

Dams, Rivers & People

UPDATE ON RELATED ISSUES

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Dams, Rivers & People

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Why Kinnaur people are against Karcham Wangtoo Project? The non transparent, anti people Public Hearing and EIA Process

Karcham Wangtoo is a 1000 MW Private hydro project (the largest private hydro project so far in India) of Jaypee Karcham Hydro Corp Ltd proposed to come up on Sutlej River in Kinnaur dist in HP. Since 1997, public hearing is mandatory as part of decision-making process, before giving environmental sanction. Before having the public hearing, the Project Authorities are supposed to get the EIA of the project done. A month before the public hearing, a public notice is to be given that the Environmental Impact Assessment and Environmental Management Plan reports of the project is to be kept at public places along with the Executive Summary of the Project so that people can get access to the same for a meaningful PH. This clearly means these documents should be available in local language and manner so that people can understand and give their opinion about the project. Moreover, the EIA and EMP are supposed to be done over a period of 1-2 years before this, in a manner that local people can give their inputs.

The Process in KWP has violated practically each of these norms. The EIA and EMP for this project has been done by National Environmental Engineering Research Institute and is a very shoddy piece of work, mostly done sitting in a office, it seems. (See the detailed critique that starts on next page.) There was no participation of the people in the preparation of EIA.

In case of KWP, the first time public hearing was slated for May 26, 2003. Having seen the Public Notice in Tribune, South Asia Network on Dams Rivers & People had sent Vimalbhai on behalf of SANDRP a few days before the PH to see if the documents are made available and to talk to the local people and help local people register their opinions. We then learnt that even just two days before the PH, local people did not even know about the PH, nor were they told about the documents. The EIA and EMP had over 400 pages, all in English, which the local people cannot read, leave aside the question of trying to understand. So the local people organised under the banner of Pangramang Vikas Samiti, along with SANDRP, MATU and Navrachna wrote to the Deputy Commissioner of Kinnaur that this is clear violation of the PH norms and any PH without proper information to the local people and also availability of the documents in Hindi, will be illegal and would be opposed. They also demanded that instead of Wangtoo, the second public hearing be kept at Tapri. The DC, fortunately, immediately wrote to the state govt and got the PH postponed to June 18, which still was inadequate as it was less than a month away and when the documents were still not available in Hindi on May 26. The govt also had to accept the people's demand to shift the second public hearing to Tapri from Wangtoo.

In the meantime, SANDRP prepared comprehensive critique of EIA and SANDRP representatives went with that to the affected villages before June 18 PH. There were massive protests at both the PH of Tapri and Karcham and in spite of all the efforts of JP associates and state govt to stop the protests, people made it clear that this PH is unacceptable. In the meanwhile, SANDRP had also sent the EIA critique to the Chairman and Member Secretary of the HPPCB and also to NEERI, suggesting that since the current EIA is inadequate, incomplete and biased, people will have little confidence in the process or the project if a fresh EIA is not done by a more credible agency. Since months after sending the critique SANDRP has not received any objections to the critique, it is safe to assume that neither NEERI, nor HPPCB has any objections to the critique. In fact, informally both the bodies thanked SANDRP for the critique.

The govt, realising the futility of the first attempt, decided to have another go at the PH. The fresh date of PH was Oct 7. The public hearing notice in Tribune of Sept 4 '03 said, "Interested persons/ groups/ organisations may inspect the Executive Summary and Environmental Impact Assessment and Environmental Management Plan **available both in Hindi and English** of the aforesaid project submitted by the Project Proponents in the offices..." (Emphasis added).

When SANDRP representative visited the public places to check the veracity of the claim, we found to our horror and sadness that there was no Hindi translation of EIA or EMP. Just a shoddily done Hindi translation of the Executive Summary was made available! The Member Secretary of the HPPCB accepted this lacuna to the SANDRP representative on Sept 17 '03. This clearly reflected the dishonest and anti people attitude of the authorities.

Understandably, on Oct 7, people came in large numbers and opposed the PH. In a written statement separately submitted by Shyam Sunder Negi of Pangramang Vikas Samiti and also by SANDRP and Navrachna to the HPPCB, it was made clear that the PH of Oct 7 is again violation of PH norms and a dishonest attempt by the govt to hold the PH by rook or by crook. The submissions also made it clear that unless a fresh EIA is done by a credible agency in a participatory way and made available to the people a month before the PH, no valid PH can be held.

The affected people and others concerned will continue to oppose the anti people attempt of the authorities, project proponents and NEERI in trying to push the project by rook or crook and will exercise all options, including legal ones to oppose and undo such attempts.

SANDRP

A Critique of the Environment Impact Assessment of The Karcham Wangtoo HEP

The EIA of the proposed 1000 MW Karcham Wangtoo HEP on Sutlej River in Kinnaur district of Himachal Pradesh has been done by the National Environmental Engineering Research Institute, Nagpur. It sad that the EIA is not only done in a non transparent and non participatory way, but the whole EIA is very shoddy, highly biased, incomplete and in many instances unsubstantiated and divorced from ground situation. We has sent copies of this critique several months back to both NEERI and HPPCB, as the latter was conducting the public hearing for KWP. Neither of them has raised any objections to the content of the critique and orally both have accepted the fundamental lacunae in the EIA. In such a situation, the obvious course open is to get the fresh EIA done by a more credible institute (questions on the credibility of the reports of NEERI have been raised in the past too). Unless that is done, people will have little faith in the EIA and public hearing process and also the project.

PROJECT 1000 MW HEP has been awarded to Jaypee Karcham Hydro Corp Ltd, New Delhi on Built Own Transfer basis by the Himachal Pradesh govt. It involves a 98 m high dam on Sutlej river at Karcham (Dist Kinnaur, Himachal Pradesh) to divert the flow of Sutlej into a 17.2 km long underground powerhouse tunnel that will end at Wangtoo. The implementation agreement for the project was entered into in Nov 1999.

The EIA The two volume final report dated Feb 2003 of the "Comprehensive EIA for of the 1000 MW Karcham Wangtoo HEP, Dist Kinnaur, Himachal Pradesh" has been done by National Environmental Engineering Research Institute (NEERI).

General A copy of the EIA could be obtained only on the eve of the public hearing for the KWP first slated for May 28, 2003. On demand by the affected people, the public hearing was postponed to June 18, 2003. This demand arose from the fact that the affected people were not even informed about the public hearing till May 26 2003. The authorities were clearly interested in quickly finishing off the ritual of public hearing. The local people have been raising their voice against the project for some time, and the NEERI EIA team was told about the same, but the EIA finds no mention of this.

The EIA generally seems to a shoddy, biased piece of work done to favour the project proponents. The source of most of the information in the EIA is the report of the project proponents and no attempt seems to have been made to verify or cross check the information. Thus, instead of being an independent assessment of the environment impacts of the project, the EIA turns out to be heavily biased in favour of the project proponents. This contention gets support from the analysis of the EIA as mentioned below.

The problems of the EIA can be divided into two broad categories: Errors of Omission and Commissions.

ERRORS OF OMISSIONS A number of crucial issues are totally left out by the EIA.

➤ **Cumulative Impacts** Sutlej River is already heavily dammed. The 300 MW Baspa HEP on Baspa river, upstream of the proposed KWP is nearing completion.

The 1500 MW Nathpa Jhakri HEP just downstream of the proposed project is in advance stage of implementation. The 120 MW Sanjay Vidyut Pariyojana on Bhaba River, a right bank tributary of Sutlej, just upstream of Nathpa is an existing project. Most celebrated dam on the river is the Bhakra dam completed in 1963. Downstream of Bhakra too there are structures on the river, including the Nangal diversion dam and Ropar barrage. The cumulative impact of a number of dams on a river is not simple addition of impacts of individual dams. The EIA, thus, should have looked at the cumulative impacts of the various dams on the river, including the proposed project, but EIA fails to do this.

➤ **Carrying Capacity Studies** Similarly, the EIA should have looked at the carrying capacity of the immediate environment and Sutlej basin as a whole regarding the impacts of all the various developments happening in the valley, including the proposed project, but EIA fails to do this.

➤ **Reservoir Induced Seismicity** The individual impact of KWP and cumulative impact of dams in the region on the already seismically active region is not mentioned. The contention of the EIA that this is not required for a run of the river project (a rather stretchable concept) is not supported by the EIA notification.

➤ **Disaster Management Plan** The EIA does not include a DMP. At one place the EIA report just mentions that DMP is not required for run of the river project, which is not true and is not supported by legally. The EIA notification of MEF is clear that DMP is required for all such projects. On page 9.25, Rs 1.18 crores has been made for some items for "Provision of warning system in case of dam break" as part of "cost for environmental management and monitoring", but without full dam break analysis this is of little meaning.

➤ **Flood Risk Assessment** The Sutlej river has seen a number of severe events of sharp and high floods, including one in 1988, 1993, 1997, 2000 (see Annex for one narrative of the flood damages and box below about Parliamentary discussion on floods of 2000). The upstream Baspa Project and the downstream NJP were severely damaged by the last two of these events. Not taking this risk into the assessment could prove very

costly, as is evident from these experiences. This makes the EIA incomplete. The Design Flood section on p 4.25 doesn't mention these flood events.

➤ **Peak Precipitation events** The EIA on p 4.15 mentions, "one and two day storm events depositing 40-140 mm of rain have been recorded". In reality, in 1988, between Sept 23 and 26, 436 mm of precipitation is known to have occurred in the Sutlej valley (see *Winning the Future* by B G Verghese, Konark publishers, 1994, p 24). On Sept 26, 1988, 85 mm precipitation is known to have occurred in a span of 45 mins. The impact of such storms on the susceptibility of the soils and slopes in the region, in view of the large number of big projects being constructed in the same area could be very serious. The EIA has not factored this into its assessment. It is clear from this that the EIA team has either not done its work properly or is just trying to underestimate the factors.

➤ **Baseline information on people's resource base** The EIA does not clearly list the total resource base of the affected people and how that will be compensated, including the rivers, streams, forest, land, etc.

Parliament Question Answer on The Mysterious Sutlej Floods of August 2000

In response to an unstarred Question (No 3615), the Union Water Resources Minister Shri Arjun C Sethi informed the Parliament on April 7 '03, as follows:

"Attempts made to ascertain the cause of unprecedented flash flood which occurred in the river Sutlej in August 2000 indicated that there were no corresponding wide spread rains in the upper catchment in the Indian side. It was therefore conjectured that the flash flood could be due to some cloud burst in the upper catchment or a lake burst due to some avalanche in the Tibet region. The National Remote Sensing Agency Hyderabad in its studies suggested that there could be high possibility of cloud burst in Tibet region causing heavy rainfall. Also water accumulation due to some isolated blockades adding to the heavy rainfall is also one possibility of heavy floods. An inter-ministerial team which visited the flash flood sites from 7th August to 9th August observed that the flash flood, more likely, could have been caused by failure of water impounding system in Tibet resulting in a way of water racing down the course of river.

The Govt of India entered into a dialogue with the Govt of China to explore the possibility of transfer of hydrological information for the rivers originating in China so that advance warning is issued and such catastrophic incidents could be avoided. As a consequence to this, a Memorandum of Understanding for sharing of hydrological information for river Brahmaputra has been signed with the Government of China but regarding sharing of data for river Sutlej, presently no such agreement has been arrived at."

➤ **Downstream flows** It is clear from the EIA that in the non-monsoon months, there will be no flow in the river downstream of the dam. The EIA does not assess or mention the need for minimum downstream flows required in the river from the dam site to the point some 17.5 km downstream where the flow enters the rivers. It does not help by saying that this assessment and provision will be done at a latter stage, as is done in the EIA. That exercise has to be done as part of EIA and integrated into the project operation, as that will also have impact on the power benefits from the project.

➤ **World Commission on Dams Guidelines** The EIA report does not mention the most respected guidelines on dams related issues available today, and accepted across stakeholders, namely those from the WCD and how the project performs with respect to these guidelines.

➤ **References** The EIA report does not give specific references for most of the facts and figures given, under the circumstances it becomes difficult to assess the authenticity and to verify the figures.

ERRORS OF COMMISSIONS

Objective of EIA Study misrepresented The EIA report on page 1-12 states "The objective of study is to ensure that the development options under consideration in the KWP (1000 MW) are environmentally sound and sustainable". This is a misrepresentation of the objective of the EIA study as objective should include full assessment of environmental costs, benefits and impacts of the proposal and its options *to decide* if the project should go ahead and if so in what form. The EIA has to be a decision making tool and not just a step to justify the decision of the project.

➤ The EIA, the EMP and the inputs from public consultation process have to be part of the detailed project report and techno economic feasibility of the project. That is clearly not the case here, as EIA says on page 1-2, "The DPR has been submitted to GOHP by M/s JIL indicating the techno-economic feasibility of the project", where EIA, EMP or inputs from the public consultation clearly have no place.

➤ Similarly, regarding scope of the project, it is stated on page 1-13 that the scope includes comparison of the project impacts with impacts without the project. This is an incorrect presentation. The scope should include looking at all options of future scenarios and not just with and without project.

➤ Moreover, on page 1-13 it is mentioned that EMP is to include strategies for minimising adverse impacts. This again is wrong presentation as EMP is supposed to include *avoiding*, *minimising* and *mitigating* the impacts.

Basis for demarcation of study area? The EIA on page 1-12 and elsewhere says that the study area is bound by 15 km upstream of Karcham, nine km

upstream on Baspa, five km downstream of Wangtoo and five km on each side of Sutlej and Baspa within Sutlej basin. But no justification is given for this demarcation. The impact of any such big intervention is bound to be there across the valley and the EIA is thus an incomplete exercise.

EIA biased in favour of large hydro projects There are number of instances where EIA shows it's biased in favour of large dam projects.

➤ At a number of places (e.g. page 1-1, 1-3) the EIA claims that "The Govt of India and the Govt of Himachal Pradesh have identified Sutlej river as one of the major sources of hydroelectric power" without giving any reference for source of this contention. One is not aware of such a statement from either of the govts mentioned here.

➤ The statement on page 1-3: "The Developmental activity utilising Sutlej waters was started way back, when Bhakra-Nangal Project was executed" clearly shows the attitude of the EIA agency in what can be called Development activity. According to the NEERI, use of the Sutlej waters for generations by the people staying in the valley is not called development activity and only construction of a large dam is development activity!

➤ Only known small HEPs in the Sutlej valley are the Rongtong (2 MW), Nogli-I (3 MW), Chaba (2.75 MW), Nauti (4 MW), Rukti (1.5 MW) and Ghanvi (22.5 MW). The potential (as per CEA report of June 1997) of only the Small HEPs in Sutlej basin alone is 313.5 MW, a very miniscule part of which has been harvested and practically no projects being under implementation. This does not include the potential from mini or micro hydro projects, which has not even been assessed. Not mentioning any of these facts shows the bias of the EIA agency in favour of large projects.

➤ Blanket statements like "the hydropower development in Himachal Pradesh needs a renewed thrust" and "it is more economical for development of hydropower than thermal power" (see page 1-9 and 1-10) are neither justified nor appropriate to come from an EIA agency.

➤ Statement of P 1-10 that "the river Sutlej has a hydel potential of 9226.75 MW out of which only 1332.75 MW has so far been harnessed" clearly shows the bias of the EIA agency. Similar is the case of Para 3.2 (here even the figures are outdated) where EIA is trying to justify the project! This is written as if the very existence of potential is good enough reason to harness it! This goes totally against the very spirit of EIA exercise.

EIA biased in favour of the Project and the Project Sponsors The EIA includes rather large portions about the activities of the project proponents, a lot of which (e.g. activities in hotel and cement business) is irrelevant. Moreover, the way the information is presented (saying e.g. that the project proponents are

"leading engineering company", that "it specialises in execution of HEPs") clearly shows the bias of the EIA agency for the project proponent, putting question mark over EIA agency's independence. Some of the information given is even wrong, e.g. saying that Indira Sarovar Project (wrong name, correct name is Indira Sagar Project) in MP is completed, when the project is far from completed.

➤ The statement on page 3-5 "It is, therefore, essential that the implementation of the project, which is techno-economically viable, is commenced as early as possible" clearly shows the predetermined conclusion and bias of the EIA agency for the project. The EIA agency, that is supposed to assess if the project impacts are acceptable and if the project should go ahead, is saying this at the outset!

➤ On page 5.1, the EIA says, "In order to use the maximum valley potential..." This is a strange statement as objective should be to assess the optimum benefits and not maximum benefits. In any case, it is not EIA's role to look for maximising of benefits. This again shows the bias of the EIA agency for the project. On that same page EIA goes on to say, "In this stretch of the river, high dams are not appropriate since chances of flooding large populated areas cannot be ruled out. Nevertheless, an acceptable reservoir must have sufficient pondage capacity to produce peaking power for at least four hours per day." On what basis the EIA arrives at these statements is unclear. In any case, is it appropriate for EIA to make such a statement?

➤ On page 7.2 a patently wrong statement is made by EIA agency, "In all, there was no objection to the Karcham-Wangtoo hydroelectric project aimed at generating electricity and distribution to northern grid and the State Govt". This is wrong because a very large number of affected people had expressed their opposition to the project when EIA team visited the villages. The EIA team also accepts elsewhere that at least 26% of people they interviewed opposed the project.

➤ On page 8.3 the EIA makes another unjustifiable statement, "The project area does not have any environmentally sensitive areas". Particularly when EIA report elsewhere mentions how the project is in fragile Himalayan region that is prone to seismic activity.

➤ On page 9.1 EIA says, "In the background of the comprehensive environmental impact assessment studies, public consultation and information campaign has been organised at the earliest stage of the project to dispel misgivings about the project and to successfully overcome the problem, if any, of non-acceptability". This precisely is not the role of an EIA agency to dispel misgivings and overcome the problem of non-acceptability". Greater evidence of non-impartiality of EIA agency would be difficult to find.

Justifications unjustified The EIA report tries to justify the taking up of the project, which it should not be doing

in any case. Moreover many of the facts and figures it uses are factually wrong, tendentious misrepresentation, outdated or estimates that have already proved to be wrong.

➤ The EIA on page 1-9 says that in 1997-8, the peaking shortage in the country was 19%, where as the correct figures is only 11.3%, as given on page 8 of annual report of Union Ministry of Power. This is clearly an attempt to justify the project with the use of **wrong figures**.

➤ On page 19 EIA says the energy requirement in HP is likely to increase from 1487 MU in 1990-1 to 4576 MU in 1999-2000. The correct figure for projection for 1999-2000 as per 16th EPS of CEA is 3113 MU, much lower than the exaggerated figure given by EIA. Similarly on the same page, EIA says that peak load demand in HP would go up from 325 MW to 939 MW in the same period, when the correct figure as per 16th EPS of CEA for peak load demand in 1999-2000 is much lower at 610 MW. Thus, with the use of **wrong figures**, the EIA valiantly tries to justify the project, which it should not be doing in any case.

➤ The EIA report dated Feb 2003 uses outdated and exaggerated figures to justify the need for KWP. Thus, for example, while the report could have given the figures of actual peak demand, it gives figures from 16th EPS of CEA, which have already proved to be exaggerated, as seen below. Actual peak demand in 1997-98 as ministry of Power Annual report of 2002-03 was 65435 MW.

(MW)

	Peak Demand Projected	Actual Peak Demand	Projected Rise above 97-8 level	Actual Rise above 97-8 level	% Exaggeration in projected Demand
1999-00	75012	72269	9577	6834	40.14
2000-01	79856	78037	14421	12602	14.43
2001-02	85132	78441	19697	13006	51.45
2002-03	90510	81492	25075	16057	56.16

It is clear from the above that the figures projected by 16th EPS of CEA are already proved to be highly exaggerated and the EIA report could have used actual demand figures to give clear picture instead of using outdated figures to justify the project.

➤ As a matter of fact, the CEA projections of power demands have consistently proved to be overestimations. To give another instance, in 1987, CEA projected that in 1995-6 (see the World Bank's Staff Appraisal Report for NJP, p 23), peak load demand in Northern Region will be 25600 MW (Actual peak demand was 15937 MW and that figure of peak load demand is yet to be reached even in 2003) and energy demand will be 131 000 MU when actual demand in 1995-6 was 105836 MU.

➤ The EIA repeatedly says that KWP is required to correct the hydro-thermal balance in the power sector and that more hydro project like KWP are required for this. What it does not state is that for at least half the

year KWP will be working as base load station and not peak load station. Secondly, as far as Himachal Pradesh is concerned, out of total installed capacity in HP of 764.8 MW (as per Annual Report of Ministry of Power for 2002-3, possibly includes only HP share of the central sector stations), Hydro constitutes 634.57 MW. This means the hydro-thermal power sector balance in HP is hugely in favour of Hydro and HP does not need more hydropower station for its own consumption. Moreover, as the World Bank's Project Implementation Report of the NJP (Sept 2002) makes it clear, HP is power surplus most of the time of the year and is a power exporter.

Benefits misrepresented, over estimated Throughout the EIA report (e.g. on page 3-7) it said that KWP "will operate as a peaking station". If one looks at the water availability situation and power generation claims from KWP, it is clear that the project plans to operate at full capacity as long as water is available for the same, which means it will operate as base load station during April-Sept period. And operate as peaking station only in the six non-monsoon months during Oct to March. Without such an operation the project cannot generate the 4228.5 MU as claimed. In fact, the NJP, just downstream of KWP is to operate as base load station during April-Sept and peak load station during Oct-March. By giving wrong representation of the operation of the project, the EIA agency has either shown its ignorance or bias or both.

➤ It is stated on page 3-8 that the project is designed to provide peak power for four hours based on assumption that minimum flow at 90% dependability will be 87.03 cumecs. In reality, if we look at the 90% dependable 10-day flow data given in Table 4.13; we see that the flow goes below 87.03 cumecs for three months between Dec 20 and March 20. Thus during these three months, the project won't be able to supply even the 4 hour peak generation. This is not even stated in the EIA.

➤ On page 3-15 it is mentioned that power station will be shut down in monsoon months when river is carrying heavy silt load. However, it is not mentioned how long this will be required and what impact this will have on the power generation at the project. Not including this will clearly show power generation higher than what is likely to be the real power generation.

➤ The World Bank's Staff Appraisal Report for the immediately downstream Nathpa Jhakri HEP says on page 37, "Heavy sediment loads carried by the Sutlej River, particularly during monsoon, may result in frequency and costs of equipment and works maintenance higher than average. Excessive siltation of the forebay pond might also restrict full load operating time". The same will be applicable to KWP, but the EIA makes not mention of this risk and the consequent reduction in project benefits.

Will KWP drown Baspa II components in monsoon?

“The maximum pond level for the reservoir has been kept at EL 1810 m, which is the tailwater level of Baspa II” as stated on page 3-7. Now nowhere in the EIA is it stated what will the maximum water level at the dam during monsoon in general and during highest flood peaks. It cannot be the same as max pond level of EL 1810 m, as water is bound to need space above that level to flow over the dam. Moreover, water will be flowing in a sloping profile as we go upstream from the dam, thus if the water level at upstream points will be higher than the maximum water level, which is called the backwater effects. The Baspa II tailrace is around 1.6 km from the KWP dam axis. Thus if max pond level at dam site is EL 1810 m, then the level of water upstream will be higher. Does this mean, the KWP will drown components of Baspa II in monsoon? The EIA does not throw any light on this question and creates doubts if the KWP is properly designed.

The doubt is further strengthened as the water profile behind the dam at EL 1810 m in figures 3.4 and 3.5 are shown horizontal, which is not the case generally and water profile generally is sloping up in the upstream direction. Those figures in fact show that at the upstream most point of the reservoir, the silt level will be right at EL 1810 m. This may not be case all across the river bed at the point as shown in figures 3.4 and 3.5, but this further raises the doubt if the water level would go above 1810 m during monsoon and during peak flood points.

