And by environmentalists who see the tragedy of losing precious forest resources to projects whose very efficacy is questioned.

The once present hostility that existed between activists and environmentalists (the latter being accused of caring more for plants and animals rather than people) has been disappearing. Increasingly, they have realised that together with the support of affected people, they would be able to reverse government decisions on these crucial issues.

A recent instance of environmentalists and activists joining hands is in the struggle against the Sardar Sarovar and Narmada Sagar dams in Gujarat and Maharashtra respectively. The tribals and the activists working with them announced in August this year that they were changing their demand for adequate compensation to that of total opposition to the dams.

People's movements that sprang up in response to the threat that these large-scale projects posed have met with stonewalling from the government and the engineers who handle the schemes. Four examples of such struggles are highlighted below though they are certainly not the only ones,.

KOEL KARO: An example of what organised determination can do.

The site of the Koel Karo hydro-electric project in Bihar has been the scene of armed confrontations between the adivasis and the state government in a struggle that has lasted over 20 years.

The project involved the construction of two earthen dams - one across the South Koel river near Basia and the second on the North Karo river at Lohajimi near Ranchi, with reservoir capacities of 1,390 m.cu.m. and 541m.cu.m. respectively.

The two dams were proposed to be linked by trans-basin channels that would carry the water to power houses to generate electricity

The project would have meant the submergence of 49,000 acres of land, including 26,000 acres of cultivable land, over 3,000 acres of forest land and the displacement of thousands of tribals from 113 villages.

For the government, the dams would have meant (if their estimates were right in the first place) enough power to cover the needs of the eastern regional grid - a tempting enough prospect considering the chronic power shortage that the state suffers from.

Studies on the Koel Karo project state that the tribals, originally from the Konkan and of Dravidian origin, have been in the area almost from pre-historic times. Their fight against the dams is essentially their struggle to retain their identity, their culture and way of life and, sheer economic survival.

The Koel Karo project would have reduced the self-sufficient tribal communities to a landless impoverished lot and would have meant destruction of their customs and of the "sarnas" or the untouched sacred forests at the edge of the tribal village and the "sansandaris", the burial stones of their ancestors. This prospect led to their militant confrontation with the armed might of the state.

The tribals refused to move out of the proposed area of submergence and when the police tried to use force, they retailiated by destrroying roads and bridges built for the project.

Alternating between announcements of "not building a dam at gun-point" and reiterations of going ahead with the project at any cost, the Bihar government, as late as October, 1987, "re-started the project"after shelving it for four years. But latest reports confirm that the project has been abandoned.

BODHGHAT

Another project that has been stopped, or at leeast suspended for the time-being, is the Bodhghat dam to have been built on the Indrawati river in Madhya Pradesh.

The dam, the first of the series planned on the Indrawati, was aimed at producing hydro-electric power for industrial units in the state.

The 106 MW hydel project would have inundated about 30,000 hectares of rich forest land in the Bastar area, spelling doom for the last of the wild buffaloes and the destruction of an incredible 25 million trees.

Reports on the area state that the Bastar region is ecologically more sensitive than Silent Valley in Kerala, with a "unique mix of trees and grasses. It is a multi-crown forest area and some 2,600 sq km is the home of the hill madia tribals of Abujmarh".

The rich teak and sal forest that would have been submerged along with the alteration of the riverine ecology raised protests from environmentalists and activists from all over the country. Besides the sal, teak and bamboo, the forests contain some 70 varieties of medicinal plants and grasses.

But, as in other cases, the lobby supporting the project was powerful enough to over-ride the protests of the people - at least for a while.

Mr. H.K.Divekar, a Bombay-based activist who has long been associated with the struggle in the Bodhghat area, said that the Bastar Conservation Soviety was formed about 15 years ago to tackle the twin tasks of saving the forests and rousing the tribals to fight the dam for their own survival.

"Around 19 villages would have been affected but when we first started work there, most were not even aware what the implications of the dam would

be. The situation is very different now. Tribals ca connect the difficulty in getting firewood to the depletio of forest," he revealed.

They also realise that submerging of the forest would mean the end of their access to cash crops lik sal, teak and even mango, that today sustains their econom by sale to outside states, Mr Divekar pointed out.