Impact of Baspa operation and impact on NJP benefits The EIA does not mention as to what will be impact of operation of Baspa on the water inflow into KWP in non-monsoon months, nor does it mention what will be the impact of KWP operation on the NJP benefits. On the contrary, the EIA claims (page 1-3) that “the project upstream as well as downstream of it are also run of the river schemes, which will not affect the water availability and utilisation for KWP”, which is wrong.

Questionable Hydrology Hydrology figures are at the very basis of the viability of hydropower projects. Unfortunately, the EIA agency has, like in case of all other information, depended on project proponents for this information. However, in view of available information, the figures given in the EIA seems doubtful. Firstly, the 90% dependability inflow figure at Karcham as given in the report is 98741 cumec-day or 8531.2 MCM. The catchment at Karcham is 48755 sq km. The 90% dependability inflow figure given at Nathpa as given in the World Bank’s Staff Appraisal Report for the Nathpa Jhakri Project on the other hand is 7690 MCM. Now the point to note is that NJP is a downstream project and NJP’s catchment area at 49820 sq km is larger than and inclusive of the KWP catchment. Moreover, the World Bank figure is based on 56 years

of hydrology data, when KWP figure is based on just 34 year data as given in table 4.14. Thus the hydrology figures given in the EIA are highly doubtful and this raises the question about the authenticity of the data and also viability of the project. The fact that EIA team is just reproducing the project proponent’s data without verifying or cross checking with independent sources once again raises doubts about the objectiveness of the EIA.

➤ Moreover, at different places in the EIA, hydrology figures given are for different sets of years. So while the 90% and 50% dependability figures given are from 34-year data, the monthly discharge given in table 4.15 is for 28-year data. And very strangely, the data given in table 4.13 and table 4.15 for 90% and 50% dependability years do not even match. This raises further doubts about the authenticity of the data.

➤ Then in Annex 3.1, the 90% dependability figure given at 141 144 cumecs day that is 12217.9 MCM does not match with the one given in table 4.14. Similarly, the 50% dependability figure given at 112 543 cumecs day in Annex 3.1 does not match with the one given in table 4.14. And the strangest this about these figures in Annex 3.1 is that the 50% dependability figure is lower than 90% dependability figure, a mathematical impossibility! The hydrology figures given in the whole EIA, thus stands totally discredited and that puts a big question mark over the very viability of the project.

Contradictory claims about downstream releases

On p 3-9 it is stated that “in non-monsoon period all the discharge of the river Sutlej will be diverted to the head race tunnel”. This means that there will be *no water* release downstream of the dam.

➤ On p 6.13 EIA claims, “However, a minimum flow of water as approved by MEF shall be maintained immediately downstream of the dam during lean season to maintain the riverine ecology with incorporation of operational mechanism in the dam design so as to allow minimum flow downstream of the dam.” But what is the minimum flow required and what is the mechanism in place to assure that? The answer to second part of this question is not given, whereas the answer to the first part, it is admitted, is yet to be found!

➤ On p 6.13 EIA says, “The project proponent would sponsor a project, to study the optimum quantity of water to be released to maintain the downstream ecology, to be conducted by the NEERI, Nagpur and the HPSEB&PCB and the outcome of the study would be applied for this project”. While this is admission of the fact that no study of the releases required for the downstream ecology has been done, what is shocking is that EIA does not say that this should have been done as part of EIA or before the EIA. How can the EIA be complete without this? Moreover, it seems NEERI, is mobilising further contracts for itself while doing the EIA, clearly an unethical practice, to say the least.

➤ On page 6.14 EIA says about the discharge of silt slurry from the desilting chambers, “The silt slurry

contains suspended solids of 500 to 10 000 mg/L in a flow of 100 cumecs. The water with such high-suspended solids has little light penetration with the reduction in the photosynthetic activities. The Sutlej River will have turbidity level upto the point of confluence of tail race discharge and may result in an adverse impact on the aquatic ecology." The next sentence is quite illogical to follow from here, "Hence, the impact due to the disposal of silt slurry from the desilting chambers in the river Sutlej is expected to be marginal during non-monsoon in view of contribution of khads flow between dam and tail race discharge point." Particularly when the cumulative discharge from ALL the khads till tail race tunnel is just 5.52 cumecs. What is stranger is that while in most of the document the water flow is given in cumecs, the khad flows on page 6.13, all of a sudden is given in cusecs, possibly to give an appearance of bigger figure flows?

➤ In Case of the downstream NJP, though that project also said that minimum downstream flows will be maintained, thirteen years after the World Bank loan was given, the mechanism to ensure was not in place. This is what the Project Implementation Report of Sept. 2002 said, "NJPC is holding consultative meetings with the local communities to ensure that their needs in the deep unpopulated gorge of the river have been understood, and to establish a plan for the operation of the sluice gates in the event that they ever need to be opened to augment the streams and maintain a minimum level of flow in the river bed".

Can KWP regulate flood discharges of Sutlej? The EIA on p 6.12 claims, "However, the flood discharge during the monsoon months will be regulated due to construction of the dam". Then again on p 8.6 this claim is repeated, "Due to reservoir impoundment flood peaks in river Sutlej will get moderated". This is a shocking statement when the EIA elsewhere has accepted that there is little space in KWP reservoir to in any way affect flood discharges. How can a 5.5 MCM reservoir have impact on floods when that reservoir space is equivalent of a few minutes of flow when river is in floods and when the reservoir is to be always kept full in monsoon to achieve maximum power production, as is evident from projected power generation figures?

Questionable assumptions about Siltation Looking at the figures 3.4 and 3.5 and various statements in the EIA, it is clear that EIA assumes that the silt profile from farthest point of the reservoir to the dam axis will be in a straight-line. However, this is rarely the case. The coarser silt settling in the upstream portion will mean that the silt profile will be more like a curve rather than a straight-line. This would also mean that more of the live storage will be taken up by the silt than assumed, affecting the project performance during the non-monsoon months at least.

➤ On p 3-9 it is stated, "In non-monsoon period, the river flow will be comparatively clear and flushing the

sediment through the sedimentation chamber will not be required". It is not clear what is the basis of this assumption, but if this is proved to be wrong, as is the case during the initial snow melt period in the summer when flow rate too is low, the project will not perform as planned and benefits will be lower than projected.

➤ On p 4.25 it is stated "Thus, it can be concluded with the implementation of proper flushing arrangements of desilting chamber, the reservoir is not expected to have major sedimentation risks". This is an assumption that will decide the proper operation of KW.

➤ The Assumption that the Sutlej carries little silt in non-monsoon months is doubtful when read with this line from the WB's NJP Implementation Report (0902), "...Bank staff advised that in view of the heavy, silt-laden water that the Sutlej carries for most of the year.."

Catchment Area Treatment It is stated on p 6.14 that CAT will be done by the KWP in the direct draining catchment. But the silt is contributed by whole catchment and not just direct draining catchment. In fact, since indirectly draining catchment area is much larger, the treatment of directly draining area, *even if* done, will have little impact on the silt load. As far as Baspa catchment is concerned, the Baspa II dam will be releasing all the silt in that dam, into the KWP.

➤ Nowhere in the EIA report is it made clear as to how much land will be treated in what way, what is the basis of the decision and how it will be assured that what is necessary and promised is done?

➤ Moreover, there have been many frauds in the past of the CAT being done on paper and nothing happening on ground. Without clearly defined and transparent mechanism, there is little possibility of CAT being done. By not giving any of the details of CAT, the EIA agency has again abdicated its responsibility and once again shown the bias towards the project.

➤ The way CAT is habitually not implemented is evident from the nearby WB Funded NJP. The project for which WB signed agreements in 1989, had still not implemented CAT in Sept '02 as the Project Implementation Report says, "Implementation of the CAT remains a major challenge".

Eutrophication and Green House Gas Emissions

While the EIA accepts creation of anaerobic conditions in the lower layers of the reservoir and higher nutrient availability leading to aquatic plant growth on p 6.15, the EIA, typically, goes on to conclude that the magnitude of the impact is "not expected to be significant". Use of word marginal and insignificant when talking about impacts is quite frequent and without basis in most places, as in this case.

Doubts about Reservoir stability Zones of debris accumulation and clearly visible sites of land slides on both banks of Baspa river (see p 4.6) and Sutlej river (see p 4.8) within KWP reservoir raises questions if the reservoir will be stable. Moreover the change in

microclimate with the coming of reservoir and also with the project related activities would only add to the instability and possibilities of landslides into the reservoir. On p 4.9, the EIA does mention that the landslide at Urni blocked the path of the river in the past. Increased activities on the road would further destabilise the slopes. The EIA report does not clarify what will be impacts of this on KWP & surroundings.

➤ The EIA mentions on page 4-9, "The whole area is unstable and may slide during continuous rains and under earthquake conditions and block the road for considerable period". However, the EIA does not draw out the implications of this, nor does it mention the impact of this on the project decision and surroundings.

➤ **Impact on communities not assessed** The impacts of increased instability and landslides on the communities are neither assessed nor any mitigation measures mentioned. The project activities are bound to lead to increased landslides, as has happened in case of NJP and Baspa II in the nearby areas. The area with severe erosion intensities and also with severe and very severe landslide potential zones are just near the project site, as mentioned on p 4.46 and 4.47.

Engineering geology and Seismology The EIA is clearly trying to underestimate the significance of seismic factor. Firstly it is known, as listed on p 4.9-10 and table 4.1 that the region has been an active seismic zone having experienced earthquake of upto 8 on Richter scale. Moreover, in 1975, Kinnaur itself experienced an earthquake of 6.8. The EIA notes on p 4.11 that the concentration of seismic events in the NS direction in the region is very much pronounced. And yet the EIA without any substantiation says that the effective peak ground horizontal acceleration of 0.115 g may be assumed for the project.

➤ The height of the dam mentioned in Annex 4.1 on engineering geology is 90 m, when the dam height above deepest foundation level is 98 m. This raises questions if the assessment of engg geology is correct.

➤ The recommendations of engineering geology on p 6.31 and in Annex 4.1 includes suggestions of further exploration to be done *before* construction is started. Again on p 6.31 it is mentioned, "it is desirable to carry out dynamic analysis for the final design in order to estimate deformations due to probable future earthquakes". This clearly means that the EIA on this aspect too is incomplete and as such EIA could not have given a go ahead to the project.

➤ On p 6.31 it is mentioned that "Maximum Credible Earthquake for the site to be of magnitude 5.0 at an epicentral distance of 150 km from the site focal depth as 150 km". However, what is the basis for this conclusion when the site is known to have experienced an earthquake of 6.8 just 28 years ago?

➤ Moreover, the EIA does not mention or assess the impact of KWP and other HEPs and its building activities on the seismic activity in the region.

Seismic and Geology Aspects:

Comments by Sreedhar Ramamurthi, Academy of Mountain Environics, New Delhi

1) The road disruption will be a significant impact to people upstream. The Highway even if temporarily disrupted will cause real losses to apple growers. The EIA does not even mention such impacts.

2) Blasting for tunnels will definitely affect the existing structures in the adjoining settlements. House etc may develop cracks, fractures. It has been the case in several projects. The EIA should have included this aspect and also possible cautionary measures and also compensatory measures.

3) Muck disposal will affect significant area of the region, for example the 6.84 MCM of muck estimated (p 4.38) even dumping to a height of 10 m will mean a need of 68 sq km land. Even if one were to believe that the project authorities will use some of the debris as claimed, the project would still need an additional area of 33.37 sq km over and above area mentioned in table 4.37. Even the area mentioned in table 4.37 may not be able to accommodate all the debris mentioned as in some case the areas are expected to accommodate much more than 10 m of debris.

4) The question of seismicity has been glossed. The seismic records from Wadia Institute for Himalayan Geology has been indicating a swarm of EQs in the region. The project proponents will need to give more info on specific studies undertaken in the region.

➤ As per WB Project Implementation Report for NJP (Sept '02), in case of NJP, "Anti-seismic design of the dam has been carried out according to Indian norms, using an acceleration of 0.29g at crest level". Why should the norms be any different for KWP?

Whole sections lifted from another document?

Some sections in the EIA give an impression that they are straight away lifted from another document. For example, section 1.4 on p 9-10 gives an impression that this is lifted from a document of early nineties. For example, the section says that construction of Baspa II and NJP has been taken up *recently*, when these projects have been taken up many years back and in fact elsewhere said that they are nearing completion!

Incorrect figures, contradictions

➤ On p 3-2 EIA mentions that total HEP potential of HP is 18715 MW. This is wrong on two counts. Firstly, this does not include the potential from micro, mini and small HEPs, which is not even properly assessed. As per CEA study of June '97, the total potential of just small HEPs in HP is 1186 MW. Secondly, as per HPSEB website, the total hydro potential is 20376 MW.

➤ Regarding hydro potential of Sutlej basin, the EIA says on p 1.10 that the figure is 9226.75 MW, where as on p 3.2 it says the potential is 6272 MW. HPSEB

website says the potential is 8633.75 MW, out of which 1350.75 MW has been harnessed.

SOCIAL ASPECTS Some serious problems with the way social issues are dealt in the EIA include:

- **Land required for the project** While it is stated on p 4.36 that that 155.29 Ha land will be required for the project, on p 4.37 it is stated that an additional 184.1 Ha will be required for the project, which will include forest and govt land, but it is not clear how much forest and govt land this will include and what will be the impact on people who use of this land. The in-principle forest clearance letter mentions that the project proponent “will take all measures to contain subsidence over 31.1414 Ha forest land required for underground works”, but EIA has nothing as to what will be the impact of project on this or other land. Thus, the EIA is at best vague and confusing about the land required.
- **Violation of in-principle forest clearance** While conditional forest clearance clearly says that the project authorities will do their best to contain subsidence over the additional 31.1414 Ha of land, the EIA on p 4.37 mentions that additional land will be used for leveling by filling muck etc. Thus the EIA already clearly mentions the intentions of the project to violate the conditions of in-principal forest clearance!
- **Land acquisition before clearances** It is said on p 1-11 of the EIA that notification under section 4, 6 and 7 of the land acquisition act has already been issued, even before the project gets environmental clearance. Does this mean that the EIA, the public hearing and the environmental clearance process are only conducted for the sake of conducting them and they do not have any bearing on the decision of going ahead with the project, which is a foregone conclusion? This action is totally against the spirit of the process.
- **Contradictory FRL figures** While most of the report gives 1810 m as FRL of the project, on p 3.37 it is mentioned *twice* as 1812 m. Two meters of additional reservoir height would mean very significant increase in the land under submergence and report does not give this at various levels.
- **Maximum Water Level not stated** The EIA report does not state the MWL that will be attained behind the dam and how much land will be submerged at that level and how many people will be affected.
- **Contradictory submergence figures** On p 3.30 it is mentioned that total land to go under submergence is 55.97 ha, whereas on p 3.7 the figure given is 58.8 Ha. Such contradictions do not inspire much confidence in the EIA. Moreover the source of this information is project proponent, who would have vested interest in underestimating the impacts. Such dependence on the project proponent for crucial impacts of the project goes against the independence and objectivity required in impact assessment.
- **Schedule areas** The EIA does not even mention that the Kinnaur villages being under schedule areas, no decision about the project can be taken without the

affected villages giving their consent through gramsabha decisions and that no gramsabha can take a decision unless they are told about full impacts of the project. As a matter of fact the EIA and EMP should be provided in Hindi to the affected villages.

- **Socio-economic Survey** The Socio economic survey mentioned on p 4.57 is highly inadequate and does not even mention that several villages had given memorandum to the NEERI team that they are against the project and were in fact agitating against the project.
- **R&R Package** The R&R package mentioned in the EIA is vague and confusing at best. In any case the provisions therein are hardly just. Minimum required provisions should follow the existing provisions like those in Sardar Sarovar Project, where each affected family (family defined as in SSP policy) would get a minimum of 2 Ha of irrigated land.
- **No clear picture on families affected** At various places in the EIA different figures are given regarding the number of families that may be affected. For example on p 6.4 it is stated, “31 families would be affected due to land, house and shop acquisition totalling to 77 PAPs. When the land acquisition takes place six families would be rendered homeless”.
- **“No R&R involved”?** On p 6.5 of EIA it is stated, “No site is identified since the private landowners are not oustees but are only affected persons as they have their land and houses elsewhere. Hence no R&R of PAPs is involved due to land acquisition. In addition, no infrastructure facilities will be provided since, the project proponent would pay the cost and compensation only”. This is indeed a shocking statement that no R&R is involved and no infrastructure facilities will be provided. If that is the case then why is all the discussion given at various places about the R&R package?
- The R&R Monitoring & implementation committee suggested on p 9.4 has no place for affected people!
- **Disruption of Drinking Water Sources** The EIA states on p 4.52, “Disruption of drinking water sources along head race tunnel alignment” could be one of the impacts, but there is no mention anywhere as to how many people are at risk in this way, what measures are planned to avoid this and what will be the obligation of the KWP proponents if the drinking water sources are disrupted. Again on p 6.13-14, it is said, “However, the reconnaissance survey of water resources in villages along the head race tunnel alignment by the team consisting of Panchayat members, officials of I&PH Dept, and the project proponent is essential before commencement of the project work”. Should not this be done as part of EIA? How can EIA be complete without assessment of all such work?
- **Possible impacts not mentioned** The EIA does not even mention, assess or discuss some of the possible impacts on the people, e.g. the impact due to noise, dust and vibrations due to use of explosives, due to possible landslides, due to dumping of debris, impact on apple farms due to change in micro climate, etc.

Options Assessment: A farce One of the important component of an EIA report is to assess the various options available and show which is the least cost option. This comes under the EIA because it is part of the terms of EIA to look for ways of avoiding the permanent environmental impacts of the project. Chap 5 of the report is supposed to fulfil this part of the EIA. But the content of the Chap 5 is complete farce of this objective. It does not attempt to state what are the needs of the society and what are the options for satisfying those justifiable needs and which is the least cost options. Moreover, it needs to be assessed if the option chosen fits into sustainable development matrix and if the process is transparent & participatory.

Chap 5 does none of this, and in stead lists what options were looked at for the components of the KWP by the proponents in the DPR without any analysis or comment. This is clearly not what is meant by options assessment and the whole chapter is a farce.

In Chap 10 of EIA on "Economic Assessment", particularly chap 10.4, there is an attempt to show the costs and benefits of environmental impacts and show how good the project is. This is most unfortunate as it is being done not by project proponents but by an EIA agency. Here the EIA tries to compare the emissions from a coal-fired plant of equivalent capacity. This is most inappropriate and unscientific. If the project's optimality is to be gauged, than first of all, one has to see what justifiable benefits projects generated, what justifiable needs it fulfil, at what total costs and if the project is an optimum way of achieving it. In respect of the last aspect, there should be an assessment of the scope of increasing the generation efficiency of existing infrastructure, scope for reducing the T&D losses, scope for increasing the end use efficiencies, scope for alternative generation options and so on. The EIA report asks none of these questions, and once again shows the bias in favour of the project.

The first Para of Chap 11 also falls under the same category as chap 5 and 10. Firstly, here no attempt is made to show that the project is NOT going to work as peaking energy source for at least half the year. Moreover, none of the options are looked at for even managing the peak. The bias of the EIA agency for the project and its ignorance of crucial environmental issues is once again apparent.

Project Risks The EIA should have included a section on project risks. The large HEPs rarely generate projected benefits due to many reasons. Hydrology, Geology, Siltation, Seismic aspects, Flood damages, time overruns, cost overruns are some of the risk areas that would affect the performance of projects like KWP.

To give one instance, as per the WB's Project Implementation Report for NJP (0902), "HPSEB's net generation, which was 1,481 MU during 1998-9,

declined to 1198 MU during 1999-00, 1150 MU during 2000-1 and 1146 MU during 2001-2. These reductions were the results of lower than usual discharges at HPSEB HEPs caused by poor monsoon, and the shutdown, which was needed to carryout de-silting at the Bhaba HEP. These reductions resulted in substantial losses of revenue, about Rs 560 M in 2000, Rs 750 M in 2001, and Rs 750 M in 2002". The risks of hydrology, siltation and flood damages are as relevant to KWP. Bhaba is in fact in the same area as the KWP.

What happened at NJP when work on it was started in '93 shows the kind of geological risks that the project could face, "In July '93, as the civil works contracts were being awarded, a fall of 12 MCM of rock occurred on the right bank at the proposed location of the dam. This slide covered the proposed location of the inlet of the river diversionary tunnel, which would be required in order to divert the river, when in seasonal (winter) low flow mode, to enable the dam foundations to be laid. NJPC had to re-locate the dam axis and the inlet, which almost doubled the length of the diversion tunnel. Removal of the landslide took six months". (NJP Implementation Report, WB, Sept '02)

The WB thus describes another instance of geological risk at NJP, "Construction of the 27 km long headrace tunnel connecting the reservoir to the underground power station took about eight years instead of the five years envisaged at appraisal. This was mainly because of the difficult rock (including shifting underground sand, and squeezing rocks) and underground conditions (hot water from local geo-thermals) that were met with along the route. At appraisal the risk of meeting such conditions was identified as "at an acceptable level', when indeed it should have been identified as a 'practical certainty", given the location of the scheme in the young Himalayan rock formations. Massive, costly and time-consuming rock-bolting exercises had to be performed to retain the steep, unstable rock slopes at the site of the dam and tunnel intake, and at the tailrace. Several hundred 45 m-long 200 ton capacity rock anchors had to be installed". (NJP Implementation Report, WB, Sept '02)

The kind of risks from silt in the river that KWP may face is evident from the risk that NJP may face, as described by the WB Implementation Report for NJP (0902), "Some uncertainty still exists regarding the risks of abrasion to the turbines from water-borne solids, but at worst these would lead to higher costs/ lower output rather than endanger the viability of the plant".

The kind of risks from floods that KWP can face is indicated by the experience of NJP, "In Aug 1997, an unprecedented flash rainstorm brought chaos to the site, with fifteen fatalities, and access cut off to much of the dam site and its quarries for many months. (ii) On the night of Aug 1, 2000, the long since completed underground powerhouse cavern was inundated to its

crowd by river water from very heavy flash floods, (estimated to be one in 65,000-year flood flow) caused by torrential rainfalls in the upstream reaches of the Sutlej River, linked possibly with the overflow of a glacial lake in China. NJP, as is the international practice for such schemes, had been designed to withstand one in 10,000 year flood. Twenty contractors staff were drowned. The equipment and plant, which had already been installed, was entirely destroyed and had to be re-manufactured, in Europe and elsewhere overseas". (NJP Implementation Report, WB, Sept '02)

The kind of risks of access to project site, particularly during monsoon that KWP can face is reflected in the World Bank's Project Implementation Report of Sept '02 for NJP, "The main hindrance to operational reliability is represented by the access road from Jhakri to the Nathpa dam site. As a matter of fact, access to the dam site cannot be guaranteed during the monsoons, especially in the case of emergencies, because the road can easily be interrupted at several locations by mud and! Or rock slides of different magnitude". This is particularly important as throughout EIA, it is assumed that the roads upto Nathpa is good enough for KWP.

The time-overrun risk is evident from the experience at NJP. This project was to be completed by June 1995 as per World Bank Staff Appraisal Report of 1989. In Sept 2003, over eight years after the first projected completion date, the project completion isn't in sight.

The kind of cost overrun risk is evident from the experience at NJP. The initial project cost was Rs 16 B when the project was taken up in late 1980s. Today estimated cost is about Rs 100 B, that is cost escalation of over 625%.

Conclusion From the above analysis it is clear that the EIA of KWP done by NEERI is biased, inadequate in scope or work, shoddy in what it has written and totally in violation of the letter and spirit of the EIA. Under the circumstances, not only this EIA should be rejected, an independent enquiry should be conducted as to how come such an EIA got to be done and submitted at all and should NEERI be allowed to conduct future EIAs. In the meanwhile, fresh EIA needs to be done by a credible independent agency. In the meanwhile, no work should be allowed on the KWP.

Secondly, if the data on hydrology, geology, sedimentation, local logistics and flood peaks as given in the EIA and sourced from KWP DPR is the basis of the project, than these issues raise fundamental questions on the viability of the KWP in present form. HPSEB, HP govt, CEA and other agencies need to make the DPR public and also revisit the viability of the project and make necessary changes in the project decision and design.

SANDRP

June 14 2003

Annexure 1

Biological Impact Assessment:

Comments by Seema Bhatt

At the outset it should be stated that the Biological Environment section of the EIA is rather poor. The EIA does not properly assess the impact of the project on biological environment. Many of the statements made are fairly arbitrary with no data to support them.

Section 1.9. The Scope of Work does not include assessment as to how the project will impact the livelihoods of people who depend on the area for sustenance. Also, the Section discusses (under Terrestrial) the assessment of potential impacts on protected areas, but not on the overall biodiversity of the region.

On p 4.37 it is mentioned, "The forest area involved in this project does not cover extensive forest or trees or endangered species". This statement of EIA is contradicted at a latter stage (e.g. on p 6.24) when it is stated that the KWP involves clear felling of 1191 trees.

P 4-48. The report claims that species of the study area are "neither endemic nor rare or endangered". However this is no justification for destroying the same. The area still represents a significant ecosystem and the impacts of the project need to be assessed and clearly stated. There are people who depend on the area. Also there are important medicinal plants of tremendous value in the area, which the report does not even mention.

P 4.49. The report states that the Rupi-Bhaba wildlife sanctuary is 3.5 km away and hence will not be impacted by the project. There is no basis for making such a statement. Animals do move. They don't necessarily stay within the sanctuary area and any disturbance in the area will have an impact on them. Further, on the same page, the report lists some very important faunal species but goes on to claim that these will not be impacted by the project without any basis. Moreover the statement that sanctuary does not fall within the study area is not correct as study area includes 5 km on either side of Sutlej and Baspa Rivers.

On p 4.49 it is mentioned that the area of Rupi-Bhaba Wildlife Sanctuary was reduced from 650 sq km to 503 sq km on Sept 7, 2001, just when the EIA was underway. Why was this done and does the excluded area lie around the project site? The EIA does not answer this crucial question.

On p 4.51 it is said, "the checklist of the fishes available in the river has not yet been prepared." But this exactly what the EIA should do and state what fish species exist in the river. Then on p 4.52 it is stated, "In view of rocky bottom of the river bed and high flow of the river water, sediment samples could not be collected. In

general, invertebrates population is not expected much in such kind of habitat". This is an assumption. An EIA cannot be a statement of assumption!

On p 4.52 it is said, "However, the biomonitoring studies of the Sutlej River will be conducted from the HPSEP&PCB, Shimla to establish the baseline status and the project proponent would sponsor the studies". But such studies should actually be part of EIA and without which EIA cannot even be considered complete.

P 6.19, it is said, "The debris generated during road construction will be used for filling and leveling the road surface. The extra material that remains unutilised may roll down along the slope and gets accumulated on slopes. This in turn is likely to damage the flora along the slopes". Should this practice of allowing the excess debris to roll down the slopes be accepted in fragile, landslide prone areas? The uncritical acceptance by EIA of this environmentally damaging practice of the project proponent again shows the callousness of the EIA agency and its bias in favour of the project.

P 6.21 It is said, "the real loss of forest species does not arise as the area is devoid of vegetation". This statement is highly questionable and shows the utter lack of understanding of EIA team. As a matter of fact, the EIA report further on contradicts that statement.

P 6.23 The statement "The diversion of forest land of 136.2833 ha has been cleared by MEF, GOI for various activities of the project" is incorrect and misleading. MEF has given only an in principle clearance.

P 6.23 It is stated at the very outset of this section that prediction of impacts on biological environment is a complex exercise. Long-term studies are required to carry out such studies. The EIA is incomplete without proper assessment of biological environment impacts.

P 6.25 Compensatory afforestation as a suggested mitigatory measure cannot compensate for the loss of microfauna, flora & other kind of biodiversity associated with the trees to be felled. This needs to be stated.

P 6.26 The water reservoir that will be created may attract birds but that is no replacement for the inhabitant fauna that will disappear as a result of the project.

P 9.12 The EIA notes, "The bio-monitoring studies of dam upstream and downstream of Sutlej River will be conducted by HPSSEP&PCB at the cost of Rs 3 lakhs to determine baseline status". But this studies should have been done before or during EIA and not afterwards. Another instance that shows how incomplete the EIA is.

On p 9.12-13 the EIA report suggests creation of a committee for compliance of EMP, where again there is no place for either the affected people or for non-govt organisation and other independent experts.

Annexure 2

FLOOD FURY OF SUTLEJ: Dark Night in the Sutlej Valley

The Vedic river Shutudri has rejuvenated as Sutlej in modern times. Originating as Langchen Khabab from the southern slopes of Mount Kailash, it travels through the mystic region where once Bonpo flourished and enters into the Indian territory near Khab, a narrow man made cut into massive rock structure.

For about three hundred kms the river meanders untamed and then abruptly merges in its water. A phenomenon made possible by engineering feat, the Bhakra Dam *a temple of modern India*, due to which a huge artificial water body was formed drowning the town of Bilaspur and its fertile valleys. Over the years, the big reservoir known as Gobind Sagar has become a lake of sorrow. On the early morning of Aug 1, 2000 when it was still dark, Sutlej deposited more than 200 people with their material possessions in its deep waters. Before anyone could realize what was happening, a 15 m high tide of roaring river hit the first row of houses along the bank. It was followed by more torrents of water affecting homes even at a distance of 25 m from the river. The water sucked in huge concrete structures along the river.

The Hindustan-Tibet road (NH 22) takes a right turn from Sainj on the left bank of Sutlej River. One after another the bridges over Sutlej were conspicuously missing. Nogli, that was yet to recover from the flash flood of 1997, bore the brunt of the Sutlej. Signboard and flags of Ratan Guest House on the edge of road stood witness that there existed a building. This small township, that caters the need of remote hill villages, was saved by a patch of trees and by an embankment on the sides of the Nogli Khad where it meets the Sutlej. On both sides of Nogli town the NH 22 was sinking and may slide down into Sutlej in near future.

After 5 km abruptly the frontal view of Rampur appears that was once the capital of the princely state of Bashahr, perhaps the largest in area among the Shimla Hill States. At present the right bank of Rampur comprises of Broh (Bron) and Jagatkhana on the left bank is the main bazaar. Rampur is famous for Lavi Fair that reminds of socio-cultural and trade relations with Tibet. The gushing waters of the Sutlej washed away all the newly built concrete structures of Broh and Jagatkhana filled many of them with silt. Timely warning from the people up in the Sutlej valley saved hundreds of lives. However, the river carried a number of people who could not be woken up at midnight to Govind Sagar. All the bridges linking the two sides of Rampur town were washed except one.

On Aug 12, near Gandhi Park in Rampur, a building stood on a loose mass of soil that was constantly hit by the river current. After six days the structure at that site splashed the river water with a thud diverting course of Sutlej towards Jagatkhana. Six people died and several houses were damaged. Construction of buildings in the river basin is a wrong model of learning for the common people. Rampur bazaar and the old village of Nirath are an example of traditional wisdom for a construction site. Will modern engineers learn any lesson?

Rampur to Wangtu: A Death Trap From Rampur to Wangtu the area is very fragile and valley becomes narrow, both sides steeper in gradient. In most of the year this stretch of land turns brown, only in July-Aug it has greenery. Extensive felling of trees started as early as 1850 in the Sutlej valley by British contractors who took benefit of the poor condition of the hill chiefs. The deforestation and consequent erosion had never stopped since then. It is important to note that wherever there were small patches of trees either on the banks of river or up in the hills the erosion is minimum.

Over the past several years a number of HEPs had come up in the stretch between Rampur and Wangtu. Schemes at Ghanvi (22 MW) and Bhaba (120 MW) are complete. For the last decade or so work on a 1500 MW scheme, the Nathpa Jhakri HEP, is going on. It is one of the largest HEPs whose cost may escalate beyond Rs 100 B. Even the cost of much controversial and 260.5 m high Tehri Dam is below that.

Thus nearly 80-km stretch of valley is under much human pressure, causing ever more damage to its ecosystem. Work is in progress on three more HEPs, Baspa-I (150 MW), Baspa-II (300 MW) and Karchham-Wangtu (600 MW¹).

There is a great danger in the valley due to seismic changes, induced or natural. It has been totally ignored by the planners of HEPs. These human activities are crucial to estimate the damage caused by natural disasters that are recurring every three-year in this small region between Rampur and Wangtu.

Nathpa: 1993 During July-Aug '93, a landslide from the right bank of Sutlej obstructed the flow of Sutlej near Nathpa, 185 km from Shimla, creating an artificial lake. Water of the lake entered through the outlet of 120 MW Bhaba HEP causing it heavy losses. After great effort

¹ Note that till almost early 1999, the KWP was to be a 600 MW project. At some stage it became 900 MW and now 1000 MW. How this installed capacity kept going up and if this capacity if viable can be assessed only if the full hydrology and other crucial details are made public. The figures given in the EIA a farce as shown above. And if these are the basis for the whole project, then that same description is applicable for the project too.

the rocks blocking Sutlej were blown up by dynamites making passage for dammed up water. During this period people in the low lying areas of the Sutlej below that spot spent sleepless nights. A central govt team assessed the loss at Bhaba HEP around Rs 2.5 M daily due to stoppage of power generation.

NJPC had already started work at the site of the 1993 landslide. It included massive tampering, externally as well as internally, with the rock structure. Presently the base of the 60-m high dam was being laid there to divert the Sutlej into a tunnel. However, it has been considerably damaged in the flash flood.

Panvi, Andhra and Nogli: 1997 On the evening of Aug 11, 1997, the Panvi Khud, a small nullah originating up in the Shatul Ghati brought tons of debris with it and blocked the Sutlej for several days. Six major bridges left no trace cutting the Kinnaur from rest of the country and eroding about 6 km of the NH 22. Big boulders and gravel buried the small habitation and 11 persons at Wangtu. A big lake was formed at Wangtu due to blockage of the Sutlej. For several days people made their way to Kinnaur by boat.

On the same night at 8 pm the Andhra Khud flowing on the backside of the same mountain range washed away a roadside township of Chirgaon with more than 300 inhabitants. A considerable loss did occur on the same night by the Nogli Khud originating from the same ridge. Andhra HEP (17 MW) and Nogli HEP (2.5 MW) suffered heavy losses and did not generate electricity for a year.

Mt. Kailash: 2000 The third incident that brought a high column of water on Aug 1, 2000 occurred far away at the origin of Sutlej in Mt. Kailash, the abode of Shiva. However, the major loss took place in the region between Rampur and Wangtu. The damage may run into several hundred crores as direct loss to the Nathpa Jhakri HEP. The other major loss is the delay in completion of the project that is estimated about one year. Each day the state would loss Rs 50 M if there is delay in the completion of the project by Dec 2001².

Sutlej laughs at the big hoardings that enumerate the safety measures taken under this scheme. Authorities claim that this project has one of the world's largest silt trap arrangement. How is it functioning today is a big question. Engineers today are reluctant to talk about such claims. The whole area that used to be noisy by heavy machinery and large number of work force from distant places, working under extremely hazardous conditions, bore a deserted look after the flash flood.

Dr R. S. Pirta, Department of Psychology, Himachal Pradesh University, Shimla 171005 (Discussion on <http://www.mtnforum.org/apmn/wk2.2.htm>, Feb '01)

² The NJP is still incomplete in June 2003.

Flood Control Plan in the River Mahanadi – Some Facts and Concerns

Orissa Flood Advisory Committee 1928 The Orissa Flood Advisory Committee in their report in 1928 had mentioned, "In a deltaic area there must be flooding: it is nature's method of land formation and any efforts to prevent it are doomed to fail at the outset". From this report our planners need to learn and give a second thought while planning for the flood control system for the coastal Orissa.

During the British rule one British Engineer Mr. James Shaw had prepared a Master Plan for the drainage of Mahanadi delta area. During that time the Engineers were laying emphasis for effective drainage rather than for construction of embankments in the Mahanadi river system. The report of the Committee on agricultural productivity in Eastern India 1984 also mentioned, "in the coastal region of Orissa drainage has to be given top most priority".

Hirakud Dam As per the report of Irrigation Commission of India 1972 the rate of siltation in Hirakud reservoir is much higher than it was anticipated at the time of planning. At this rate Hirakud dam may become ineffective in another 25/ 30 years. Because of this reason, our Engineers, Planners and Leaders mostly from coastal Orissa having the 'Big Dam Mindset' are becoming more desperate for the second dam in the river Mahanadi.

Tikarpada Project After the severe flood of 1961 the planners headed by Biju Patnaik – the then Chief Minister planned for the second reservoir along river Mahanadi near Tikarpada. This dam was supposed to be completed in two phases. Initially the height of the dam would have been 355 ft. Since Sonapur town was at a height of RL370 (15 ft above the planned reservoir level), the town would not have been submerged. However, the reservoir level was supposed to be raised to RL 440 ft in the second stage and then the Sonapur town would have been beneath 70 ft under the reservoir. If this project is taken up the entire Boudh district, Sonapur district, Athamallik Sub Division and a large part of Sambalpur will be submerged. The reservoir area will be around 3000 sq km (Reservoir area of Hirakud Dam is 737 sq km).

In 1964, the foundation stone for Tikarpada Dam was laid by Pandit Nehru. Since the people were completely in dark about the devastating scale of the Tikarpada project, govt could go ahead for laying the foundation stone. But once the people were aware about the displacement it would have caused, there was a strong resistance and the project could not take off.

Manibhadra Project After the unprecedented flood of 1961 the next severe flood in the river Mahanadi occurred in 1982 when J. B. Patnaik was the CM. As

usual, during this flood also the CM and all the senior govt officials initiated discussion for the second reservoir in Mahanadi and this time they proposed it near Manibhadra, in the Gania police station of Nayagarh district. If this project is taken up it is apprehended that the Tikarpada gorge and Satakosia lake will be submerged, apart from displacing a large population from Boudha, Sonapur, Angul and Sambalpur districts. The detail report of this project has not yet been made public. Even though ours is supposed to be a democratic govt such important informations are not shared with the people.

Dams on the tributaries of Mahanadi Govt has been planning to build several other dams along the river Tel, Utei, Udanti, Suktel, Ang, Ib etc. But most of these dams may not be useful for the flood control in the coastal Orissa. Most of those reservoirs will be full with the rainfall of just a few days during July and Aug. Hence, if there is heavy rain during second half of Aug or Sept those dams will not be of any use as we have found with the Hirakud, Indravati and other projects. Such reservoirs may reduce flood at best during July.

For the politicians it becomes quite vote catching if they promise for big dams to control floods in the coastal Orissa. However, most of them are not aware about whether technically those dams will be appropriate and also socially if they are desirable at all.

Living with the flood If there would not have been any dam or embankment the floodwater would spread over a very large area and the devastation will also be very less. Such floodwater will also bring silt and over the years they will fertilise the lands in coastal Orissa. In this process there will not be any problem of drainage. Villagers will have to evolve different means to cope with such floods. For example, the houses will have to be made flood proof and the village sites will have to be made at very high elevations. Transport system will also comprise of partly waterways during rainy season. The roads will have to have many more culverts and bridges so that there will not be any obstruction to the flow of floodwater. Water and flood resistance crops will get priority. Instead kharif crop, winter and summer crops will have to be given priority.

If our planners and leaders give some thought to this problem, I am sure it will be possible to find many innovative and appropriate ways to tackle the flood problem of coastal Orissa. It will not be necessary to go for several inappropriate dams and displace millions of people in the name of controlling flood in the coastal Orissa. The need now is to change the mindset of the leaders and planners. If we attempt to control flood through Dams and Embankments, we are bound to land into few more serious and complicated problems. Let us try to find out alternative ways for life with the flood.

JAGADISH PRADHAN, Sahabhazi Vikash Abhiyan

Threat to Local Water Systems in Western UP

Warning bells have started ringing for Western UP spread in about 20 districts in the context of the threat to the natural water resources. With 80 % ponds and *johads* either dead or encroached the once water abundant area of *Doab* is facing serious groundwater depletion. This fact has been brought out by a research study on Census of Water Resources in district Meerut conducted by Janhit Foundation a local NGO working towards water conservation. According to Anil Rana, President of the organisation "last year's drought conditions motivated him to undertake this study project which was supported by Centre for Science and Environment. There was no scientific record as to how many ponds and wells once existed in the revenue records and how many infact exist physically today" laments Rana. According to the study out of 2086 wells present today only 545 have water. The remaining wells have either been covered or are being used as garbage bins or borewells for waste water of the toilets.

Entitled *Panni Ghano Anmol* (Precious Water) the study gives a picture of how much population of a particular village depends on the number of tubewells and natural water resources. Water table of all the

663 villages of the district paints a sad picture of the groundwater depletion of the district with an average decrease of 5 feet annually. It is shocking that the district had 3062 ponds with only 1944 left. Even these remaining ones have 1543 ponds either as dry or encroached. Concrete structures or agriculture fields are found over the pond lands. Despite the Supreme Court's order of 2001 to de-encroach ponds and other natural water resources the administration has hardly made any efforts to get the ponds free from encroachment. With only a handful of villagers who enjoy political patronage or have muscle power the 'handful few' is bent upon destroying the natural water resources resulting in a serious groundwater crisis. The study recommends adoption of alternate cropping system and suggests lowering of sugarcane cultivation that covers 0.126 M Ha of agriculture land in Meerut district only. With green revolution centered in this area, the fertility of the soil has been badly hit by overdose of fertilisers and pesticides. The study recommends adoption of organic farming and increase in animal husbandry. According to Avadhpal Singh, convener of Natural Water Resources Unit of Janhit Foundation "we have already enrolled 500 *Jal Bhais* and *Jal Behans* (water activists) to revive and recharge the dead natural water resources here and are motivating the farmers to be more water conscious and skilled managers of water resources".

Janhit Foundation

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CAG slaps a scathing critique on Maharashtra Irrigation Dept

Even as we hear about Maharashtra govt's intentions to open up irrigation for private participation, this excerpt from the latest CAG report for Maharashtra (Civil) for the year ending March 31, 2002 unleashes a scathing critique of Maharashtra irrigation dept.

Maharashtra has a total cultivable area of 18.20 M Ha of which 8.40 M Ha (46 %) can be brought under irrigation. By the end of 2001-2, irrigation potential of 3.804 M Ha was created from 52 major, 205 medium and 2426 minor irrigation projects against which the utilisation was only 1.298 M Ha, being 34.12 % of the potential created.

Incomplete projects As on 31 March '02, there were 117 incomplete projects in which Rs 32.58 B were blocked. Of these, 6 projects amounting to Rs 643.4 M remained incomplete for 5 - 10 years, 2 projects amounting to Rs 245.5 M remained incomplete for 15 - 20 years and 2 projects amounting to Rs 481 M remained incomplete for over 20 years.

No details on 15 projects Details in respect of 15 projects involving Rs 1.92 B are simply *not available*.

Poor utilisation of irrigation potential The report points out that the dept failed to achieve any noticeable impact in the utilisation of irrigation potential. Budgetary and expenditure control in the dept was grossly deficient; large number of projects were languishing for long periods and Govt was yet to evolve a clear strategy to complete the projects where heavy investments have already been made. Out of 32 major & medium projects, 22 projects were still under execution, with a cost overrun of 10 times the original cost. Though the irrigation potential created is less than the targeted potential, yet the utilisation was far less than the potential created.

(Thousand Hectares)

Year	Size	Created	Utilised	% Utilised
98-'99	51 Major	2072.16	845.46	40.80
	196 Medium	559.88	164.98	29.47
	2108 Minor	784.44	214.80	27.38
	Total	3416.48	1225.24	35.86
99-'00	21 Major	2095.70	898.27	42.86
	198 Medium	569.34	176.20	30.94
	2263 Minor	835.44	211.61	25.33
	Total	3500.48	1286.08	36.74
00-'01	52 Major	2212.64	871.51	39.39
	203 Medium	600.32	183.26	30.52
	2323 Minor	892.56	243.02	27.23
	Total	3705.52	1297.79	35.02
01-'02	52 Major	2239	872	38.95
	205 Medium	624	183	29.32
	2426 Minor	941	243	25.82
	Total	3804	1298	34.12

Utilisation of potential has been almost same in spite of increase in potential due to lack of maintenance and

repairs. *This also suggests that while more area was being brought under irrigation, it was balanced out by the area going out of irrigation.* Proposal to repair and modernise the distributory system of 33 major, 135 medium and 2075 minor projects to improve its efficiency has been made only recently (Feb '02) at an estimated cost of Rs 13.79 B. This clearly indicates that maintenance and repairs of irrigation facilities were largely neglected by the dept.

Time and Cost overrun In respect of 40 projects test-checked, time and cost overrun was as under.

Category	Original costs	Revised costs	Time overrun	Cost overrun
16 Major	8.26 B	82.49 B	7-28 yrs	74.23 B
16 Medium	500 M	6.55 B	8-21 yrs	6.05 B
8 Minor	200 M	1.06 B	3-13 yrs	860 M

Only 16% potential created Out of 32 major and medium projects, in 22 projects potential created was less than 72% of the projected figure and these incomplete projects are languishing for 7 - 28 years. Only 0.112 M Ha (16 %) has been achieved against the projected potential of 0.687 M Ha after incurring expenditure of Rs 34.63 B. The original estimated cost Rs 7.46 B had in the meanwhile escalated to Rs 71.41 B (857 %). Rs 36.78 B would be further required to complete these projects. The resource crunch can further delay the projects with further escalation in cost.

Indiscriminate Market borrowings In order to utilise water of Krishna River by 2000, Govt created MKVDC in Feb '96. Four (VIDC, GMIDC, TIDC and KIDC) Corps were also created between March '97 and Aug '98 to mobilise resources. As against Rs 66.74 B required to be contributed by Govt till March '02, the actual contribution was only Rs 18.98 B (28.44 %). Consequently, the Corps resorted to market borrowing and raised Rs 94.54 B, which was far in excess of the original estimates and requirements. Due to delay in completion of the projects coupled with poor recovery of water charges, interest payment on borrowings could not be met. Govt as a guarantor, had to pay Rs 26.94 B during 1996-7 to 2001-2. Out of 25 major, 48 medium and 300 minor ongoing projects costing Rs 180.7 B entrusted to three Corps, only 5 medium and 105 minor projects have been completed as of March '02. Instead of giving priority to the 263 incomplete projects, 76 new projects were taken up by the GMIDC and TIDC spending Rs 3.28 B on these projects upto March '02.

Shelving 103 projects Despite unsound financial position, 20 new projects costing Rs 885.5 M were

sanctioned during 2001-2. This decision coupled with delay in completion of ongoing projects created huge liability amounting to Rs 296.94 B of which Rs 140 B belonged to low priority works. Consequently, Govt had to step in and stop further investments in projects where expenditure incurred was less than half of the cost. Three Corps had to shelve 12 major, 24 medium and 67 minor projects after spending Rs 27.39 B on them.

Nandur Madhmeshwar: Canals without Dams The Govt approved "Construction of four component dams at Mukne, Bhawali, Bham and Waki" and a new express canal of 128 kms from the existing Nandur Madhmeshwar weir to irrigate 43 860 Ha, at Rs 487 M (July 1979). The estimate was revised in July 1999 to Rs 5.78 B. It was noticed that even though expenditure of Rs 1.04 B was incurred on these 4 component dams, no water could be stored due to delay in their completion apart from various problems related to Project Affected Persons and forest land. Besides, the Dept continued construction of the new express canal and incurred Rs 2.11 B on it till March '02 without keeping pace with construction of component dams and ascertaining the availability of water.

Waghur Project The project was sanctioned in 1976 at a cost of Rs 122.8 M to irrigate 15 213 Ha. Only 70% headwork and 30% of canal work was completed as of March 02 at a cost of Rs 708.4 M. Even after 26 years the project could not be completed due to delay in rehabilitation of PAPs, objections from Ministry of Environment and Forest of GOI and paucity of funds.