Here again, the mobilised tribals refused to mov out of their villages and threatened a more militan struggle if the project was not stopped. According t Mr Divekar, it was essentially the protests of the environmentalists by ecological groups all over the world tha finally moved the World Bank to call for a revie of the project and the suspension of funds till then It is unlikely that the government will go ahead wit the project, according to all estimates, though no suc formal announcement has yet been made.

BEDTI

The Bedti hydro-electric project, also know as the Gangawali scheme, in Karnataka, was first propose in the 1920s, but it was only in 1969 that the Karnatak government initiated a project appraisal plan.

The 172-km-long Gangawali (known as Bedti i its uppoer reaches) rises in the hill ranges of Dharwa and changes from a fast-flowing river over the Wester Ghats to a sluggish course along the Karwar coast t meet the Arabian Sea.

There is little documentation available of th struggle of the people against the dam. Darryl D'Mont in his book "Temples or Tombs" reveals that work o the dam was stopped when environmentalists from Bangalor and rich cultivators known as "totgars" raised objectior to the scheme.

"These politically powerful totgars were abl to organise an impressive seminar in Sirsi on the implicatio of hydel projects in Uttara Kannada in January, 1981 where costs and benefits were meticulously analysed, said D'Monte.

This was followed by a memorandum to the chairma of the Karnataka Power Corporation, K.C.Reddy, signe among others by Zafar Futehally, Madhav Gadgil an Vijay Paranjpye, formerly of the Gokhale Institute c

Politics and Economics, Pune.

The cost-benefit analysis of the government had not taken into account the loss of the net annual yield from the 10,000 hectares of forest. Similarly, losses from the 2,500 hectares of agricultural land, fuel wood, grazing and rehabilitation would bring down the ratio to.86- far below the minimum of 1.5 prescribed by the Planning Commission.

In a devastating study done by Paranjpye entitled "Woes of Gangawali", the lopsided priorities and anomalies of the project are highlighted.

The study points out, for instance, that the power generated by the 210 MW project would have been fed into the regional grid at Hubli and then distributed through the central pool. In other words, the government had no intention of electrifying villages with the entire power being handed over to the urbanised and industrial sector.

Paranjpye reveals that the employment generated by the dam would extend for a period of seven to 10 years, to people who would then have to look for alternative employment. This would be further aggravated by the displacement of about 12,000 people - villagers and others who depend directly on the produce of agriculture or forests to be submerged.

The study also goes on to show in what D'Monte calls the "most incisive argument" against the project how the economy of the area would be disrupted. Though India's per capita income has risen over the years, 40 per cent of the people continue to stay below the poverty line. In fact, the per capita expenditure has actually fallen in the rural areas.

"Where have the benefits from growth gone? The answer is evident in the differences in growth of income in different sectors. The growth rate in the primary sector(agriculture, fishery, forestry etc) has been 3.6 per cent, whereas in the secondary (industrial) sector it has been 7.9 per cent and in the tertiary sector (services, transport etc) 5.3 per cent, at constant prices. It is thus obvious that all the benefits from planned investment in Karnataka have mainly gone to the public and private industries, mines and construction contractors. And whatever has gone to the agricultural sector has mainly accrued to the rich landlords, major livestock holders and horticulturists."

What are the alternatives? Paranjpye suggests micro-hydel plants with capacities ranging from 12 KW to 1,500 KW. A chain of small bunds or tanks would be necessary to store a portion of the monsoon flood water so that the units could function even during summer.

"The advantage of such a system would be that the power would be used for developing or utilising the local raw material resources and thereby generate employment," he points out.

Paranjpye also advocates thermal and geo-thermal plants to supplement the power generation.

POWU NEWS

BY KIRAN MORE
NINA D.

In 1986, a few of us had attended a seminar held in Chandrapur, Maharashtra, against the proposed Inchampalli-Bhopalpattinam dams in MP and Maharashtra. A nebulous realisation of the systematic socio-environmental destruction inherent in the construction of large dams began to crystallise into an awareness of a need to do something against the burgeoning 'developmental' scheme mooted by the government from time to time.