Lower Wardha Project The project was sanctioned in 1981 at a cost of Rs 480.8 M to irrigate 44 150 Ha. The cost was revised to Rs 4.45 B in Jan 00. Only 73% headwork and 19% of canal work was completed after spending Rs 1.68 B as of March '02. No irrigation potential has been created after 22 years.

Tillari Project This interstate project between Maharashtra and Goa sanctioned in 1979 at a cost of Rs 452 M, was revised to Rs 4.88 B for creating irrigation potential of 236 54 Ha. An expenditure of Rs 4.3 B was incurred upto March '02. The work of gorge filling started in Nov '01 was obstructed by PAPs.

Mula project: Work based on unrealistic data The work of Wambhori and Bhagda (Chari) of Mula project approved in 1987 and 1988 respectively at an estimated cost of Rs 93.2 M was not undertaken due to non-availability of adequate storage of water in the dam constructed in 1972. In Feb '96 the above Charis were technically approved as piped canal considering the availability of estimated yield of 24 884 MCFT water at dam site. The work of piped canal was taken up for execution in Feb 00 at a cost of Rs 1.09 B and Rs 147.4 M was spent as of March '02. Scrutiny of records revealed that actual yield at dam site observed during last 20 years was only 21 178 MCFT. Thus, execution

on the basis of estimated yield of 24 884 MCFT instead of actual yield of 21 178 MCFT at an investment of Rs 1.09 B may result in poor rate of returns.

Adverse effect on yield of Jayakwadi project There was a provision of 115.5 TMCFT of water for upstream extraction for the Jayakwadi major project completed at a cost of Rs 2.43 B in 1986. The Govt, however, without considering this aspect sanctioned new irrigation projects that would utilise 156.5 TMCFT water from the catchment area thereby reducing the availability of water to the Jayakwadi project to 41 TMCFT, adversely affecting the irrigation potential in Jayakwadi project. Govt (Nov '02) accepted the shortage of water in Jayakwadi reservoir and stated that it would be compensated by taking new projects in downstream side of Jayakwadi project. Reply was not tenable, as construction of projects in down stream will not solve the problem of water shortage in Jayakwadi.

Lift Irrigation Schemes contravene Govt decision To solve drought situation, during 1971 - 78, a programme of 356 LIS was undertaken. It was found later that the schemes were not effective due to very low irrigation potential, continuous losses, high cost of maintenance, etc. Govt in 1978 took a decision not to take up LIS in future. But, during 1982-3 to 2001 Govt sanctioned 42 more LIS costing Rs 5.82 B. Further LIS have become costlier due to higher tariff for electrical energy. Test-check of Vishnupuri project in Nanded district, revealed that the Govt had to sustain extra financial burden of Rs 151.9 M during June '99 - March '02, due to levy of electricity charges at industrial rates by MSEB.

Only 8 out of 24 CAD projects completed CAD Programme was introduced from 1974-5 to ensure better and more efficient utilisation of the potential. The programme covered 24 projects with an investment of Rs 14.16 B. Out of 24 projects with projected potential of 2.026 M Ha, CAD works were completed only in 8 upto March '01. As against potential of 1.892 M Ha, field channel works were executed on 1.245 M Ha only thereby adversely affecting the utilisation of potential created. The shortfalls in CAD works was attributed by Govt (May '02) to (i) priority given to storage building in Krishna Valley, (ii) paucity of fund and (iii) rise in establishment expenditure.

21 schemes incomplete after spending Rs 252.6 M Out of 57 minor schemes taken up under the programme for improvement of water distribution for crop diversification, 36 schemes could be completed at a cost of Rs 251.5 M by Oct '98. No funds were made available thereafter to complete the remaining 21 schemes where Rs 252.6 M had already been spent. In 36 completed schemes, desired objectives were not achieved due to defects in pipeline system noticed just after completion of schemes (pipes broken).

Compiled by Himanshu Upadhyay

RIVER LINK NEWS**HOW OPPOSITION IS MOUNTING****Planning Commission lashes out**

Planning commission member Som Pal said that 62 M Ha of additional ayacut could be created by investing Rs 1150 B in the next 5 - 8 years by working out irrigation options. Rs 1150 B alternative plan includes Rs 770 B for pending major and medium irrigation projects, Rs 135 B for minor irrigation project and Rs 245 B for water recharging. (INDIAN EXPRESS, NEWSTIME 170603, 240803)

Chhatisgarh opposes riverlink

Chhatisgarh CM opposed the riverlink plan saying that the plan doesn't have any benefits for the state while it would have adverse impact on the land, forests and people in the state. (DAINIK BHASKAR 200703)

Maharashtra sees no benefit

Maharashtra CM said prima facie the state was unlikely to benefit from the Center's ambitious project of inter-linking of rivers. CM told the delegation, which met him at Mantralaya here, that the state govt was studying whether water can be made available to drought-affected areas by inter-linking of rivers. (MID DAY 120603)

Journalists question wisdom of Riverlinking Faced with a barrage of questions from a gathering of Indian and South Asian media persons on the Indian govt's proposal to link its major rivers, the Chief Engineer of Water Resources Ministry defending the project, termed it as "only a concept still and not a project. "There will be more food for the poor, more irrigation potential especially for marginalised subsistence farmers and a huge generation of jobs that will have a positive socioeconomic impact", he said, speaking at a meet on water and sanitation for the poor organised by the Geneva-based Water Supply and Sanitation Collaborative Council and hosted by the International Crop Research Institute for the Semi Arid Tropics. The govt viewpoint drew flak from journalists, NGOs and academia assembled at ICRISAT. "None of the feasibility and impact studies on this gigantic project have been put in the public domain", said Prof Jayanto Bandyopadhyay of the Indian Institute of Management at Kolkata adding his concern that it was a 'threat to science' that govt appeared to brook no discussion on the matter. "Nepal feels it should have been included in the feasibility discussions regardless of how preliminary these might be," said Suvecha Pant, Science Editor of the Kathmandu Post. "The Sunderbans wetlands, a UNESCO World Heritage site, is already under threat due to reduced flow into the mangroves from barraging the Ganga at Farrakka in W Bengal," added Mostafa

Kamal Mazumdar, News Editor of Bangladesh's New Nation, "We are naturally worried." "The 2002-estimate of Rs 5.6 trillion is two and half times our annual tax collection, double our present foreign exchange reserves and even higher than the country's GDP. How does India afford money of this magnitude? asked Aniket Alam of The Hindu. Bittu Sahgal, prominent wildlifer and editor of Sanctuary magazine, called Mr. Prabhu's attempt at roping in NGOs as "a snow job." (Planets-voice.org 140703)

River Network opposes The Indian River Valley Network national convener, Kumar Kalanand Mani, has said the Govt's plan to network the rivers would lead to constant confrontations among the riparian States. He said the experience so far had shown that water was a key issue of contention between States. The stand-off between Karnataka and Tamil Nadu over the Cauvery waters was a classic case. He feared that several such confrontations would be the order of the day if the proposed linking took place. The federal structure of the nation would be at stake. He also warned that the linking would sour India's ties with neighbours like Bangladesh and Nepal because it would affect their water availability. The project was by far the largest project India had ever seen. By diverting the rivers off their natural courses, the ground water in the areas close to the rivers would be depleted. The damage to the environment and human habitats due to the huge earthwork could not be estimated. Millions of people would lose their current access to water. Rivers, being a natural resource, was the collective resource of the communities living around them, and hence the Govt had no right to manipulate with these resources, he added. (THE HINDU 250603)

Linking rivers will lead to increased debt The two day Rashtriya jal Sammelan on 29-30 May at Kancheepuram rejected the proposal of interlinking rivers as it will lead to increased debt. The conference passed a resolution saying that interlinking of rivers would lead to large-scale displacement and cause irrevocable damage to riverine ecologies and forests. Former CEC T N Seshan said rainwater harvesting would improve groundwater table and advocated the desilting of all tanks and ponds. (THE HINDU 310503)

Texas showing interest? Texas State in US wants to partner India in implementing its Rs 5.6 trillion plan for interlinking major rivers. Texas Secretary of State announced this during a meeting with Suresh Prabhu, chairman of the task force, who is touring the United States. It was not clear what would be the nature and scope of the partnership. The Texas Secretary compared the plan with the Texas Trans Corridor vision. (Rediff.com 270603)

DAMS

RSD Workers block traffic Employees of the Ranjit Sagar Dam, irked over the non-payment of salary, blocked the Shahpurkandi Dharkalan road on June 21. They also had to stage demonstrations in Feb to get the salary for Jan and Feb 03.

➤ **Displaced promised employment** The Punjab CM has agreed in principle to provide jobs to the remaining one member each of the ousted families of Ranjit Sagar Dam, whose land and houses had submerged in the dam. These families belong to Dalhousie tehsil bordering Dhar subdivision of Gurdaspur district. HP Education Minister stated this. (THE TRIBUNE 220603, 030803, see DRP May-June 2003 p. 22)

Tehri Town inundated The water level in the controversial Tehri reservoir rose to a dangerous level of 642 m inundating several low-lying areas of the historic Tehri town. This submerged the only bridge connecting Tehri town with rest of the world.

➤ **Committee for Tehri project** The Center has constituted two committees for monitoring environmental and rehabilitation issues in Tehri project. One is an inter-ministerial review committee. It includes secretaries of MoEF, MoSJ and MoWR.

➤ **No R&R even after two decades in Tehri** The Uttaranchal State Minister for Industries said that even after two decades, Tehri dam oustees are waiting for just rehabilitation. Though UP Govt was assigned the responsibility of working out proper rehabilitation for the dam oustees with the assistance of the Central Govt, due to lack of coordination among the concerned depts, it failed to work out a proper rehabilitation policy. Even after the formation of the new State, the proper rehabilitation of the dam oustees could not be achieved. According to Harish Kumar, a dam oustee, the State minister and political leaders should pressurise the Centre to implement the Hanumantharao Committee Recommendations in Toto, rather than making announcements on rehabilitation packages. The HRC recommendations were accepted by the Central Govt in 1997. According to the recommendations, all children of the oustees who had attained the age of 18 years as on July 18, 1990 should get an exgratia grant of Rs 75 000. But the rehabilitation policy of the State had reduced the grant to Rs 33 000 and changed the age to 21 years, the HRC had also recommended an ex gratia grant of Rs 150 000 to the married sons of the oustees, but this clause does not find mention in the State policy. (DAILY EXCELSISOR 220503, THE TRIBUNE 050603, RASHTRIYA SAHARA 100603)

Samar Sarovar Dam washed away The controversial Samar Sarovar dam in Pratapgarh district (Rajasthan) got breached within the first showers of monsoon. The villagers had alleged that the widespread corruption of Irrigation dept and the use of the sand from the riverbed were responsible for the breach. In 1998, the former MLA of Thanagazi pushed the project ahead and the

state govt had allocated Rs 4.2 M. Even after one year the work on the dam had not started, and in Nov the construction work with Rs 5 M allocation commenced under the supervision of Junior Engineer of Irrigation dept. However, the corrupt contractor got him transferred and the new incumbent allowed him to flout the norms. (RAJASTHAN PATRIKA 300603)

Tokra Dam fissure raise alarms On Aug 2 a 6-inch fissure in the wall of Tokra dam, 30 kms away from Sirohi on Sirohi Revdar road was noticed. (RAJASTHAN PATRIKA 050803)

Six Rajasthan dams damaged Torrential rains for two consecutive days lashed the North - Eastern parts of Rajasthan. Six dams in Alwar district were either breached or washed away, but the Irrigation dept didn't loose time to point the accusing finger to the controversial earthen dam at Lava Kaa Bas, built on rainwater drain of the Ruparel river in Thana Gazi tehsil by Tarun Bharat Sangh. A TBS team from Jaipur, led by Ambuj Kishore, which visited the spot to make an assessment, attributed the breach to the collapse of six dams built upstream this summer. He said that what the dept is not talking about is the ruptures caused to seven dams – Khari Johad, Banna ka Johad and Khandiwala Baba ka Johad in Todi Nijara village, Balai ki Johad and Sankada ka Bandh in Mundiawas, Ghanka dam in Ghanka and Phuta Bandh in Bhangdoli – upstream of the Lava Ka Baas structure were responsible for its collapse. (THE HINDU 120703, 160703)

Nagalpur Dam falls apart In the first round of the rainfall, Nagalpur Dam, a minor irrigation Dam 20 kms away from Rajkot breached. The District Collector said that the Dam couldn't withstand the water since the wild rats had weakened the Dam wall. (Rediff.com Gujarat)

Kotla Dam washed away On Aug 15 following heavy rainfall Kotla Dam in Nuh block got breached. Nearby villagers tried to repair the fissure, but failed due to incessant rainfall. On Aug 16 the waters from it inundated 240 Ha of land and 80 Ha of crops. It is to be noted that just 15 days ago, on 22 July, a fissure in the Dam was noticed. (HARIBHUMI 180803)

Tungbhadra Canals Committee to find solution The govt has agreed to form a technical experts' committee to find a solution to the frequent breaches in Tungbhadra left bank canal. According to the officials, the left bank canal alone had breached more than 160 times since the canal was constructed. Funds released were not sufficient for maintenance and to tackle the problem, they claimed. (NEW INDIAN EXPRESS 280803)

Four leaks in Ajwa Lake near Baroda On Aug 24, the administration was put on high alert following leakages at three places in Ajwa reservoir. Over 200 families had to be evacuated from Baroda and Savli taluka after 18 lakes overflowed. (THE INDIA EXPRESS 250803)

HYDRO PROJECTS

Shelving Subansiri Dams demanded A public meeting at Gogamukh on June 15 demanded shelving of Big dams like 2000 MW L Subansiri dam. The meeting also observed that the Subansiri Dam Project was sought to be built in a highly seismic area with 116 m high dam. The rock formation in the proposed site is also sedimentary, it observed. The environmental impact assessment was also found concocted, as it had not focussed on the impacts in the downstream areas.

➤ **CCEA clearance** The CCEA on Aug 23 approved the L Subansiri in Arunachal Pradesh and Seva HEP in J & K. (ASSAM TRIBUNE 160603, NEWSTIME 240803)

Loktak HEP faces PIL and agitation Environment Protection Committee has filed a PIL to save Loktak lake and Keibul Lamjao National Park. The committee in its PIL pleaded that the gates of Ithai barrage be lifted for five years, so that phumdi and silts can be removed from the Loktak lake. It also pleaded for forming a ring bund on the periphery areas of Keibul Park.

➤ Taking serious note of entry-exit gate erected at Ithai Barrage, JAC appeals to Loktak HEP Authorities to remove the gate immediately and facilitate the transportation of goods and public transportation. JAC says that the route not only serves as an inter-district highway but a transit point of Ithai, Laikhang, Warukok, Lairok and Nongmaikhang villages. Demanding the removal of gate by May 12, the JAC said all vehicles of the project authorities would be restricted from plying on the route in addition to agitation against the project authorities. (THE IMPHAL FREE PRESS 080503, SANGHAI EXPRESS 090503)

Kol Dam Displaced block traffic Work on the Kol Dam was obstructed on May 14, as a large number of persons from 12 villages, rendered homeless and landless due to the dam, blocked the traffic for 12 hours at Ropa village. The NTPC that was executing the project through private companies, was flouting the clauses of the agreement with the displaced villagers. They said that affected farmers had submitted a charter of demands to the CM on April 17, but nothing had been done so far. (THE TRIBUNE 150503)

Baspa Spelling doom for HPEB The 300 MW Baspa HEP may spell doom for the state electricity board. The board will have to purchase the power generated in the project at an exorbitant cost. As per sources in the Board, the total loss on account of purchase of power from the private sector project during the current financial year alone will be Rs 980 M, thanks to the terms and conditions of the supplementary PPA signed by the Board with the J P Industries, on Feb 28. The supplementary PPA pegs the final cost of the project at Rs 15.5 B (subject to the dollar variation). Thus the power from the project will cost the board Rs 3.36 per unit. Further the resources document prepared by the board indicates that the net return from the power sold

to Delhi will be Rs 2.2 per unit. The project has been designed to generate 1272 MU annually and as such the board will lose around Rs 1250 M every year. The most damaging clause of the PPA is the provision for maintaining the Escrow account in which the proceeds from the sale of power will be deposited in two parts. First part of the account will take care of the revenue corresponding to 12% free power and the second part of the account will take care of the revenue generated from the sale of 88% power, to be paid to the company for discharge of its liabilities. In case the amount in the second part was not enough for meeting the debt repayment obligations, the shortfall will be met by transferring the necessary amount from the first part. The pertinent question is why the govt agreed to buy power at such high rates, signing PPA in haste, bypassing SERC. (THE TRIBUNE 290503)

HP Unhappy with Central HEPs The HP Govt has decided to entrust the 439 MW Rampur HEP to SJVN. The CM said the state should get the maximum benefit from its water resources and it should have at least 25% equity participation on the pattern of Nathpa Jhakri HEP. The Union Minister for Power rejected the request from the HP govt, seeking equity participation in the 2051 MW Parbati HEP, 800 MW Koldam HEP and other large HEPs, as it would not be possible to renegotiate the ongoing projects. Equity participation would be considered in future projects. (THE TRIBUNE, BUSINESS LINE 030603)

Larji CAT Plan A Rs 150 M Catchment Area Treatment plan has been approved for execution at a meeting of forest officials of Mandi and Kullu districts and engineers of the Larji HEP. The total catchment area identified for conservation and plantation over a period of 10 years is 4921 sq km of which 700 sq km is the most vulnerable and will be taken up immediately. (THE TRIBUNE 110503)

Sawalkot to be reappraised The govt has decided to seek technical reappraisal of the project report of Rs 75 B 600 MW Sawalkot HEP by an independent authority. This decision was taken at the meeting of Board of Directors of J&K Power Development Corp. "Before taking up mega projects, which require high investment and involve high generation cost, we must be sure of the actual cost that is going to have bearing on the power tariff," CM said adding, the techno-feasibility of the project must be reassessed. The previous govt had entered into a contract with NCC led Norwegian-German consortium in April 01 for the project. (BUSINESS LINE 130703)

34 HEPs held up due to disputes About 34 HEPs with a total installed capacity of 7225 MW are held up due to inter state disputes in different parts of the country, the Lok Sabha was informed. (THE HITVADA 220803)

Baglihar HEP: Centre refers to ADB The J&K govt is happy with the center's decision to refer the financing of the 450 MW Baglihar HEP on Chenab river to the ADB. The project in which the state has already invested Rs 16 B needs another Rs 22.1 B for completion. According to the official sources, per unit cost of the power would be Rs 3.67 in the first year.

➤ The Indian Banks Association has decided to provide Rs 10 B soft loan to J & K govt to complete the Rs 46 B Baglihar HEP.

➤ **Workers allege exploitation** Baglihar Workers Union has alleged exploitation and said that recent agreement between the management and the agitating workers was proved to be a farce. The Union said that workers of Baglihar project are worst affected due to sheer exploitation and suppression at the hands of management. They are not being provided proper facilities and Labour dept has failed to safeguard the rights of the Labour. He pointed out that in the first stage, about 8000 workers are engaged but over 90 % of them are from outside the state. The local youth have been deprived of their right to work at the project. He urged upon the Govt agencies to intervene in the matter and stress upon the Jai Parkash Industries to employ local talent including labour and semi - skilled or skilled workers. (THE ECONOMIC TIMES 150503, DAILY EXCELSIOR 130603, BUSINESS STANDARD 040803, see DRP July-Aug 2003 p 22, Labour File)

Indira Sagar Project: Floodwater enters powerhouse

Following the leakage in intake gate and draft tube, floodwater entered the powerhouse of Indira Sagar project on July 28. The intake gates at ISP have been installed by Triveni Infrastructure Pvt Ltd two years ago. When the floodwater started entering the powerhouse complex, the flow of water was still below the danger level. While the normal floodwater discharge is assumed at 27 000 cusecs, it was just 14 000 cusecs and still the water gushed into powerhouse. While officials put the figure of loss to machinery at Rs 1 B to 1.5 B, NHDC director said that some it was around 5 M. Requesting anonymity, certain officials said that the leakage was due to irresponsible attitude of contractors and project authorities. Union Minister of State demanded an inquiry. On Aug 7 at a high level meeting Union Minister for Power, NHPC chairman, and NHDC chief engineer reviewed the situation. Union Minister of State for Petroleum alleged that even if the leakage is repaired and the project starts generating electricity as scheduled, it is highly doubtful whether the electricity will reach the people, since the work on transmission line has not yet been undertaken. (NAI DUNIYA 300703, 020803, 060803, DAINIK BHASKAR 060803)

NEWS FROM THE NARMADA VALLEY

Clearance for raising SSP height On May 14, the NCA gave the clearance to raise the dam height of the controversial Sardar Sarovar Project in Gujarat from the present 95 + 3 m humps to 100 + 3 m humps, enlarging the area under submergence this monsoon. The permission comes a year after the Gujarat govt was allowed to raise the dam height to 95 m last year. NBA leaders said the decision spelt "disaster, destruction and human tragedy" for thousands of tribals and farmers in Narmada valley. Even while Maharashtra is yet to complete the mandatory R&R of displaced people, the R&R subgroup in its meeting accepted the state's "undertaking" to do so before the monsoon. The decision does not address the basic questions of adherence to court and tribunal orders, constitutional and democratic norms. The decision was "a clear violation of the spirit of the SC ruling of 2000 and the award of the NWDI". (THE HINDU 150503, 200503)

Prayas wants Maharashtra to exit SSP Maharashtra govt would do well to exit from the SSP and cut its losses instead of squandering millions of rupees on it, says reputed energy NGO Prayas. With no clear economic benefits accruing, Maharashtra govt should consider exit and seek recovery of Rs 5 B invested. Girish Sant and Suhas Paranjypte walked out of Maharashtra state govt's SSP study Group on May 23, saying "Even after two years from its constitution it has not been able to progress beyond the initial stage of trying to collect essential data because of reluctance on the part of project authorities and Maharashtra govt to make essential data available to the Group. (THE FINANCIAL EXPRESS 260503)

Narmada children assert their right to study Saheb, Sardar Sarovar waters will drown my school this year. Would you please do something? Sonarsing Vasawe of Manibeli village asked Primary Education Dept Joint Director. The officer had no answer for Vasawe and his friends from Jeevan Shalas run by NBA in Nadurbar district. Batesing Pavara, a teacher with one of the Jeevan Shalas complained to the joint director that Zilla Parishad teachers are not reliable at all. They never show up except for the mandatory flag hoisting on Aug 15 and Jan 26, he alleged. (THE INDIAN EXPRESS 170703)

Visit of the eminent citizens An Independent team of 3 people, Shabana Azmi, L C Jain and Swami Agnivesh visited the Narmada Valley on 9 - 10 July 2003. On July 11, the team put forward the situation before the CM of Madhya Pradesh with their suggestions and recommendations. They emphasised that improvement specially with the functioning of the Grievance Redressal Authority, accurate assessment of families affected, preparation of "developed" lands for rehabilitation 6 months before submergence etc were found wanting. They also strongly recommended

strengthening the Gram Sabhas to facilitate the assessment and rehabilitation process. They asserted that the MP govt should not have agreed to the increasing of the height of the dam without just resettlement and should not agree for such an increase in future. In reply to the Team's suggestions, CM called for a larger meeting on July 27. (NBA PR 210703)

Submergence and State repression As the increasing submergence waters of the Narmada have entered in the Maharashtra villages, the state govt sent police to displace the people forcibly and demolished their houses, without resettling them according to the law. The people in the Chimalkhedhi resisted the brutal state repression. The floodwaters started rising since July 26. Water level at Dam site on 26 midnight was 100.29 m. On July 27 morning the discharge from Tawa was 150,000 cusecs.

➤ **July 28: arrests** Seventy four people including 11 women and a number of children including activists Pratibha Shinde and Chetan Singh were arrested from Chimalkhedhi village. In the capital of Madhya Pradesh, at the meeting between eminent persons Shabana Azmi, L C Jain, Swami Agnivesh, Andolan representatives and the CM, it was agreed that the Gram Sabhas should be involved in the R&R process, especially the drawing up of the affected persons' lists and identification of agricultural land for R&R. Thus it was decided that detailed documents of Project Affected Persons' lists, details of land acquisition, agricultural land available with the govt for R&R, entitlements of people according to NWDTA etc will be sent to each Gram Sabha and a special Govt Order be passed directing the Gram Sabhas to send their detailed observations on the issues and documents. The eminent persons stressed that till this process was completed the govt should not give the nod to any further increase in the height of the dam.

➤ **Aug 3: affected storm collector's office** Hundreds of adivasis in the SSP affected villages flocked at the Collector's office in Nandurbar district. Strongly protesting against the arrest of Noorji Vasave and other adivasis they spoke before the officials and police with anguish and determination demanding their release. (NBA PR 290703, 030803)

Ancient temple Hafeshwar goes under water Gujarat administration turned its face away even as the waters rose around the archaeological site Hafeshwar. While the ancient temple of Lord Shiva was engulfed by the rising waters due to SSP, the state behaved as if everything was in its place. It is important to recall that Hafeshwar was one of the three ancient temples amongst many on the bank of river, which as per ASI's conditions had to be relocated "brick by brick". Just as it did in the case of Shulpaneshwar, the govt forgot everything about the ancient temple and archaeological site, once it constructed a counterfeit temple. (NBA PR 280703)

GUJARAT

Stagnant Sabarmati a health hazard

The sight of Sabarmati 'flowing' bank-to-bank with Narmada waters, though a treat for the eyes, could pose a major threat in terms of hygiene in the city, fear doctors. The Narmada water, which was released into the Sabarmati River here, is virtually stagnant, as its flow has been stopped due to a barrage. Ahmedabad Medical Association president Dr Dileep Vaidya says, "The river water is stagnant, which is an unnatural state. Even during monsoon, the Sabarmati did not have much water above the riverbed. The stagnant water poses a health hazard, specially for those living on the river banks." (THE TIMES OF INDIA 030603)

Sans repairs, Pratapura reservoir useless

For the second consecutive year, the Pratapura Sarovar was not able to store water as the work on strengthening its embankments is yet to be initiated. A breach in the sarovar over two years back has rendered it useless. Sources said that in view of the limitation of holding excess waters in Ajwa, the corp could once again have to seek permission from the State Govt to divert some part of the Narmada waters to the city in order to overcome the shortage during summer. But there is a catch in it. The govt has already slapped a bill of Rs 700 M on the corp for using Narmada water last year, which the civic body has refused to pay. (THE INDIAN EXPRESS 050503)

Depleting Groundwater Ahmedabad based Centre for Development Alternatives have pointed out that 87 % of groundwater in Gujarat is contaminated, while it has lost 28 % of its groundwater reserves. (IANS 220603)

Kutch: 300 BC site lies under Narmada canal A 2300 years old piece of amphora surfaced as workers dug ground to create the Narmada Canal through the sleepy hamlet of Nani Rayan on the bank of river Rukmavati, a mere 4 kms away from river's confluence with Arabic Sea. Though evidence of human settlements were found even before in the form of scattered pottery revealed mostly during tilling, rather than going for proper excavation, the digging work for canal was undertaken. Archeologists rubbed their eyes when digging for canal revealed almost a whole city 3 – 10 feet below the ground. "The excavation (sic) has revealed walls of houses, brick kilns and foundry for iron smelting", says Pulin Vasa, a physician and adviser to the state dept of archeology. Would the state dept of archeology wake up and undertake the task of scientific excavation of archeological heritage in Narmada valley and in Kutch, rather than permitting the further drowning and haphazard digging of the past? (THE TIMES OF INDIA 240703)

Poors disappearing by stroke of pen

In what sounds like 'Gareeb Hataao' rather than 'Gareebi Hataao' campaign, the Gujarat govt has been told by the centre to drastically cut down the number of families living Below Poverty Line. If the directive is executed, nearly 2.5 M BPL households may be deprived of food, social welfare and health-related subsidies worth Rs 20 B that they are currently entitled to. Under the new central guidelines, Gujarat is being told to revise its 3.552 M strong BPL list. Ironically, even today, the Centre recognises just 2.12 M as BPL families in Gujarat as against the state's claim of 3.552 M. In July, the state govt went so far as to ask the Gujarat MPs to raise the issue in Parliament to get foodgrains subsidy for the 1.4 M families who were left out. Now, the Union ministry of rural development, finding the figure of even 2.12 M rather inflated, has asked Gujarat, as well as other states, to conduct a new survey of all the BPL households. "The ministry has asked us to limit the number of BPL families to around 1.036 M, plus or minus 10 %," said a top official. (THE TIMES OF INDIA 100903)

Per Capita Growth Rate Negative in Gujarat

While the per capita growth rate for India was 3.3 % during 1997-02, the variation between states is considerable. Karnataka's per capita growth is at 7.3 %, W Bengal 5.5 %, Maharashtra 2.7 % and Gujarat's is at (-) 0.4 %. (THE ECONOMIC TIMES 130803)

Fissure in Kharicut canal in Ahmedabad Gujarat woke up to the steady rhythm of the falling rain on Aug 24. As the day wore on and the downpour continued, Memories of heavy downpour that threw the economic life of Ahmedabad out of gear, three years ago resurfaced. By evening, Revenue Secretary admitted that following a fissure in the Kharicut Canal, nearby low-lying areas and Jasodanagar Chowkdi were flooded. More than 10000 people were badly affected. Several areas in the Walled City and AUDA were under almost two feet of water. Sargasan village in Gandhinagar district virtually became an island with more than four feet of water surrounding it. A number of houses collapsed in Moti Agnej village near the state capital. (INDIAN EXPRESS, THE HINDU 250803)

WATER PRIVATISATION

Sewer deaths: NHRC asks for report Following the petition from the Delhi Jal Mal Kamgar Sangharsh Morcha, the NHRC issued notice to the DJB and Delhi govt on the death of five workers in Rithala sewage plant on June 25. Morcha said that the DJB and private company Degremont (India) did not follow the safety rules at the site. Morcha also accused DJB and Degremont of "distorting evidence and blocking investigations." They played recorded statements of the Sub-Fire Officer who said on record that the fire department "was informed 40 minutes after the incident" which ensured that no employees could be saved. The audiotapes also included recorded statements from some equipment suppliers for Degremont, who confirmed "Degremont officials tried procuring fake back dated bills for safety equipment they had bought for the Rithala plant much after the incident on June 25." Since March, at least 11 workers of private companies have died. The Morcha wants a culpable homicide case against the DJB and Degremont. (THE INDIAN EXPRESS 010703, THE TRIBUNE 080703)

CII for independent water regulator The CII has mooted an independent regulator for the water sector, coupled with more funding for new projects. The role of the regulatory body would be that of watchdog to monitor and enforce standards for availability, quality and implement fair tariffs. (BUSINESS LINE 200503)

Ghana The issue of water Privatisation in Ghana has opened debate on the relevance of economic reforms vis-à-vis the provision of basic services by the state. In 1998, British and American consultants worked on the

business framework for private sector participation and recommended that the govt should lease the water systems to two private operators. Then, the Ghana Water Company, a parastatal, would be downsized and restructured to play the role of nominal asset holder. At stake are 74 systems distributed throughout the country. So far, five multinational corps have been pre-qualified and bidding is underway. Under the arrangements, each successful bidder is expected to invest \$70 M in rehabilitation, renewal and improvement of the water systems. However, due to the resistance against the privatisation and the desire of the corps to minimize risks in the face of the resistance, the five pre-qualified corps have expressed their unwillingness to invest \$70 M. As a result, a new bid document was circulated among the donors and creditors with the intention of reaching agreement by 2002 end. The revised bid document drastically scaled down the level of investments expected from the corps. In the new management contract scheme the govt bears all the risks while the contractor enjoys guaranteed payments regardless of outcomes. (IRN 160703)

Suez kicked out from Halifax Water giant Suez is no longer welcome in Halifax, Canada. Suez reportedly wanted taxpayers to pay any penalties if treated sewage didn't meet water quality standards. Wanting all of the profits and none of the risk is nothing new when it comes to privatisation. Suez's refusal to assume the risks associated with running the sewage treatment system highlight the dangers of privatisation. This should serve as a warning for other municipalities. (Canadian Union of Public Employees, www.cupe.ca, 230603)

ANTI COKE PEPSI AGITATION

Panchayats cancel licenses

On April 9, Perumatty gram panchayat decided to cancel the licence of the Coca-Cola company's bottling unit. Pudukkottai gram panchayat announced a similar decision against PepsiCo India. Coca-Cola promptly approached the Kerala High Court and obtained a stay order against the panchayat's decision. (FRONTLINE 100603)

Toxicity in Coke sludge

According to a BBC report, the sludge supplied by Coca-Cola's bottling unit at Plachimada to farmers to be used as fertiliser contains "dangerous levels of the known carcinogen cadmium." The report says, "Tests revealed the material was useless as a fertiliser and contained a number of toxic metals including cadmium and lead." The report quotes, "the results have devastating consequences for those living near the areas where this waste have been dumped and for thousands who depend on crops produced in these fields. What worries about the levels found is how this might be affecting pregnant women in the area. This would expect to see an increase in miscarriages, still births and premature deliveries."

➤ The Hindustan Coca Cola Company went on the defensive on July 31, with regard to the sludge, when asked to specify the composition, the Company's Vice President said "We have never claimed that it is a fertiliser. We have not compelled any one to take the sludge". He circulated copies of the report of a test conducted at an accredited laboratory in Kochi, which showed that cadmium and lead in the sludge were well within the PCB threshold levels. (THE HINDU 270703)

Struggles to save Groundwater

Mehandiganj The foundations for the devastation of Mehandiganj agriculture was laid down, when in 1995 Kejrival Beverages has laid its hands on 1.75 Ha of agricultural land to establish the bottling unit for cold drinks. However, what Parle started was soon taken over by Coca-cola Bottling North East Pvt Ltd. Everyday millions of litres ground water is mined. Water table is going down by 15 - 40 feet. The caustic soda water has already taken a toll of wheat and rice crops, while the ash is also rendering the soil unfit for vegetation. Coke has also committed financial irregularities regarding stamp duty charges. On the one hand it showed its assets valued at Rs 5.2 M to avoid a considerable stamp duty to revenue dept, but on the other to obtain the NOC from Sales Tax dept, it showed its assets valued at Rs 318.3 M. The revenue dept booked a case of financial irregularity against company and asked the Coke to pay the stamp duty worth Rs 15.07 M as well as the fine worth Rs 30.15 M. The villagers have

organised themselves and demanded the closure of the factory and assert their rights over local resources.

➤ At a protest Sandeep Pandey and others were attacked by security personnel of Coke factory. (SARVODAYA PRESS SERVICE 180703)

Kaladera Ever since Coke set up a bottling plant in Kaladera village near Jaipur, all wells and ponds in the area have dried up. "Water levels have fallen more than 50 m in the area since the bottling plant came up" say the villagers. Shyamlal Kumawat, whose 2 Ha field adjoins the plant, says 14 wells dug up by Coca Cola are drawing hundreds of gallons of water. The soft drink company, which ironically is funding water conservation projects in the Thar, denies being responsible for the depleting ground water. "The plant was set up after we were allotted a fixed quota of water by the state govt. We are not using even 20% of that quota," claimed Sunil Sharma of the MNC. The govt admits it was a mistake to allow a water guzzling plant here. "We have to reconsider our policies," an official from industries dept said. But it seems there is no end to the miseries of villagers. The govt has now sanctioned a beer distillery in the area. (HINDUSTAN TIMES 080503)

Thane Villagers around Hindustan Coca Cola plant at Wada taluka have accused the company of water mining. The company denies the charge. The villagers say the area's water table has dropped as a result of the company's wells. However, Coke officials said the state irrigation dept had allowed the company to tap water from the Vaitarna River. The company has laid a pipeline costing Rs 2 crore to transport water from the river to its plant. The company reportedly pays about Rs 37.8 per KL of water. Meanwhile, the All India Democratic Women's Association has also stepped up its opposition to the plant. A villager said that they have not been paid any compensation even though the pipeline passes through their land. (THE TIMES OF INDIA 060603)

Sivaganga Struggle against exploitation of scarce groundwater resources by Coca-Cola is gaining momentum in Sivaganga in Tamil Nadu. On April 28, more than 7000 people defied a ban order to participate in a rally against Sakthi Sugar Mills, who has entered into a contract with Coke to prepare and package some of its products using groundwater resources, 75 KL a day according to the mill authorities. Activist Arjunan said that the unit had plans to dig borewells up to a depth of 1000 m on the Vaigai riverbed. This would affect the water supply to Sivaganga, Manmadurai and Thiruppuvanam towns and about 80 villages covered by the Vaigai based Drinking Water Supply Scheme, he added. A PWD report on groundwater utilisation indicates disturbing trend. In the Thiruppuvanam, where the two wells of sugar mill are located, the groundwater reserves have fallen significantly, from 13 351 Ha-m to 7 463 Ha m in 1992. (FRONTLINE 200603)

ISSUES ABOUT RIVERS

River cleaning target in trouble

Parliamentary standing Committee on Environment expressed displeasure over river cleaning operations saying it would not be possible to achieve the target of cleaning major rivers by 2007 unless the situation improves radically. The Norwegian Institute for Water Research found Chrome concentrations in the Ganga a thousand times higher than an untreated sewer in Norway. The committee criticised the proposal on supplying clean waters to the people of Agra from Yamuna and said that these types of plan are ambitious but unrealistic. Recommending punitive actions against defaulting distilleries and industrial units, the MPs suggested a monitoring review every three months.

➤ **Funds crunch** Unable to take up new projects for cleaning rivers due to resource crunch, MEF has now decided to prioritise the approved works under National Rivers Conservation Plan. The Ministry has sought a review of the Tenth plan, if pollution control at Ganga and Yamuna is to be given higher priority and works are to be completed during the current plan period. The total fund requirement for the remaining works of Ganga and Yamuna alone is estimated at Rs 20 B and the Ministry is now exploring the possibility of getting the external assistance. A Gross Budgetary Support of Rs 14.17 B was initially approved under the tenth plan, which the Ministry has agreed to raise to Rs 18.25 B at the time of mid-term review. The approved works under NRCP now extend to 157 towns along 31 stretches of polluted rivers in 18 states, involving Rs 40.64 B. 763 projects, worth Rs 24.6 B have been sanctioned under the plan. (THE TIMES OF INDIA, RASHTRIYA SAHARA 050503, THE HINDU 220603)

Yamuna still toxic

The Biological Oxygen Demand levels in Yamuna waters have been hovering at 15 - 30 micrograms per litre, while the normal BOD level should be just 3 mgs per litre. The Coliform count in Yamuna varies between 0.1 M and 1 M, while the normal count should be at 5000. Even after spending Rs 5 B and building 17 Sewage Treatment Plants, the DJB is out of wits as how to tackle faecal coliform bacteria. The CPCB has already issued guidelines to DJB to bring down the coliform level to 2500 per 100 ml. The city generates about 2700 MLD of sewage from households and another 300 MLD sewage discharged into the river by the industries. (THE TIMES OF INDIA 020603)

Rajasthan seeks more Central aid for Chambal

Rajasthan has sought more central assistance for controlling pollution in the Chambal River. Addressing the 11th meeting of National River Conservation Authority, the State Environment Minister said Rs 1.665

B had been sanctioned for the first phase of the Chambal-Dholpur-Bharatpur project to benefit 212 villages and Bharatpur town. She said the first phase of another project would likewise be implemented at a cost of Rs 2.408 B and benefit about 600 villages. She said the State govt had identified the polluted areas in the Chambal and it was getting various works worth Rs 417 M done through the Urban Infrastructure Development Project. (THE HINDU 180603)

NRECP funds for AP

With Centre unresponsive to AP's demand for Rs 1 B for 'pushkarams', the latter rolled eyes over Rs 510 M sanctioned to implement NRCEP in four towns. It is important to note that NRCEP funds can be utilised only to "intercept, divert and treat the domestic and industrial effluents released into the river" and the funds can be utilised in Mancherial, Ramagundam, Bhadrachalam and Rajahmundry. (THE NEW INDIAN EXPRESS 270503)

Godavari Lok Ayukt to probe pollution

The Lok Ayukt has initiated suo motto inquiry into the construction of Gowthami Nandanam and pollution of Godavari waters. Director of Investigation said, the press brought the issue to the notice of the Lok Ayukt during the recent visit of Justice Ramanujam to Rajahmundry. He added that a comprehensive report would be submitted by July 15. (THE NEW INDIAN EXPRESS 040703)

Bihar on mission to bring Ganga to Patna

Bihar govt has embarked upon mission to bring the Ganga back to Patna. In the last few years the river has shifted its course. The 280 M project involves digging a three m deep and 40 m wide trench along the 9 kms route of the river from Digha to Mahendru. (THE HINDUSTAN TIMES 230603)

Mithi Central team studies pollution A central team inspected the polluted Mithi River in Mumbai along with officials from state PCB, the state planning authority and the BMC. The 14 kms long river that was once navigable is now sluggish, murky and reeks. There are at least 3 000 illegal industrial units here spewing chemical and solid waste in to the river, MPCB sources said. The BMC official are working out a new project that would take care of the sewage around 100 MLD, by linking new pipes to the marine outfall at Mahim. (THE TIMES OF INDIA 050503)

Musi Conservation work to begin AP Home Minister said that the tenders for Rs 3.44 B Musi river conservation project have been finalised and works would begin soon. It aims to control pollution all along the river especially in the villages of Rangareddy district. (THE INDIAN EXPRESS Hyderabad 040703)

LAKES, GLACIERS, WATERFALLS, WETLANDS

Morales low at lakes conservation meet

Under the National Lake Conservation Plan it had been decided to include 10 polluted urban lakes for conservation. Of these, conservation plans for three lakes – Powai (Maharashtra), Udhagamandalam and Kodaikenal (Tamilnadu) were first approved with outlay of Rs 149 M. Subsequently six more projects have been approved with an outlay of Rs 577.1 M. In the June 16 meeting, only three CMs - from Delhi, Haryana and Jharkhand - were present. Two states – Punjab and Tamilnadu – failed to send even their representatives for the meeting. While the Centre has plans to implement all future works under the NRCP and NLCP on the basis of 70:30 ratio between Central and State govts, the presentations from different states cried out that they didn't have fund even to meet the revenue expenditures such as salaries. (THE HINDU 150603, THE TIMES OF INDIA 160603, RASHTRIYA SAHARA 170603)

Dal Lake Dying after swallowing Rs 1.5 B

The Dal is dying for want of proper conservation. In the past 40 years, the area of the lake has reduced from 26 sq km to 10.56 sq km. The govt started Rs 5 B Save Dal project in 1997 with the help from MEF. A separate body – the J&K Lakes and Waterways Development Authority – was set up and the Centre agreed to grant Rs 2.979 B for the project. In just past ten years the Govt has spent around Rs 1.5 B on this lake but where the money has gone and how much relief has been brought about is a million dollar question. The figures available from the Vigilance sources indicated that from 1992 to 1997, the Govt has spent Rs 449.7 M. In 1997-8, the total amount spent was Rs 265.7 M and from 1998-2000 Rs 500 M was consumed. The LAWDA showed to have spent Rs 124.2 M in 2000-1 and Rs 250 M in 2001-2.

➤ The LAWDA is yet to take up the task of saving other shrinking lakes like Saruinsar and Mansar in Jammu division. Jammu being a hilly area, has a lot of rivers/ nallahs that cause heavy floods during monsoon but unfortunately major portion of the money for this is being given to Kashmir region. The figures speak of the discrimination. From 1992 to 97 Jammu was given only Rs 95.6 M while Kashmir got Rs 310 M, in 1997-8 Jammu got Rs 62.3 M and Kashmir Rs 113.7 M and from 1998 to 2000, Jammu got only Rs 200 M while Kashmir got Rs 280 M. (DAILY EXCELSIOR 190603)

Bellandur Lake Rejuvenation

The MEF has accorded administrative approval to rejuvenate the Bellandur Lake through the bio-remediation method at a cost of Rs 55.4 M under the NLCP. While the central govt share is 70% (Rs 38.8 M), 30% (Rs 16.6 M) will be State's share. The Karnataka

PCB has issued notices to industries located in catchment area of the lake to stop releasing untreated effluents. (DECCAN HERALD 100503)

Delhi HC for conservation of water bodies

The Delhi HC asked INTACH to file a report on how the 508 neglected water bodies in the Capital can be revived. The Court said it was absolutely necessary to know which water bodies are not being used. INTACH informed the HC that a survey conducted with the help of govt agencies had found that there were 508 water bodies of varying sizes existing in different parts of the capital. Now, the ASI has also stepped in to restore medieval stepwells or *baolis*. (THE INDIAN EXPRESS 140503, see DRP July August p 40)

Masani Lake Desilting

On June 02, the Maharashtra govt began cleaning up Mastani lake at Wadki. Divisional commissioner said it was of utmost importance to check soil erosion in the surrounding hills, failing which silt would again be deposited in the lake. (THE TIMES OF INDIA 030603)

Kukkarahalli Lake restoration project

The restoration & development of the Kukkarahalli Lake, Mysore have been taken up under the ongoing Asian Development Bank funded Karnataka Urban Infrastructure Development Project. (DECCAN HERALD 100703)

Tshopo Rolfa Glacier Impact of climate change The climate change would pose a great risk on the Himalayas. One such catastrophe is Glacier Lake Outburst Flood. According to the study carried by UNEP and ICIMOD 20 Himalayan glacial lakes have the potentiality of GLOF. Of them, Tsho Rolpa is considered the most dangerous one. The past events of Dig Tsho (1985), Chhubung (1991) and Tam Pokhari (1998) GLOFs have demonstrated the damages caused by GLOFs. According to recent study carried out by Narayan Prasad Chaulagain of University of Flensburg, Germany, there have been significant changes in weather parameters and river flows for the last 30 years. According to him, the annual increase in the temperature of the region is 0.14 % whereas the precipitation rate has increased with 0.6 % and thus has increased the annual river flow rate by 0.94 %. Similarly, in summer there is a significant change in temperature (increase by 0.22 %), precipitation by 0.68 % and river flow by 1.47 %. The change of such hydro meteorological parameters has been given a particular emphasis as it affects the accumulation and melting of glaciers. These changes have and will cause shrinkage of glaciers, formation of new glacier lakes and rise in GLOF events. (CE-Nepal NEWS 260603)

INTER STATE DISPUTES

Haryana - UP Dispute on Embankments

Two years since the construction of embankment was on, demarcation work on the Mandewala Flood Protection Works (Bedbars) has come to a halt, following objections raised by Uttar Pradesh that the construction site falls in its territory. UP officials apprehended that if such a structure were not constructed according to the measurement, 8 villages in their state would be flooded in the monsoon. On the other hand Yamunanagar district officials from Haryana claimed that 12 villages of Haryana would be flooded if the flood protection structure is not constructed as per the layout. Two years ago one of the creeks of the right side of the Yamuna got activated which resulting in the flooding of about 12 villages of Yamunanagar district. Haryana proposed the construction of an embankment to close the creek before monsoon. UP opposed it and took the issue to the Yamuna Standing Committee.