Large-scale projects generally wreaked more havoc-social-economic, cultural and environmental than engineered progress. A need was felt to redefine 'progress' and 'development'. But there was, at that time, no platform for us to voice our opinion from, to generate debate from.

Then in April 1987, Rajiv Gandhi sanctioned the Narmada Valley Development Project (NVDP), sweeping aside strong reservations voiced by the Department of Environment, that the dam is likely to prove environmentally disastrous.

This was the catalyst that brought us together; the Forum for People-Oriented Water Utilisation (POWU) was born on April 25, 1987.

The Government apparently believes that the bigger the drought or flood problem, the larger is the size of the project needed to combat it. We feel such schemes benefit a few, but harm a large, especially vulnerable cross-section of our society, by wreaking considerable destruction on our fragile eco-system.

POWU's primary objectives are ·

(a) To spread awareness against the socio-environmentally non-viable centralised, large-scale developmental model pursued by the government.

(b) To explore alternatives whose benefits are more equitably distributed.

(c) To generate alternative schemes that don't exceed the regenerative capacity of natural resources.

(d) To strengthen the efforts of like-minded people by supporting them, by helping them to co-ordinate among themselves.

Among the first activities of POWU was to organise a seminar on "Water Utilisation and the Narmada Valley Project". The seminar threw up many interesting questions. Speakers included environmentalists, journalists, social scientists and representatives from organisations like SETU, CSE, Kalpavriksha and activist groups like Chhatra Yuva Sangharsh Vahini and Mukti Sangharsh Chalval.

A statement brought out after the seminar on July 1st, 1987, condemned the decision of the government to go ahead with the building of the Sardar Sarovar Dam the largest in the Narmada Valley Project (NVP) in the light of its huge economic and human costs.

POWU has subsequently maintained contact with the various groups represented at the seminar.

In the course of the year, discussions were organised by POWU in colleges and among other voluntary groups to spread awareness among the students and the public about the "damning" effects of the planned NVP with special reference to the ongoing Sardar Sarovar Project (SSP).

In October 1987, POWU members attended a two-day seminar at Lonavla organized by the Tribal Conscientisation Society based in Pune. An alternative Forest Policy Bill was drawn up keeping in mind the welfare of the tribals and their needs. Organizations from many parts of India attended the seminar.

On January 30th, some members of POWU attended a tribal rally held at Kevadia Village in Gujarat near the Sardar Sarovar dam site. The rally was organised by Navnirman Ghati Samiti and Narmada Dhrangrast Samiti (NDS). Members of political parties, social workers, activists addressed the gathering, their main demand being "Land for Land" for the displaced tribals near the original site of their home. The memory of Gandhiji was invoked on the day of his matyrdom. Some 1500 tribals sat listening attentively to the speakers, some carrying placards bearing catchy slogans, or the name of their village-which was to be submerged by the waters of the SSP. A number of city-based organisations were also represented at the rally.

On 12th March, the National Working Group on Displacement - a group of NGO's met at Bombay to draw up a programme of demands to place before the government for speedy and all-round implementation of rehabilitation plans for the project-affected oustees. POWU members took part in the meeting. The final draft of demands when completed will be placed before the government for its acceptance.

In May this year, a team of journalists and some POWU members visited Sangli district where the Baliraja dam is being constructed on the Yerla River, a tributary of the Krishna. The weir is being built by the local people as against the usual model of large,centralised government-aided projects.

Another team from POWU revisited the SSP dam site to inquire into the working condition of the contract labourers working on the dam. Their subsequent report, which exposed the very inhuman conditions and cases of oppressive measures taken against the workers, led the Gujarat High Court to order the setting-up of an inquiry commission.

A number of interesting discussions and talks were held by POWU for its members this year (1988) to examine all aspects of the water issue.

A seminar on "Forests, People, & Environment" was held at Dahanu on 12th May 1988, jointly organised by the Kashtakari Sanghatna and POWU. A resolution passed at the end of the seminar condemed the government's recent decision to sanction the building of a 500 MW thermal power station at Dahanu.