➤ Mandewala bedbars in Yamunanagar dist, where the govt has spent lakhs was washed away this year also due to the non-cooperative attitude of the district authority of Saharanpur. (THE TRIBUNE 100603, 130603)

Indravati dispute CWC has proposed to build a Dam over Indravati and Joranala to resolve the dispute over it and to provide water in non-monsoon season to Bastar region of Chhatisgarh. On April 29, the CWC personals undertook a detailed inspection of the site and decided to build a Dam at the point where Indravati meets Joranala. (RASHTRIYA SAHARA 020503)

Maharashtra to approach CWC over Bhima

The Maharashtra govt has decided to approach the CWC on the issue of an interim agreement to release 200 cusecs of Bheema water from Ujini dam to Karnataka. The SC recently directed the state to implement the agreement and accordingly, the state is releasing 1000 cusecs water everyday from the Ujini Dam. Sources in the state irrigation dept. say, since these villages are 210 kms from Ujini dam, the authorities are forced to release 1000 cusecs of water per day so that 200 cusecs of water reaches these villages. The storage in Ujini Dam has gone down to the "Dead storage level" measuring 18 TMC. It will get further depleted to 3 TMC due to SC order. (DECCAN HERALD 110503)

Paragodu: Centre directs Karnataka to stop work

The Union MWR has directed Karnataka not to proceed with any of the projects in the Cauvery or the Krishna basins, which may violate river water agreements or tribunal orders. The direction comes close on the heels of AP govt complaining to it that Karnataka had initiated works on the Paragodu project, ostensibly for the drinking water purposes. AP had followed up its

complaint to the centre with a writ petition before the SC urging to direct Karnataka to drop the construction of the project. The Madras-Mysore agreement of 1892 covers the Cauvery basin, Pennar basin, Palar basin, southern Ponair basin and partly the Krishna basin. The Krishna Water Disputes Tribunal has superseded the agreement of 1892 as well as 1933 between Madras and Mysore so far as it relates to the Krishna system. (DECCAN HERALD 200503)

Cauvery: Another panel

After 17 meetings of Cauvery Monitoring Committee failed to break the deadlock, it was decided that a high level technical committee would be constituted to evolve a "distress sharing formula". The technical committee will consider desirability of distress sharing. This formula however would be an "interim arrangement" till the Cauvery Water Disputes Tribunal, will come up with its final order. The parameters to be considered while adopting the proposed distress sharing procedure will include the net inflows into Karnataka's four reservoirs.

➤ Differences prevailed on the exact point of measurement of flows at Aug 7 and Aug 18 meeting. While, Karnataka insisted that water inflow be measured at Biligundulu, Tamil Nadu was adamant that it be done at Mettur. (THE INDIAN EXPRESS 100603, DECCAN HERALD 080803, THE NEW INDIAN EXPRESS 080803. THE HINDU 250803)

Upper Tunga: Four AP districts face threat

The Upper Tunga project, which got the CWC clearance – though in past CWC rejected the same project twice – will have severe impact on irrigation systems in Anantpur, Kurnool, Cuddapah and Mahbubnagar districts. The estimated cost of the project is Rs 10 B. Against the existing ayacut of 28 400 Ha, the new project has been designed to discharge 2 500 cusecs. The interstate Tungbhadra project at Hospet in Bellary district had received more than its original storage capacity of 220 tmcft in 43 out of last 50 years from 1952-3. The quantity of surplus water, flood discharge from the reservoir, had ranged between 35 tmcft and 300 tmcft in 17 out of 25 years. While the Bachawat Tribunal had awarded the existing Upper Tunga anicut 11.5 tmcft, Karnataka has designed the new project to utilise about 40 tmcft. As a result the inflow into the Tungbhadra reservoir and its flood discharges are likely to be hit badly. (THE HINDU 090603)

Chambal: Rajasthan may cut MP's share

Rajasthan would reduce MP's share in Chambal river water to recover the amount of water being used by the neighbouring state by constructing checkdams in the catchment areas of Gandhisagar, official sources said. A large number of checkdams have lately been constructed by MP in the catchment area of Gandhi Sagar. (BUSINESS STANDARD 120603)

FLOODS

Assam Embankments in bad shape As late as in May, the Water Resources dept was yet to plug the breaches in embankments and threat of devastating floods was looming large. Against the requirement of Rs 300 M for repairing works on embankment, the Govt had released only Rs 29.5 M upto March, and was likely to rely on Calamity Relief Fund. According to Gol estimate, Rs 700 M is required annually for proper maintenance of flood control structures but only about Rs 50 M a year can be spent. Sources revealed that the Centre has released Rs 390 M in 01-'02 and Rs 265.7 M in 02-'03. Despite the assurance from PM to provide Rs 5 B for flood protection works during the 9th Plan, the state had received merely Rs 540 M. Sources revealed that during the last three years, MoWR did not provide any fund. (ASSAM TRIBUNE 040503)

Assam 650,000 rendered homeless Flash floods triggered by heavy rainfall have rendered at least 150,000 people homeless in about 130 villages an official statement said on June 14. The first wave of flash floods started on the night of June 12. Surging waters of the river Barak in Southern Assam submerged rows of villages in Hailakandi and Dhemaji dists, 340 km from Guwahati, overnight. The situation worsened on June 15, as rising waters brought havoc in Nalbari and Karimganj dists, and the toll of villages affected reached 260, that of affected people 200,000. The state govt sounded an alert that mighty Brahmaputra was threatening to breach scores of embankments in at least 10 other dists. In Nalbari dist a tributary of Brahmaputra had breached 6 embankments. Jiadhah, a tributary of Brahmaputra, damaged the meter gauge railway link at village Kekuri Ahomgaon, and National Highway too had gone under water at several spots. Road communication in Kamrup and Nalbari dists was also affected with Puthimari, another tributary originating in the Bhutan hills, inundating several villages close to the Indo – Bhutan border. The National Highway was overtopped near Rangiya in Kamrup dist.

➤ The torrential rain on the night of July 3 once again turned tributaries rising. Even as the state could gather its acts to rehabilitate 400,000 people affected by floods in the month of June, the second wave of floods, engulfing 17 out of 24 dists gripped 641,000 people, said the revenue minister. In the worst hit Dhemaji floodwaters inundated 95 villages affecting over 40,000 people. (ECONOMIC TIMES 150603, HINDUSTAN TIMES 160603, THE INDIAN EXPRESS 180603, SAHARA 050703)

Punjab A high level meeting to review flood protection works, scheduled on May 19, got postponed, and as late as the last week of May – a mere one month away from the onset of monsoon – the state was yet to take preventive measures in flood prone areas. There were around 116 bandhs to be strengthened on the Ghaggar.

Besides, there were 12 other drains in Patiala, which were yet to be desilted. The drainage dept had demanded Rs 246.6 M to take up flood protection works in Amritsar dist, and Rs 191.8 M for Ferozepur dist, but no money was released.

➤ On June 6, presiding over the high level meeting to review flood protection measures, CM said, “paucity of funds would not be allowed to hamper the progress of ongoing drainage works. Rs 45.4 M has been released by the Revenue dept for flood protection measures and Rs 50 M for de-siltation of drains and choes by the Irrigation dept. Most of the dists sought additional funds for ongoing works.

➤ “No floods, no fund”, said CM to Ropar dist drainage officials, who had sought Rs 30 M to take up flood control measures. He also reprimanded the dist administration for seeking funds for drought relief on one hand while demanding funds for flood control measures on the other hand. Officials consider the denial a matter of concern, since the dist had many seasonal rivulets whose initial stretches fall in Shivalik in Himachal Pradesh. Flash floods in rivulets like Siswan, Budki and Daroli Khud may trigger colossal damages. In '01, flash flood in Siswan inundated nine villages in Surtanpur, and last year, flash floods in Daroli Khud inundated crops in some villages of the Anandpur Sahib block. (THE TRIBUNE 260503)

Bihar 100.000 people affected The flash floods caused by incessant rains inundated around 200 villages in Gopalganj, Muzaffarpur, Darbhanga, Samastipur, Sheohar, Sitamarhi, Madhubani, Supaul, E and W Champaran dists. The “release of 172,000 cusecs water by Nepal”³ through Valmikinagar barrage has aggravated the situation. The situation turned grim with swollen rivers inundating several more villages in Sitamarhi, Madhubani, Saran, E and W Champaran dists since June 28 night, as authorities stepped up operations to prevent breach and check erosion. Many villages were submerged in Saran dist, as river Gandak continued to put constant pressure on its embankments, developing fissures. In Sitamarhi and Madhubani dists swollen Adhwara group of Rivers overflow embankments at several places. (HINDUSTAN TIMES 260603, THE HINDU 300603)

Tripura Incessant rains lashed the S Tripura, left 1800 homeless during June 26 – 29. The river Mahuri was flowing near the danger level and waterlogging was reported in parts of Bilonia. (THE TRIBUNE 300603)

³ Such phrases, typically used every year in monsoon shows the ignorance of the media that Nepal has no reservoirs to store or release such quantities of water. This is also a political and bureaucratic ploy to transfer the responsibility to another country to hide their own mismanagement, inefficiency or simply to escape people's anger. The main barrages in Nepal, on Kosi and Gandak Rivers, are financed and controlled by Indian state govts.

IRRIGATION

Reform Irrigation sector: WB tells TN The WB has said that the TN has to initiate the "reform process" in the irrigation sector. In place of the 'monolithic' PWD, the WB has mooted formation of an exclusive and autonomous organisation to deal with water resources with its own dedicated cadre. Another WB idea relates to establishment of a water tariff panel, on the lines of the TNERC. The WB made it a conditionality to set up separate body for water resources at the time of giving funds for the Water Resources Consolidation Project. (THE HINDU 180503)

Godavari 'Jal Nidhi' mooted A union Minister has suggested that a 'Godavari Jal Bhagya Nidhi' be formed on the lines of Karnataka's Krishna Jal Bhagya Nigam to raise funds for completing irrigation projects in Godavari basin. (THE NEW INDIAN EXPRESS 200503)

Cauvery projects Nigam aims at Rs 15 B The Cauvery Nigam set up on the lines of the Krishna Jal Bhagya Nigam aims to mobilise Rs 10 B this year for irrigation projects, said Karnataka CM. Keeping in view the interim order by the Cauvery Tribunal that the land under irrigation should be restricted to 0.45 M Ha, funds are being made available.

➤ The Karnataka govt has decided to increase the paid up capital of Cauvery Neeravari Nigam from 10 B to 15 B. The state MWR said the govt would have to raise Rs 50 B to complete the pending works by 2006. (DECCAN HERALD 130503, 180503)

Pench A special irrigation development authority is being set up for speedy implementation of the Pench Irrigation project in Seoni and Chhindwara districts of MP. The Authority would mobilise finances to complete Rs 5.5 B project in 5 years to irrigate over 90 000 Ha. 44 939 Ha would be irrigated by right bank canal in Chhindwara district and 44 439 Ha by left bank canal in Seoni district. (THE HINDU 250603)

Devdula The AP govt is likely to grant sanction for the Devadula irrigation project. The govt is also scouting for financial help from ICICI and SBI to fund the project, which is likely to cost over Rs 20 B. The CWC recently granted hydrological clearance for the project, which envisages lifting of water from Godavari River in different stages for irrigation in Telangana region. (THE TIMES OF INDIA Hyd 070603)

Punjab Irrigation plan

Punjab has formulated a Rs 5.2 B plan comprising eight projects for providing better canal irrigation facilities. About 17 000-km watercourses would be lined under these projects. The Central govt has in-principle agreed to sanction Rs 2.56 B for three projects, namely the Kota branch system, the Easter branch and the UBDC system. (THE TRIBUNE 090503)

Chhatisgarh Fund sanctioned The Chhatisgarh Govt has sanctioned Rs 742.22 M for construction of three reservoirs in Bastar and Mahasamund districts. The state MoWR sources said Rs 608.44 M has been sanctioned for Kosarteda medium irrigation project in Bastar and Rs 99.71 M and Rs 30.04 M for Chandidogri and Telibandha reservoir respectively in Mahasamund district. It was claimed that after completing these projects 8500 Ha irrigation facilities would be added. (RASHTRIYA SAHARA 060603)

UBDC Probe washed away?

The question is hotly debated in Punjab Irrigation Bhavan, over the scam unearthed in Nov last year. Bhagat Singh Sandhu report submitted to the CM observed that the officers played havoc with the entire Upper Bari Doab Canal system and Rs 1 B spent on the remodeling of the project has gone down the drain. According to the sources, Sandhu had pointed out a nexus between a certain officer and politically connected contractors. What is the fate of the report, no one knows. But the sources said a senior officer has already retired and several others would retire in the days to come. The entire purpose of holding inquiry might be lost, fears the senior officers. (THE TRIBUNE 010603, 060703)

Thungon chargesheeted Former Minister of State for Urban development, P K Thungon was chargesheeted by CBI with other two for allegedly embezzling Rs 5 M meant for developing irrigation facilities in Nagaland. The CBI alleged that the money was part of Rs 20 M fund, which the Centre had sanctioned for the state for renovation and upgradation of minor irrigation projects in 1993-4. However, the accused misused the amount for purchasing wires, which were never supplied. (THE HINDU 040703)

Waterlogged, saline land to be reclaimed The district administration of Jhajjar in Haryana is embarking on a plan for reclamation of waterlogged and saline agricultural lands, which has rendered 836 Ha in the district useless. According to the official sources, the Ministry of Rural development has sanctioned Rs 45.8 M for the project. (THE TRIBUNE 170503)

Proposal for groundwater recharge in Thar

Union MWR has put forth a proposal to fill the aquifers in 13 districts, which falls under the Thar desert in Rajasthan with the surplus water from the Indira Gandhi Nahar Pariyojna. According to estimates, groundwater resources of the Thar desert amount to 92 000 MCM and the annual replenishable groundwater resources are about 3 613 MCM. The assessment is that a total of 71 000 MCM of water can be recharged to the groundwater in the Thar desert, while in the Lathi basin alone it could be 14 700 MCM. (THE HINDU 110503)

IRRIGATION OPTIONS

Saurashtra Check-dams raise water table A series of check-dams built in the Saurashtra under the Sardar Patel Sahbhagi Yojana through people's participation during the last four years, has resulted in raising the water table in the wells by 2.5 - 17 m, according to a survey conducted by the Central Ground Water Board and the state water resources dept. The CGWB had carried out a survey of 34 wells in different talukas of Jamnagar district in 2001-2, where it rose by an average of 4 m in 22 wells. A survey of water tables in 574 check-dams in 380 villages of Rajkot district by CGWB revealed that the water table rose by 5 - 7 m. In Surendranagar, it was found to have increased by 11 m in 80 check-dams in Dhrangadhra taluka, where it had rained just 300 mm. (THE TIMES OF INDIA 110603)

Kerala water harvesting projects Kerala plans to start rainwater-harvesting projects in all districts by the end of 2004. At present such projects are under implementation in Thiruvananthapuram, Kottayam and Alpuza districts. In last two years, the % of rural households served with tap water has gone up to 58.5 % from 55 %, while in the case of urban households it has gone up to 79 % from 77 %. (SAHARA 010603)

Orissa water harvesting projects The Centre has sanctioned Rs 150 M for 8 RWH schemes in drought affected Orissa. Water Resource Minister said that Centre has already disbursed Rs 115.5 M to the implementing agencies. She added that currently 174 RWH schemes are going on in 27 states and UTs at the cost of Rs 810 M. (RASHTRIYA SAHARA 080503)

Central fund for Guj, Mah, Karnataka The Centre has released Rs 64.3 M to Gujarat, Maharashtra and Karnataka for watershed projects, of this Karnataka has got Rs 16.05 M for Bellary and Bagalkot dists. (DECCAN HERALD 090503)

UP Plan for water conservation The Irrigation Dept of UP has prepared a plan for recharging groundwater. The irrigation minister said that 2 800 recharge wells and 500 check dams would be constructed in 181 blocks of 45 districts. The total cost of project would be Rs 800 M. The groundwater level has gone down 10 - 15 m in 65 blocks. (RASHTRIYA SAHARA 290703)

Hydrams in HP Himachal Pradesh Govt has a plan to install 500 hydrams. It proposes to establish 100 hydrams in Shimla district at a cost of Rs 28.2 M. Hydram is based on the principle of hydraulic ram. Himurja, a power development agency of HP, has been installing the hydrams. 72 hydrams have been installed in Shimla, Kulu Mandi and Lahul Spiti districts to irrigate 2 500 bighas. Out of these, 12 hydrams have been installed in the tribal areas of Spiti and 29 in Shimla district. One hydram costs Rs 0.22 M and irrigates 30-45 bighas. (THE TRIBUNE 040603)

SOIL EROSION

Majuli is dying

Majuli, located within the two arms of the mighty Brahmaputra River in upper Assam for the last two centuries, is dying. The scientists from CSIR's regional research laboratory in Jorhat and Dibrugarh University have found that the Majuli island housing more than 0.13 M people will soon become extinct unless stringent measures are taken to control soil erosion, the main culprit responsible for the death of the island. An analysis of satellite imageries obtained from ISRO's IRS satellites coupled with ground observation and through scrutiny of 1920 survey of India maps reveals that the island lost half of its area in the last two centuries. It currently has only 577.65 sq km of land as against its original area of 1245 sq km with an erosion rate of 1.9 sq kms per year between 1920-98.

➤ The committee constituted by the people of Majuli to spearhead a fresh struggle to save the river island, observed a bundh on Aug 4 and staged a sit in demonstration on Aug 7, protesting against the failure of the state govt to take up any permanent measure to check continuous erosion of island's land mass by the river. CM rushed to Majuli to placate sadhus and declared that the state would spend Rs 9 M on several projects to check erosion. The Brahmaputra Board, under MoWR had in 1999 prepared a master plan with a budget of Rs 1.02 B for the protection of Majuli. However, it was only recently that the Board approved schemes worth Rs 59.9 M. After the movement, Union Minister decided that the Centre would spend Rs 420 M for the protection of Majuli during the 10th Plan. (DECCAN HERALD 070503, 120803)

Brahmaputra Erosion

A recent study using remote sensing data and GIS found that during the period of study of about 50 years, a total area of 786.129 sq km had been eroded in the north bank of Brahmaputra, where as an overall area of 758.42 sq km had been eroded in the south bank. The net effect is erosion of about 1054.78 sq km from the entire length of about 640 kms of the river Brahmaputra in Assam. So, this data gives the rate of erosion in the period, which amounts to 0.033 sq km per km length of the river channel. On the other hand the newly formed area by siltation in the North bank amounts to 225.426 sq km and in the South bank it is 264.353 sq km over the same period. The study using data of 1925, 1965 and 1996 of the 85 km long segment. The total area eroded during 1925 to 1996 is 63.8 sq km in the north bank respectively. It is found that the rate of erosion in the 16 km long section around Rohmorja in the south bank was 0.06 sq km per km during the period from 1915 to 1972, which almost the double of overall rate of river Brahmaputra. The rate of erosion turned out to be 0.26 sq km per km, which is four times higher than the

previous rate (0.06) for the period from 1972 to 1996. (ASSAM TRIBUNE 100503)

Crater creation: Haryana residents concerned The abrupt appearance of a number of wide and extremely deep craters in an area of about 2.5 Ha across the Narnaul-Singhana road near Khatoti Kalan village has become a matter of concern for people of Ahirwal region in South Haryana. The affected areas are in the heart of Dohan Pachisi, a cluster of 25 villages. The residents here had boycotted the previous assembly election in protest against the 'apathy' of the govt to solve the drinking water problem of Dohan Pachisi. (THE TRIBUNE 020603)

Padma Bengal villages face loosing battle

Villagers from Jangipur face the loosing battle against an ever-advancing river Padma, which was 30 kms away just five years ago. For the likes of Mufizuddin Ali of Krishnashal village of Murshidabad district, who lost his two-storied building with 10 rooms and a mosque, another dislocation is round the corner with the onset of monsoon. There are thousands of people like him in the villages of Teghori, Qutubpur, Raghunathpur, Krishnashul, Lalgola and Jangipur who are now paupers after seeing uncounted schools, mosques, buildings and agricultural lands getting washed away in the nature's fury. The danger this year is even more as erosion control schemes have been stalled by the irrigation dept. The reason: the Zilla Parishad in Murshidabad has denied the responsibility of procuring boulders in the wake of corruption charges in the latest CAG report. The CAG report for the year ending March '02 revealed that the purchase of boulders at a higher rate resulted in an extra expenditure of Rs 28 M and supplying them from far away to the work site resulted in an extra expenditure of another Rs 4.439 M. (THE TIMES OF INDIA 050703)

Subansiri Narayanpur hit by heavy erosion

Erosion by Subansiri River is causing panic among the residents of Arimora, Jamuguri, Bonpuroi, Teteliguri under Narayanpur revenue circle. More than 25 families of the area have been relocated to some safer places in 1990 as their lands were eroded by Subansiri. It is seen that the distance between the embankment and river water in some places is now 20 - 25 meters only. The concerned people alleged that the MLA has shown no sympathy towards the erosion-affected areas. In the meantime, the people of surrounding villages and several voluntary organisations helped to protect the people from erosion and flood in the area. (ASSAM TRIBUNE 030703)

WATER POLLUTION

Chemical Industry seeks right to poison

The Indian Chemical Manufacturers' Association has appealed to the govt to refrain from ratifying the Stockholm Persistent Organic Pollutants treaty. The ICMA appeal is shockingly short sighted and selfish as it asks, in effect, for the right to poison India's environment and its citizens. The Convention has identified 12 POPs for phase-out. (ECOLOGIST ASIA APRIL-JUNE 03)

Ropar water samples fail tests

30 of the 118 water samples collected by health officials in Ropar dist of Haryana failed the purity test. The samples were found to be biologically contaminated. Last year, all water samples collected by the district health authorities had failed. (THE TRIBUNE 010503)

Polluted water claims 6 in Jharkhand

At least 6 people including two children and three women died and several others were taken ill after drinking polluted water of a local rivulet in Jilpidiah village of Gumla dist. As there is no handpump and wells have got dried villagers of this remote area have no choice but to depend on the contaminated water for drinking purpose. These are common incidents in Jharkhand as most of the rivers and ground water is contaminated with toxic metals like arsenic, fluoride, nitrate, nickel, chromium, sulphate etc due to different types of mining and other geological phenomenon. (Personal Communication)

Koidaikanal Thermometer Plant

Tamilnadu Govt has decided not to allow a new unit in place of the mercury thermometer plant of Hindustan Lever in Kodaikanal that was shut down because it was causing environmental damage. Long after its "safe life" had expired, the plant continued to produce 165 M mercury thermometers over 18 years, largely for the export to the US. Given the condition of the plant, according to HLL, a production loss of 40% was acceptable. In other words it was acceptable to HLL that of the 136 tonnes of mercury used, about 50 tonnes would end up in spills or thermometers broken on factory floor. The leakage of contaminated material into the factory surrounding first came to light when environmental activists discovered that the plant had sold glass scrap containing traces of mercury for recycling to a local scrapyard. On March 7, 2001, Palni Hills Conservation Council and Greenpeace cordoned off and occupied a scrapyard. After investigation by the

TNPCB, the plant was shut down in March 2001. A report prepared by TNPCB is believed to have pointed out the “variations in the material balance in respect of mercury” and that “the loss of mercury into the environment which appeared to be substantially higher than permissible levels would require a more precise determination”. On the other hand, the report submitted by the Consultants appointed by the company, claimed that there has been “no impact” on Kodai lake, soil has been affected in some areas inside the factory requiring remediation, levels of mercury emission into the environment has been low. The most questionable case the report makes is with regard to the impact of mercury on forest and lake ecology. 50 mg/kg of mercury was detected in the lichen outside factory and 110 mg/kg leaching out from under the soil and into the *shola*. This means the accumulated mercury in soil and on the slopes leading into forest is 600-800 times the permissible limit for receiving bodies. The plant was established in 1983, the mercury contamination was discovered only in 2001. The company that run the plant for last 18 years unhindered now says it had taken “action to track down any scrap glass which had left the site and offered to recover any scrap from recyclers for safe storage on the Kodaikanal site”. What is of concern, however, is the failure of TNPCB to play a proactive role and the monitoring has been found wanting in this case. (ECONOMIC AND POLITICAL WEEKLY 030503, ECOLOGIST ASIA ARIL-JUNE 03, p 16-21, FRONTLINE 290803)

Yamunanagar: Polluting industries closure

CPCB has directed four factories in Yamuna Nagar, Haryana, to close down and stop discharging any more effluents in Western Yamuna Canal. As per directive, these factories will remain shut till they have made alternative arrangements for zero discharge of effluents. (DOWN TO EARTH 150503)

Bangalore: How safe is drinking water?

A study done by the Department of Mines and Geology revealed that out of 918 water samples from 753 locations, water from 370 places did not meet the ‘Indian Standard-Drinking Water Specifications’. After *Deccan Herald* reported the same on Aug 8, the number of samples received by the DMG have shot up by at least 50 %. (DECCAN HERALD 250803)

Untreated sewage being dumped

Despite investing Rs 25 M in the construction of a STP under the YAP at Gohana, sewage continues to flow in Drain without being treated. The main reason for truncated functioning was low voltage. (THE TRIBUNE 010703)

WATER SECTOR

GOOD NEWS:

Inter-ministerial Water Quality Assessment Authority Exists!

The Inter-ministerial Water Quality Assessment Authority has little to show for its broad mandate. Its job was to give “perspective” to the whole disjointed effort of monitoring and action on surface and ground water, bring about a commonality of approach and coordination among players such as the CWC, CPCB, the Centre and the states. It can issue directions on a range of issues, but far from issuing directions, the 12 member Authority, is still in its “formative stage”. Despite the mounting evidence of pesticides and other pollutants in surface and ground water, it has met just twice since its formation in June ‘01: Sept ‘01 and May ‘03. In its first meeting, it sought the formation of State Water Quality Review Committees to improve coordination, assess the monitoring of network and identify the areas needing action. It took five months for the Centre to issue an order on this in Feb 2002. In its second meeting, it examined a report on water quality monitoring systems – network designs, sampling procedures, data entry. This report has just now been sent to the two ministries and will hopefully form the “basis for subsequent appropriate decisions” to “moderate and even out” things. One other decision: The Authority has just set up a monitoring committee, chaired by the additional secretary (environment) to address issues in detail. This hasn’t met as yet. (THE TIMES OF INDIA 080803)

Water availability The annual per capita availability of renewable fresh water in the country has shrunk from a high of around 5 277 cubic m in 1955 to below 2 464 cubic m in 1990. The projected increase in population by the year 2025 indicates that the per capita availability is likely to slip below 1000 cubic m. But isn’t a vast majority of the population already surviving below this limit? In the successive five-year plans, the benefit of subsidised water delivery system has failed to reach the poor. At the cost of 1600 unauthorised colonies and 1100 slums in Delhi, who have yet to get piped supply, the privileged class pays Rs 1.6 per cubic meter of water. Some 30% of potable water gets flushed through the toilets. This is equivalent to 195 MGD – or the amount required by the DJB to reach the un-serviced colonies and slums. Studies indicate that the poor pay anywhere between 8-20 times what the rich pay to get water from unreliable sources. In contrast, what the rich pay for piped water is fraction of the actual cost of producing potable water. (THE TIMES OF INDIA 090703)

Water tax demand irks villagers The villagers of more than 35 villages in Northeastern part of Udalguri subdivision have expressed grave concern over the notice by Dhansiri Irrigation project, which was distributed to farmers demanding ‘water tax’. An

executive member of the 'Greater Dhansiri-Jampani Bundh Committee' said that the Dhansiri Irrigation project has not released water through its canals till date to the paddy fields in the northeast part of their villages. Rather, farmers themselves under the cooperative apex body the Greater Dhansiri-Jampani Bundh Samiti, have been digging canals for years to supply water to the paddy fields, since as early as 1932. On the other hand, the Dhansiri Irrigation project has become a safe heaven for the engineers and contractors to exploit the govts by making bills for those work activities – which are in fact not completed. The Committee also demanded to conduct a minister level inquiry to find out the validity for the alleged water tax. (ASSAM TRIBUNE 280603)

Politics of water may ignite warfare in South Asia

The Himalayan Water Resources and their management may constitute the most serious flashpoint for conflict and warfare in an already contested south Asian region, an Indo-Canadian study has pointed out. "It is as well a region where the criticality of the water balance may have profound political ramifications, regionally and globally," a study by CIDA and Shastri Indo Canadian Institute said. On the international front, he said the effectiveness of Indus Water Treaty, which includes water resource management within its context, will be put to test in the changed scenario. (DAILY EXCELSIOR 050603)

BOTTLED WATER

New Quality norms from Jan 1 The new standards for bottled water specifying stringent limits for pesticides will come into force from Jan 1, 2004. The gazette notification adopting the European standards for packaged water was issued by the Ministry of Health and Family Welfare last month. As per the notification pesticide residues when considered individually should not exceed 0.0001 mg/litre. The total pesticide residue level shall not exceed 0.0005 mg/litre. (THE HINDUSTAN TIMES 090803)

BIS sole packaged water licensing body The Delhi HC has stripped the MCD of its power to issue licence for manufacturing and processing "Packaged Drinking Water". It said that there is no purpose in two authorities scrutinizing the very norms and the more stringent norms preferred by the BIS are liable to be followed. The MCD had submitted that despite regulations on quality control by the BIS, it would continue to have jurisdiction to deal with any premises falling in civic area. (THE TIMES OF INDIA 020603)

Tests cast doubts over Rail Neer quality Rail Neer, Indian Railways' own Bottled Water, is not safe. Within two months of its launch, test reports have cast doubts over its quality. There are also complaints about its high price. (THE HINDUSTAN TIMES 050803)

GROUND WATER

Price tag on borewell water

The Centre has cleared a bill that levies a charge on Delhi's groundwater. Now the Delhi Water Board (Amendment) bill is to be passed by Delhi assembly to become a law. For levying the charge, either meters would be installed on tubewells or a fixed cess would be levied on basis of the tubewell's diameter. If the user does not install the meter, "the DJB may itself install a water measuring device and recover the cost from the defaulting user of groundwater," the bill states. The bill permits the DJB to "break open the door of any premises" where groundwater is being illegally drawn. If the property owner refuses to let officials inspect, the DJB can also seize equipment. (THE TIMES OF INDIA 090503)

Chhatisgarh The water table in Chhatisgarh had gone down and in Raigarh dist, it had hit the lowest level and traditional wells in Durg dist have gone dry. A high degree of fluoride in surface water in Dantewara, Dhamtari, Durg and Rajnandgaon districts has created a crisis for the villages that are forced to take contaminated pond water. Nearly 27 villages in Raipur, 31 in Durg and about 24 in Bilaspur and Kawardha dists, have no arrangements for alternative sources of drinking water. Contrary to the govt's claim that they have installed 29 233 handpumps, a probe reveals that no hand pumps exist at over 5 000 places. Nearly 6 000 handpumps have either failed because of low water table or have dried up within six months. (THE INDIAN EXPRESS 130503)

Chhatisgarh: Indira Gao Ganga project For last two years the govt in Chhatisgarh has embarked upon this populist programme. Under this project the groundwater is drained out through borewells and village ponds and lakes are being filled with it. The govt has claimed that it has covered almost 6000 villages so far. By a rough estimate if we count that 5000 village ponds would have been filled by groundwater, it would amount to withdrawal of 4 billion cubic feet ground water. Almost half of this water would have been lost by the way of evaporation and seepage. In addition the cost of energy to power pumps would have gone to waste likewise. Ramesh Billorey has urged communities to oppose such schemes and press govt to undertake rainwater harvesting. (SARVODAYA PRESS SERVICE 010803)

Haryana In Ganaur, Sonapat and Rai blocks water table has gone down. According to reports of Agriculture Dept's subsoil water cell, the level of underground water in 1998 in the Sonapat region was 7.15 m, in Rai 7.03 m, in Katura 2.89 m and in Gohana region it was 4.03 m. As recorded in 2002, it was 10.25 m in Sonapat region, 10.7 m in Rai, 3.71 m in Katura and 5.57 m in Gohana region. (THE TRIBUNE 110703)

GROUND WATER CONTAMINATION

Ground water survey

Ministry of Rural Dev will receive by Sept the report of an under ground survey, that will help identify the nature of contamination in the groundwater. There are over 0.2 M habitations in the country where the quality of water was affected due to the presence of fluoride, arsenic, high salinity and excessive iron content. (THE HINDU 280803)

Delhi: Excessive Nitrate According to a CGWB publication, *Groundwater in Urban environment of India*, Delhi's sub-soil aqua reserves have a problem of excessive nitrate content. "In areas like IIT, NCERT campus, Naraina and parts of Shahadra, nitrate content is more than the permitted 100 mg per litre," a CGWB officer said. The study shows there is a high concentration of fluorides ranging from 0.1 mg to 12.5 mg a litre, whereas the permissible limit set by the BIS is 1.5 mg per litre. The worst affected areas are Kanjhawala, Najafgarh, parts of the walled city and Sahadara. Chloride levels range from 11 mg to 4461 mg a litre, with the highest level recorded in Nazafgarh. The nitrate levels have been found to range from 0.1 mg to 1589 mg a litre. 60% of the samples tested by CPCB and CGWB contained over 45 mg of nitrates in a litre, the worst affected blocks are again Kanjhawala, nazafgarh and South Delhi. Sulfate contents in the samples tested ranged between 5 mg and 2325 mg a litre; where as permissible limit is 400 mg per litre. The worst affected blocks are Kanjhawala, Najaphgarh and South Delhi. (THE TIMES OF INDIA 060503, HINDUSTAN TIMES 090503)

Chennai: Excessive salinity In a case study conducted by C P R Environmental Education Centre, it was found that the Total Dissolved Solids and chloride content in the groundwater have doubled and in some cases even tripled, throughout Chennai. The TDS level in Mandavelipakkam has increased from 1 788 ppm in 1999-'00 to 3 277 ppm this year. In North Chennai, the worst affected place is Thiruvottiyur, where the TDS has increased from 2 015 ppm in 1998-9 to 3 217 ppm this year. In South Chennai, Indira Nagar has recorded a maximum of 2 037 ppm. Other areas that have shown steep increase in the TDS include Thiruvanmiyur (from 673 ppm in 1998-9 to 1439 ppm), Raja Annamalaipuram (from 970 ppm in 1999-'00 to 1 690 ppm) and Royapuram (from 747 ppm in 1998-9 to 1 928 ppm now). (THE HINDU 220503)

Yavatmal: Rampant Osteofluorosis Kolam tribe in Yavatmal district is forced to drink water, which is full of contamination bringing them Osteofluorosis. The schemes to control the contamination has failed to check the spread of the disease. (THE HITVADA Nagpur 290603)

Ghaziabad: Sealing Tubewells The Ghaziabad Municipal Corp is planning to seal some of the tubewells. The decision was taken after it was found that the groundwater was being polluted by untreated industrial effluents discharged from local factories. The water from these tubewells contained high levels of carcinogenic chromium. The groundwater in up market Lohia Nagar area was contaminated with high levels of chromium. Dist UPPCB chief said, "We have served notices to two important units on the Meerut Road Industrial Area, who appear to be chief culprits. What is likely is that they do not operate their ETPs, leading to the 'leakage' of chromium into the ground water. (THE TIMES OF INDIA 210703)

Bihar: High fluoride content Kacchhariadih, a village in Bihar's Nawada district, has 300 people, including 50 children who cannot walk without support. The village has earned the morose nickname as "the village surviving on bamboo sticks". While the exact cause of the disability remains a mystery, the common hypothesis is that the water supply here has too much fluoride. A survey by an official commission found the drinking water had 8% fluoride content – way above the permissible limit of 1.5%. Scientists say 350 M people on the Ganga delta face arsenic contamination.

➤ Large areas of Bihar are faced with fluoride and arsenic pollution of serious nature in the underground drinking water crippling thousands of lives, admitted the state govt in the Assembly. "Tests were carried in villages of Nawada, Jamui, Gaya, Munger, Begusarai and Araria and drinking water there was found contaminated due to high presence of fluoride", Minister of State for Public Health and Engineering dept said. The Minister said that the state govt had distributed fluoride filters to the affected villages. The Bhojpur DM said that 166 handpumps out of 204 in the villages were found to contain arsenic and had already been declared unfit for drinking. (HINDUSTAN TIMES 150503, THE TRIBUNE 070703, THE INDIAN EXPRESS 100703)

Sonepat More than 8000 villagers from Bahalgarh has reportedly been suffering from health related problems due to contamination of ground water. The main cause of the problem is said to be seepage and mixing of chemically polluted water released by surrounding industries. Various complaints have been lodged to HPCB and HIDB, but it has not availed any action. (THE TRIBUNE 190503)

Poisoned groundwater Arsenic toxicity and Fluorosis is not a "natural" disaster. The GSI has listed regions that are on the fluoride-red alert, stretching from Punjab to Tamilnadu. No one region can be identified as chronically and endemically fluoride prone. Studies done in arsenic affected belt show that concentration increases with depth in aquifer and gets reduced as it reaches 400 ft down. The govt in its quest for clean water was callous, indeed criminal, when it came to responding to the news that was filtering in. The

“strange” diseases are linked to the ground water. It responded with denial. Even now public policy refuses to accept that the problem is not arsenic or fluorosis per se. The problem is unhindered groundwater mining. The answer to the problem likewise is in the management of groundwater. There is no regulation worth its name to manage groundwater. The task is now to rebuild the community water systems and to keep them clean and unpolluted. (BUSINESS STANDARD 240603)

W Bengal Excess fluoride Even as W Bengal grapples with the problem of arsenic contamination in large parts, a new problem – the excessive presence of fluoride in groundwater – has begun to pose a health hazard. Till now more than 371 habitations in 79 blocks of 11 of the 17 districts have been identified to have excessive quantity of fluoride in groundwater. Districts that have been affected include Jalpaiguri, Uttar Dinajpur, Malda, Dakshin Dinajpur, Hugli, and Medinipur with a population of 14 M being at risk of arsenic poisoning.

➤ Arsenic has been found in Victoria Memorial, visited by hundreds of visitors everyday, and have been sealed. (BUSINESS LINE 160803, THE INDIAN EXPRESS 130803)

Bangladesh Verdict on arsenic poisoning

The High Court in London have confirmed that the British Geological Survey has a reasonable case to answer and that the victims of arsenic poisoning have a realistic prospect of success in their pursuit of claims. BGS had provided expertise in well digging project executed in Bangladesh from 1983 to 1992. The plaintiffs contended that the BGS did not test for arsenic in the water of the wells. As a result they unknowingly consumed water contaminated by arsenic over a long period. Reacting to the group petition filed by London based law firm, representing 750 victims, the Court decided that the litigation raised a novel point in law and could not be summarily dismissed at a preliminary hearing. (DOWN TO EARTH 150603 P 09)

Nepal: US scientists to draw arsenic map Scientists from US Geological Survey in collaboration with Nepal govt have begun field work in Terai region to probe the cause of contamination and the location of tainted aquifers that would result in the drawing up of an ‘arsenic map’. The US project in Nepal targets the Terai region, where 47% of the country's population lives. Samples taken from 2 500 public and private water supply wells tell an amazing tale. The Navalparasi dist shows the maximum contamination, followed by Kailali, Rautahad and Siraha. Arsenic contamination is not just W Bengal or India's problem but a regional issue in South-East Asia. It has also been reported in Bangladesh, Thailand and to some extent in Nepal and Myanmar. (DECCAN HERALD 060503)

CAG EXPOSES BWSSB SCAM

The CAG report for Karnataka (civil) has unearthed a series of irregularities in the execution of the Cauvery Drinking Water Project, which has left the BWS&SB saddled with losses totalling Rs 710.4 M. The Board is currently executing the Cauvery Stage 4, Phase 1 project at a cost of Rs 10.72 B to augment drinking water supply in Bangalore city. The CAG's expose shows how casual the BWS&SB has been with the project funds and how “undue favours” to some contractors resulted in massive losses. The Overseas Economic Cooperation Fund, Japan is assisting the project with a loan of Rs 9.845 B, but the project has overshoot its earlier deadline of March 2002 – the fresh deadline is Sept 04. The Board has spent Rs 7.104 B till March 02.

➤ In one instance, the Board received tenders from 11 pre-qualified companies for a segment of work in 1998. But none of the companies fulfilled the tender conditions. However, since retendering was thought to consume time, clarifications were sought from the companies, which were then graded. The grading though was wrong and the lowest bidder, Wabag of Germany, which quoted 246.9 M was left out. The contract thus went to Degremont of France, which quoted Rs 417.4 M. This decision alone cost the Board Rs 170.5 M.

➤ The Board received seven tenders in Aug 1998 for mechanical and electrical works on Clear Water Transmission Pumping Station. SME, a joint venture company quoted a lowest bid of Rs 426.3 M. However, the Board rejected SME offer in Aug 02 on ‘untenable grounds’ citing the OECF guidelines. “The Board's processing of the late tender of BHEL – KCJ in contravention of the tender conditions created scope for OECF to award the contract in favour of BHEL – KCJ after rejecting the lowest tender of SME on untenable grounds” reports CAG. In the process, the Board had to bear an extra expenditure of Rs 93.6 M.

➤ In Oct 1998, the Board received eight tenders each for two packages under water transmission mains work. The SPML submitted the lowest offer of Rs 550.2 M for W4b and Rs 573.6 M for W4c. But the Board going by its consultant's advice, asked OECF to approve Dodsals bid of Rs 738.1 M for W4b and L&T's Rs 820.5 M for W4c. The OECF, however cleared both in favour of Dodsals, which CAG describes as “a financially weak” company. The Board suffered the extra expenditure of Rs 401.4 M. solely because it rejected the lowest bidder, SPML. The Board's officials have also been accused of having favoured BHEL by allowing undue tax concession of Rs 8.4 M after a work was awarded.

➤ In another episode BWSSB reauthored the tender text to accommodate a private firm, which was initially disqualified. Thanks to revision, The Kolkata

based Electro Steel Castings Ltd 'bagged' the contract to provide trunk mains, feeder mains and interconnections. The report says that the BWSSB handled the tender in a "predetermined" manner to ensure that the contract went to EC. In this particular contract, one of the conditions for pre-qualification was that the agency needed to have 5 years experience in providing and laying "steel /ductile iron /cast iron pipeline of diameter of 600 mm and above, of a length of 10 km, in a single project". Eight firms made the grade while EC was disqualified for lack of experience. But, EC then made a representation following which the BWSSB allowed the firm to put up a bid in 1998 on the grounds that it was a pipe manufacturer. The CAG report calls this "an undue favour to EC" as the Board did not consider the pre-qualification tender of another company, which had also laid pipes of 800 mm diameter in a project for a length of 9.7 kms. While the Board had prescribed a minimum experience of 5 years in the supply and laying of DI pipes in the original tender forms issued in Jan 1999, the experience clause was later amended to reduce it to 3 years, apparently to help EC. The firm still fell short by two months and this time the OECF, Japan intervened to ask BWSSB to make it "approximately three years". In May 1999, the EC bagged a contract for Rs 647.6 M.

➤ As decided, cast iron was specified for pipes upto 800 mm in diameter or more. But, the Board proposed ductile iron in place cast iron for pipes of less than 1000 mm diameter. The proposal however, did not find favour with the project consultant, who said mild steel was cheaper for intermediate size (800 mm to 1000 mm). The consultant also advised the Board that EC was the sole manufacturer of ductile iron pipes in the country and, therefore, changing specifications would give it an unfair advantage. The consultant suggested that tenders be invited for both ductile iron and mild steel pipes for intermediate sizes. But, the BWSSB Chief Engineer asked the consultant to prepare contract documents for the use of ductile iron pipes only for the sizes below 1000 mm diameter. "His reasoning was biased as it changed the material specification of the pipeline below 1000 mm diameter to DI pipes in the entire country," the CAG report notes. (THE NEW INDIAN EXPRESS 020503, 030503)

And still HUDCO finance bails BWSSB out? Even as the ink of very critical CAG report detailing the widespread financial irregularities and corruption gripping BWSSB, financial institutions are eager to help out Board. The Union Minister for Urban Development has assured Rs 4.5 B loan for the BWSSB to take up drinking water projects in seven city municipals of Bangalore district. More dangerously, the HUDCO loan will be provided to the Board without any guarantee. (THE NEW INDIAN EXPRESS 290503)

URBAN WATER SUPPLY

Chennai water harvesting potential The average annual rainfall of Chennai is 1200 mm. In the last 100 years, the lowest rainfall was 550 mm. Assuming that the city receives 60 % of that lowest level which is 330 mm, it is possible to harvest two tmcft through methods such as roof top rain water harvesting and strengthening or reviving the existing mini-storage points. Besides, three tmcft can be generated through groundwater recharge, says a former Dy Director (Geology) in the state Groundwater wing and Institute of Water Studies. (THE HINDU 200703)

Bombay: Save water, don't build Dam Mumbai gets approximately 3000 MLD of water, 1000 MLD less than it needs. It has proposed to build Vaitarna dam costing Rs 20 B for supplying in Mumbai. But between 20% to 25% of the city's water supply leaks out from old, underground pipelines, amounting to more than 600 MLD, according to official estimates. The experts suggested that instead of investing in an expensive project, which will destroy so many trees and drown hundreds of acres of land, why couldn't the BMC just spend Rs 2 B on overhauling their pipelines.

➤ **Some waste, others feel the pinch** Ordinary Mumbaikars are reeling under a water crisis and the city's municipal body has already reduced supply by 10 %. The entire stretch of villages from Versova to madh and Gitanagar in Colaba get only a trickle for an hour between 2 and 4 in the morning. In another case, the BMC claims it spent Rs 4.7 M to supply water to Gorai village, but the residents allege they haven't received even a drop. And yet other parts of Mumbai are being inundated by water guzzling mega structures that include amusement and water parks, hotels and fancy bungalows. Just the two-dozen existing water parks in Mumbai and adjoining areas like Thane and Raigad use over 50 BLD of water. Of this, EsselWorld's Water Kingdome, which is spread over 10 Ha, gets over 7 BLD. "This is twice the supply to the whole of Mumbai" says Susheila Cardozo, director, Stree Shakti Sadan, an organisation that works with the fishing community. (THE TIMES OF INDIA 090503, OUTLOOK 260503)

Delhi 55% of DJB water lost in supply More than 55% of the capital's treated water never reaches its destination, according to the DJB estimates. This huge loss of over 358 MGD (179 MGD due to technical losses and the rest due to unauthorised tapping) causes a demand-supply mismatch of around 65%. This loss is much higher compared to around 15% in the developed countries. "In Delhi much of the physical infrastructure is very old and upkeep of pipelines requires considerable investment. An overhaul of pipelines is already on," a DJB official said. However, considerable loss take place at DJB's water treatment plants, estimated at around 10 - 15% of the total water supply. (BUSINESS STANDARD 010703)

CENSUS DATA ON DRINKING WATER SOURCES

32 M are away from the source The two Census data sheets (*Drinking Water Sources & Location and Improvements in Sources of Drinking Water, 1981-2001, A Perspective*) Published by Census of India says, "It is alarming that even at the commencement of twenty first century, about 32 M households at national level are dependent for drinking water on the sources *away from the premises*"; i.e. the source location is over 100 m away from the premises in the case of urban areas and over 500 m in the case of rural areas. Only two states (*Punjab and Kerala*) are richly endowed as far as drinking water facility *within the premises* is concerned, but surprisingly the source is not Tap but in Punjab it is *tubewell* and in Kerala it is *well*. And yet, the Census Data claims, "all habitations in the country, irrespective of their location have access to drinking water"! The claim is clearly contradicted by the other figures given by Census.

Development equals destruction of rivers? Shockingly, the Census Data Sheet says: "The dependence on river water is mainly restricted in the isolated, inaccessible and less developed areas of the states which may have permitted the river water to still remain safe and potable but this may not continue for long". This raises question if the Census equals development with destruction of river water quality and accessibility. Interestingly, a huge 65.8% of rural population in Mizoram depends on rivers or springs for their drinking water, the figure in the urban areas being 38.9%. The % of population depending on rivers and springs for drinking water is also high at 28.1% in Manipur, 26.1% in Meghalaya, 26.5% in Sikkim, 18.9% in J&K and 14.2% in Arunachal Pradesh.