On August 27, Medha Patkar of NDS spoke at a meeting in Bombay. In a hard-hitting speech, she accused the government of betraying the cause of the tribal oustees and only giving lip-service to fulfilling the demands of activist groups agitating for tribal compensation. The meeting was organised by POWU and INSEARCH.

This was followed up by a sit-in dharna in Bombay in front of the LIC building on September 2nd and 3rd. POWU and INSEARCH a student organisation were among the many that participated. Medha Patkar of the NDS who has steadfastly worked for the oustees' rights took a leading part. Political leaders like Mrinal Gore of the Janata Party also participated. Ironically, her party is spearheading the pro-dam faction in Gujarat.

In retrospect, we think we can say that POWU has many irons in the fire, but the NVP remains the main focus of our efforts. We are very much in the mainstream of a campaign which, with small beginnings, looks as if it will snowball into a much larger agitation.

MEMBERSHIP FORM

FORUM FOR PEOPLE ORIENTED WATER UTILISATION
92, MISTRY PARK, WARDEN ROAD, BOMBAY-400 036.
Tel.: 8225089

.....

I wish to become a member of POWU. I have paid my membership fees.

1. Name :

2. Address :

Tel.: Resi. Office

3. Occupation :

4. Area of interest :

5. Member ship fees :

Student (Rs. 20) Others (Rs.50)

Stop Press

Resettlement of Narmada project oustees still distant

mid-day 13/11/88

By a Staff Reporter

Russia has second thoughts on Tehri

16/11/88

The Times of India News Service

NEW DELHI, November 15.

THE Soviet Union is keen to scale down its aid if not pull out altogether, from the controversial Tehri Dam project.

It feels the 260.5 m rock-filled dam that is expected to generate 2,400 MW of power is not only economically unfeasible but technologically unsound.

The high level of seismicity in the area, nine points on the Richter scale, is not conducive for such a high dam, Soviet experts have said.

The project is likely to be reviewed at a high-level Indo-Soviet meeting to be held shortly. In 1986, when Mr Mikhail Gorbachov visited India an agreement was signed for an assistance of Rs 2,000 crores for the project.

The Russians feel they were misled by Indian experts in the ministries of energy, power and irrigation as well as the Uttar Pradesh government which was executing the project till recently. Now the work has been entrusted to the Tehri Hydro Development Corporation set up for the purpose.

Doubts about the technical feasibility of the project were first expressed in October 1987 when Mr Aleksandra Fink, chief Soviet engineer for the project, in a lengthy report to Moscow pointed out that "the existing design had failed to adequately consider the high seismicity of the Tehri area.

Soviet seismologists recommended a foundation breadth of 1.5 km to root the dam firmly to the geologically vulnerable terrain. Special crumble-proof, securely fixable stones of a definite composition were suggested.

Even though the changes recommended in the basic design of the dam are being incorporated, Soviet experts consider it inadvisable to go ahead with the project. They are now saying that for such a large project the design, right from the foundation stage, should have been to be different.

The Russians feel they have been hustled into the agreement and the financial commitment should have been made only after a thorough review of the project.

The secretary for energy and power, Mr S. Rajgopal, however, was "surprised" that the Russians were having second thoughts on the project.

He said the Indo-Soviet working group on energy had just returned from the Soviet Union where there was no mention of any such move. Assistance, however, was not forthcoming for some other projects.

Another important factor that has influenced the decision of the Soviet experts is the rethinking in the Soviet Union on the construction of large hydel projects. The accent is now on small dams and hydel projects.

PETITION FILED

Soon after Soviet assistance was assured for the project, the World-wide Fund for Nature-India and the Indian National Trust for Art and Cultural Heritage (INTACH) supported the writ petition filed by the Tehri Bandh Virodhi Sangarsh Samiti challenging the construction of the dam on geological, seismological, economic and environmental grounds. The petition is still before the court.

A study done by Dr Vijay Paranjpye, an economist for INTACH, a few months ago showed that a cost/benefit analysis did not favour the project.

The modifications suggested by the Russians had pushed up the cost of the project to Rs 2,930 crores. The study revealed that the cost of power had risen to 73 paise a unit as against 35 paise per unit earlier.

For every rupee invested in the project the return to society will be worth 56 paise, the report said.