Access to Tap water The growth in access to tap water in fact slowed down in the '90s compared to '80s. In urban areas, the accessibility to tap water has in fact plateaued out. Bihar reports a decline of nearly 11% in the accessibility of Tap drinking water during 1991-2001. During 1991-2001, large states such as UP, Assam and Orissa have also registered a decline in the proportion of households having access to tap water.

Wells are still in thing in Kerala Dug wells are generally on the decline as the ground water exploitation surges ahead with mechanisation. Still, in Kerala three out of every four households use well water for drinking purposes. Even in urban Kerala dependency on well water is high at 56 %. However, Census calls 34% overall decline on the dependability on well waters as "welcome and impressive", since the Census is biased towards shift away from Well to Tap and Handpump/ Tubewell as it considers such shifts as "improvement particularly in view of the natural contaminants and the rising level of chemical pesticides and insecticides in ground water".

Handpumps/ Tubewells The dependency on Hand pumps/ Tubewells as drinking water sources slowed down somewhat in the Nineties, possibly in response to depletion of groundwater levels. As a matter of fact, the Census figures clearly shows (see table below) that even though groundwater still remains dominant drinking water source at 59.5% in 2001, the dependency on groundwater has come down from 62.2 % and 66.9 % in 1991 and 1981 respectively. One lacuna with these figures is that some of the tap water comes from groundwater sources, but the Census figures not give division of figures in this respect. Still, even in urban areas, two out of three households in Bihar, two out of five households in UP and Assam and one out of three households in Punjab and W Bengal depend on this source of drinking water.

% Households dependent on Groundwater

State/UT	2001			Total 1991	Total 1981
	Rural	Urban	Total		
Jammu & Kashmir	21.3	9.4	18.3	N.A.	13.2
Himachal Pradesh	10.0	4.0	9.3	8.7	18.1
Punjab	82.3	32.2	64.8	69.0	70.4
Chandigarh	14.9	7.1	8.0	8.0	8.5
Uttaranchal	24.0	15.7	22.0	--	--
Haryana	59.8	26.4	49.6	49.3	63.8
Delhi	38.8	20.7	21.9	22.4	32.3
Rajasthan	68.9	17.5	57.0	59.6	66
Uttar Pradesh	88.0	44.5	75.7	68.5	80
Bihar	97.8	72.4	95.5	83.3	84.4
Sikkim	0.7	0.2	0.5	4	5.5
Arunachal Pradesh	15.3	11.5	14.5	12.2	9.9
Nagaland	36.9	53.7	39.4	37.4	37.7
Manipur	16.2	8.4	14.1	13.7	8.9
Mizoram	6.3	5.9	6.0	5.8	1.6
Tripura	71.7	42.4	66.3	65.6	66.2
Meghalaya	36.7	14.0	31.9	40.9	40.8
Assam	78.4	63.5	76.3	71.4	NA
West Bengal	91.3	42.1	77.1	76.6	73.9
Jharkhand	91.0	48.9	81.9	--	--
Orissa	89.2	51.7	84.1	75.2	63.9
Chhatisgarh	89.2	38.5	79.6	--	--
Madhya Pradesh	86.4	30.5	72.1	70.1	71.3
Gujarat	46.1	13.8	33.5	39.3	44.4
Daman & Diu	36.9	8.6	26.9	39.1	48.4
D, Nagar Haveli	70.1	62.7	68.1	71.2	58.5
Maharashtra	51.4	9.4	33.6	39.2	51.5
Andhra P	56.2	25.4	48.5	66.4	70.1
Karnataka	47.6	20.2	38.1	53.2	61.3
Goa	36.5	17.8	27.1	51.6	67.4
Lakshdweep	92.9	96.7	94.5	88.7	93.8
Kerala	80.1	59.0	74.9	77.4	77.5
Tamilnadu	36.1	30.1	33.6	50.7	56.6
Pondichery	9.8	9.1	9.6	14.5	26.2
A & N islands	23.4	1.9	16.5	22.4	29.1
India	71.1	29.0	59.5	62.2	66.9

RURAL WATER SUPPLY

Funds for Sector Reforms stopped The MoRD has decided not to release funds for the Sector Reform Scheme, a pilot project for drinking water, started in 1999-'00 and being run in 67 districts in 26 states, following reports of misappropriation of funds to the tune of several millions. The Centre's contribution to the Rs 20.6 B scheme was to be Rs 19.22 B. So far, the central govt has released Rs 6.31 B, each district receiving about Rs 400 M. But the results are not satisfactory in most cases. (THE HINDU 030503)

Himachal: Rs 1.5 B to augment water supply HP Irrigation and Public Health Minister said that all 574 hamlets would be provided drinking water facility in the current year. Although all 16 807 villages are claimed as having been provided with drinking water facility there were some hamlets where people had to go beyond 100 m to fetch water. Besides 574 non-covered hamlets, there were 8 877 partially covered hamlets where the quantity of water being supplied was far less than the norm. For providing adequate water to all partially covered hamlets Rs 6.5 B would be required. He said in all 12 000 handpumps had been installed and out of these 375 were non-operational. On water supply to Shimla, the plan to bring water from Pabbar River in Rohru involved Rs 6 B but it was gravity scheme and would not involve expenditure in lifting the water. The Giri scheme under which the water was to be lifted from the Giri River near Kotkhai would cost Rs 710 M and involve huge recurring expenses. (THE TRIBUNE 080503)

FISHERIES

Punjab: Fish production highest Animal Husbandry & Fisheries Minister said fish production in the state had touched 6 579.93 T during last year, which was the highest per Ha fish production in the country. The state had 5 726 fishery units covering 7 327.23 Ha, out of which 2 686 units have been set up in 3 084.36 Ha by the farmers whereas the remaining are panchayati village ponds covering 4 242.87 Ha. The dept had set a target of more 3 000 Ha to be used for fishery next year. (THE TRIBUNE 250503)

Karnataka: Fish from Kerala, Goa into rivers The Karnataka Minister for fisheries said that fish from Kerala and Goa would be led into the rivers of state to end the fish famine. The drying up of several lakes and rivers across the state has come as a severe blow to fisherman. Nearly 400 M fish are needed to substantially increase fish production in the state. A Rs 134 M project to develop inland fishing in Shimoga, Davangere Haveri, Dharwad, Raichur and Bellary districts has been approved. (DECCAN HERALD 070503)

Haryana: Bulk Water Rates for Fish farmers The govt has decided to charge bulk water supply rates from

fish farmers instead of commercial rates. The fish farmers now have to pay only Rs 40 instead of Rs 100 for using 2500 cubic ft of water. (THE TRIBUNE 110603)

Orissa: Dwindling fish stocks The illegal and rampant fishing for shrimp seedlings has driven fish stocks in Orissa to the brink of extinction, the Wildlife Society of Orissa has warned. Due to high prices the seedlings fetch, hundreds of fishing boats have abandoned their traditional fishing practices and can now be seen trawling with very fine mesh nets for shrimp seedlings near the Devi river mouth in Puri dist. The illegal trade is estimated to be worth Rs 2 B annually. Catching and trading in wild-caught seedlings of any fish species is banned under the Orissa Marine Fisheries Regulation Act, 1982. (ECOLOGIST ASIA APRIL-JUNE 03)

FOODGRAINS MANAGEMENT

Chronic hunger not a priority for State govts "The elimination of chronic hunger does not get anything like the priority it deserves in policy planning and budget allocations", according to the third report of commissioner appointed by the Supreme Court to monitor the implementation of several schemes aimed at providing food security to the poor. The commissioner was appointed following the writ petition filed by the PUCL, Rajasthan, in April 2001 asking that the huge footstock in the country should be used to check hunger and starvation. While noting that the Court's intervention has resulted in states taking measures to provide food to the poor, it says, "however, there has been virtually no response from state govts in states like Bihar and UP". Curiously, even though foodgrains are provided at subsidised rates to BPL families, the offtake by state remains low, prompting the Commissioner to ask for "urgent investigation and action". (THE TIMES OF INDIA 020503)

Starvation death state's liability The SC criticised Bihar govt for not taking adequate steps to prevent starvation deaths of its employees and said it cannot shift its liability to the Union govt or Jharkhand govt on the ground of financial stringency. The bench said that the state couldn't escape its liability when a human rights problem has taken place by the reason of non-payment of salaries to the employees of PSUs for a long time. The SC said, "It even failed to take any positive action even after coming to know of the starvation deaths and immense human sufferings". (THE INDIAN EXPRESS, BUSINESS STANDARD 130503)

Villages in MP on the hunger trail Between Shivpuri and Pohri in Chambal area of MP, a stretch of 35 kms of parched land, shows no sign of any economic activity. In Pohri, there were plenty of signs of the devastating effect of drought: falling wages, rampant employment, dry wells, dead cattle and a crippling recession. The situation gets even worse as one proceeds from Pohri to Chharch, near the Rajasthan

border. According to local activists, 52 'starvation deaths' occurred in this area in recent months. Around Chharch, most of the children are severely malnourished. In many villages people cling to the faint hope of being employed on relief works. But the relief works are few and far between, and wage payments are often delayed for weeks or months. (HINDUSTAN TIMES 210503, ALSO SEE EPW 030503, Pp. 1751-55 for an Inquiry into under nutrition and suspected starvation deaths in villages of Badwani district in Madhya Pradesh)

Kanpur farmers threaten suicide Caught in a cycle of debt and crop failures, hundreds of farmers in and around Kanpur in UP have threatened suicide. The farmers, who face burgeoning loans, are being chased by tehsil revenue collection teams to pay up. About 60 farmers who have defaulted on loans have already landed in different tehsil jails, hundreds others have gone underground. The odds have forced them to contemplate suicide if the govt does not provide them with relief. (THE TIMES OF INDIA 160503)

Irregularities in rice exports by FCI The govt has sought an explanation from the FCI for alleged irregularities involving Rs 4.55 B in rice exports by way of doling out excess allowance to traders. Irregularities involving undue benefits to private parties in sale of rice for export by way of excess allowance for "brokens" in 2001 and 2002 had been detected, govt sources said. The FCI granted an allowance of 2% for operational loss in sale of rice to traders for export. An extra quantity of rice (1.25 MT) on account of brokens in case of raw and par-boiled categories was also allowed. This in effect meant, the difference between the percentage of brokens in the rice issued by the FCI and that actually exported was provided additionally at subsidised rate to the traders. The Union Food Ministry had already ordered to stop any relaxation for broken rice last year. (BUSINESS STANDARD, HINDUSTAN 140503)

New grain export policy on anvil The Food ministry has referred a new foodgrain export policy proposal to commerce ministry. The govt has said that a new policy on foodgrains exports aimed at removal of logistical bottlenecks and to ensure India's long term presence in the world market is required. Total export offtake from the govt granaries in the 2002-3 is estimated at 12.2 MT including 6.935 MT and 5.268 MT of rice and wheat respectively. (BUSINESS STANDARD, THE ECONOMIC TIMES 050603)

SUGAR

RBI, NABARD deny aid to sick co-ops The RBI and NABARD has rejected the demands of fresh assistance to bail out 56 loss making sugar co-ops with unpaid arrears of Rs 20 B. The FIs and banks have Rs 19.5 B locked in the 56 loss making sugar co-ops. The sugar industries want the banks to go slow on the recovery

and insure fresh funds. NABARD has also turned down the industry's request seeking refinance for "sick, but financially viable" sugar co-ops. (THE ECONOMIC TIMES 270503)

FIRs against mills The Union ministry of finance has decided to file FIRs against 18 co-op sugar mills and 9 export houses for alleged diversion of sugar meant for export into domestic markets and causing a loss of revenue. This follows the Central Board of Excise and Customs taking a serious view of the entire matter and serving notices to them, "26 sugar mills in the jurisdiction of central excise, Pune could not furnish proof of having exported the sugar."

➤ Centre has asked Maharashtra govt to take actions against 12 sugar mills in the State and exporters, which were found to have diverted 0.109 MT sugar meant for export into domestic market. The directive issued by the Food Ministry to the Maharashtra govt follows a suggestion by the Union Law Ministry that the defaulting exporters can be prosecuted for violation of the Sugar (Control) order 1966, issued under the Essential Commodities Act. (THE ECONOMIC TIMES 270503, BUSINESS LINE 170603)

CAG sour about sugar fund According to the CAG report on Sugar Development Fund's operation, the govt has collected more than Rs 13 B from consumers to modernise the Indian sugar industry, but it has actually spent less than 30 % on actual development. The CAG questions now whether the govt should continue taxing consumers with a cess as high as Rs 14 per quintal collected as excise from the mills, to fatten the SDF created under the SDF Act 1982. It believes SDF's principal objective of encouraging farmers to improve yields and mills to improve technology has not been fulfilled due to mismanagement by the Ministry of Food and Consumer Affairs, which runs the fund. "The fund did not contribute to the growth, development, modernisation or rehabilitation of sugar factories and cane development as disbursements were 6 - 32% of the available funds, which ranged from Rs 10.81 B - 13.28 B during 1995-2001". So, while mills technically pay the cess, it is wholly passed on to consumers. The CAG has found after examining the functioning of the bloated SDF during 1995-2001 that: In 39 out of 64 loans for modernisation and cane development loans, the ministry did not release any loan though sanctions were issued 6 - 12 years back. In 145 out of 216 cases under these schemes, the gap between the releases of two subsequent installments was 1 - 11 years. A huge Rs 2.3 B, including interest and penal interest, was outstanding against various sugar mills as on 31 March '01. Maharashtra mills owe the SDF Rs 233 M in cane development loans, UP mills owe the SDF Rs 666.8 M in modernisation and rehabilitation loans. "Ministry did not devise any mechanism to closely monitor the status of recovery of dues," the CAG said. The CAG further

discovered that only 4 out of 22 research studies funded from SDF were completed. (THE ECONOMIC TIMES 140503)

Plan to review sugar mill The Board for Industrial Reconstruction has submitted a Rs 1 B project to the Bihar Govt for rehabilitation of the sick sugar mill and distillery. (BUSINESS LINE 090703)

Deadline for ethanol fuel supply The govt extended the deadline for mandatory supply of ethanol-blended petrol in nine major sugar-producing states and four union territories to Sept 30. (ECONOMIC TIME 020703)

POWER OPTIONS

Rajasthan thrust on wind power Encouraged by the results achieved in wind energy, the Rajasthan govt has renewed the existing policy for promotion of setting up of wind energy power projects through private investment. As part of the new policy the electricity generated from wind will be purchased at the rate of Rs 3.32 per unit. This rate will be valid for 10 years with the provision for escalation at the annual rate of 2%. The power capacity of 65 MW based on wind energy has been achieved in Rajasthan within three years. Rs 2.5 B have been invested so far by the private sector in wind energy in the state and 120 MU of electricity is being generated every year.

➤ Rajasthan has cleared projects with a combined capacity of 75 MW under the new policy. The govt is planning to invest around Rs 3 B in these projects. The state is to have 150—175 MW capacity by March '04. (THE HINDU 030503, BUSINESS STANDARD 180703)

Wind To Become World's Leading Energy Source?

A national wind resource inventory taken by the U.S. Dept of Energy in 1991 startled the world when it reported that the three most wind-rich states—North Dakota, Kansas, and Texas—had enough harnessable wind energy to satisfy national electricity needs. It was a surprising finding, but a new study by a team of engineers at Stanford reports that the wind energy potential is actually much greater than that estimated in 1991. Advances in wind turbine design since 1991 enable turbines to operate at lower wind speeds, to harness more of the wind's energy, and to harvest it at greater heights, dramatically expanding the harnessable wind resource. Wind power can satisfy not only all U.S. electricity needs, but all U.S. energy needs. Wind is popular because it is abundant, cheap, inexhaustible, widely distributed, climate-benign, and clean-qualities. These are the reasons why wind is likely to one day become the world's leading source of energy. (Earth Policy 210603)

Nepal Small Hydro There are 36 small HEPs that are generating 11.468 MW of power. The first major initiative by the Govt was the Small HEP Master Plan of 1990, launched in cooperation with Germany. (POWERLINE June 2003)

POWER PRIVATISATION

J&K Govt to take back canal power house On May 19, J&K state cabinet decided to take back the Canal Power House in Jammu from M/S Trehan Industries Corp to which it was transferred without observing basic formalities, rules, regulations and Cabinet approval. The Cabinet has ordered a thorough investigation into the entire process of handing over the powerhouse to a private party in violation of well-established procedures. Since the private party has claimed to have incurred expenditure on the project, the Cabinet constituted a 4-member committee to determine expenditure so incurred. The powerhouse was handed over by PDC to the private firm for renovation & power generation in Jan '02. (DAILY EXCELSIOR 200503)

TNSEB union demands PPAs cancellation Secretary of TNEB engineers' association said the cost of per unit power purchased from central generating stations and inter-state sources worked out to Rs 1.74 per unit, while the cost of power from the IPP worked out to Rs 4.19 per unit, as the IPPs used Naphtha, which costs Rs 17 000 per T against natural gas which costs Rs 4 000 per T. The TNEB incurred a loss of Rs 9.08 B by purchasing power from IPPs. While the cost of power generated by TNEB's captive power stations was 21 paise - Rs 2.14, the cost of power from IPPs was Rs 3.96 - Rs 5.27 per unit. (DAILY EXCELSIOR 090603)

ENRON SAGA

Dabhol, MSEB to freeze dispute The DPC and the MSEB have come up with a temporary agreement before the SC saying they would freeze their dispute till a decision was taken on this issue. DPC had earlier moved the SC against a Bombay High Court ruling in March '02, which had said the MERC had exclusive jurisdiction to hear the dispute between the DPC and the MSEB and the arbitration in London could not proceed. The HC had also granted an interim stay on Rs 1.34 B worth electricity dues claimed by DPC from MSEB for Dec '01. (BUSINESS STANDARD 060503)

POWER FINANCE

NHPC plans to raise \$ 350 M via ECB NHPC has sought offers from international banks like ABN Amro, Deutsche Bank, Stanchart and Credit Lyoans to raise \$ 350 M. NHPC has asked a consortium of banks for offering \$ 250 M for investment in the 520 MW Omkareshwar HEP in MP. Another borrowing of \$ 100 M is being pursued separately for repaying high cost loans. (THE ECONOMIC TIMES 170503)

PGC and REC to raise Rs 30 B and Rs 44 B Power Grid Corp and Rural Electrification Corp plan to raise Rs 30.4 B and Rs 44 B respectively. CRISIL has assigned AAA rating to both. PGC has raised rated bonds amounting to Rs 41.22 B in the past, while REC had raised Rs 96.65 B. (THE ECONOMIC TIMES 210603)

AROUND THE WORLD

Zhigong construction launched The construction of the 100 MW Zhigong HEP on the Lhasa River in Maizhonggar County in Tibet has been started. The reservoir capacity of the \$ 162 M project is to be 225 MCM. Construction is expected to take five years. (e WATER POWER 200503)

Greens, Regulators threaten Brazil HEPs The \$ 1.78 B Santa Isabel project in the Amazon basin, along with other HEPs, is at risk of being blocked, according to metals and energy management sources. "We are pessimistic as to when the environmental permit for Santa Isabel will be approved, or even if it will be approved," said a source close to Canelas, a company appointed to manage the 1 087 MW project. Another Amazon basin project, the 1 087 MW Estreito on the Tocantins river in Para state, is also seen far from a final go-ahead. (ENVIRONMENT NEWS SERVICE 020503)

Lesotho: German engineering firm convicted The Lesotho High Court convicted Lahmeyer International, a German engineering consulting firm, of paying \$ 0.55 M in bribes to the former chief executive of the multi-billion dollar Lesotho Highlands Water Project in exchange for favourable contract decisions. Lesotho Justice found Lahmeyer guilty of 7 out of the 13 counts for which they were charged. This is the second company to be convicted in the trial, which began in 1999. The Canadian engineering company, Acres International, was found guilty last year, but has appealed the decision. The water project's former chief executive, Masupha Sole, was also convicted of corruption, and is now serving a 15-year prison sentence. Lahmeyer International has worked on several controversial World Bank funded dam projects. They are currently involved in the Nam Theun 2 Dam in Laos, which is set to receive WB funding. "Like the Acres' verdict before it, the judgment against Lahmeyer throws into doubt the legitimacy of these companies' involvement in other large dam projects throughout the world," said Ryan Hoover of International Rivers Network. "We expect the WB to bar Lahmeyer and all other companies found guilty of corruption on the LHWP from participating in other WB-funded projects" said Hoover.

➤ Acres International lost its appeal of its Lesotho bribery conviction. The Court, however, upheld Acres' appeal against a second charge and reduced their sentence to a fine of \$ 1.9 M. (IRN PR 180603)

Spain: River networking plan criticised The Spanish counterpart of India's riverlinking project – which involves transfer of water from Ebro river in the North to river basins in Catalonia, Valencia, Murcia and Almeria in the South – is drawing flak. The protesters have cited a report on a similar project, the Tagus-Segura scheme to transfer water from Spain to the southeast part of the country, to substantiate their case. The report states how this plan has not been able to solve the original

water problem, as the availability of water has doubled the demand in the recipient basin. Establishment of golf courses have exacerbated the problem, observes the report. Black market consumption of water by diverting supply to tourist spots further adds to the woes. (DOWN TO EARTH 150603)

Nam Theun 2 in doubt Electricite de France, the lead investor in the Nam Theun 2 Dam in Laos announced on July 17 that it was withdrawing from the US \$ 1.1 B HEP. EDF's withdrawal from the WB promoted dam came just a day before the PPA between the consortium and the Electricity Generating Authority of Thailand was due to be signed. The withdrawal of EDF, the latest in the series of investors to pull out of the project, casts serious doubt on the dam's future. Thai Energy minister said in the wake of EDF's decision that his country would seek power elsewhere if there is no progress on NT 2 next year. Since 1989 the WB and ADB have encouraged Laos to borrow millions of dollars and devote large amounts of govt funds to attract foreign investors into hydropower. But, Laos' dreams of hydro-prosperity were badly shaken in 1997, when the Asian economic crisis sent Thailand's power demands tumbling. While numerous other HEPs have been on indefinite hold since 1997, the WB and NT 2 Dev consortium kept insisting that the project would be an economic boon. (WORLD RIVERS REVIEW AUG 03)

Three Gorges starts filling Water levels in The TG reservoir began rising on 1 June as Chinese authorities gave the green light for the sluice gates to be closed at the Yangtze river project. The reservoir level is expected to reach 135 m by 15 June, with initial power generation planned in Aug, as the first 700 MW turbine is put into operation. Three more generators, each with a 700 MW capacity, will come on stream during '03. By '09, when the project is completed, water levels are expected to reach 175 m. (INTERNATIONAL WATER, POWER AND DAM CONSTRUCTION 030603)

Dangers behind Three Gorges Dam The final go-ahead has been given for a new generation of four dams which are supposed to trap the silt on the Yangtze river's longest tributary, the Jinsha river. It lies on the edge of a recognised seismic zone, a potential danger not mentioned in the few published Chinese accounts. The feasibility studies for Xiangjiaba are "still being written up". The Jinsha River produces over half the sediment that will enter the TG reservoir, at an estimated annual rate of 330 MT. If unchecked this will seriously reduce the reservoir's lifespan and threaten the operation of the dam's turbines. Environmentalists fear it will be the death verdict on one of China's last untouched natural resources. Cao Wenxuan, an aquatic life specialist at the Chinese Academy of Sciences, has warned of the danger to the Yangtze River's ecosystem. "If the TG doesn't succeed in driving certain rare species to extinction, constructing more big dams will finish the job." (THE GUARDIAN 300503)

NEWS ABOUT BOOKS, REPORTS

Kasbe kaa Paani: a historical account of water management in Western Nimad (Hindi) By Rehmat, Mukesh Jat. Manthan Adhyayan Kendra. Badwani. July 2003, pp viii + 32 Rs. 20

This book brings to us an attempt to draw the historical account of water management practiced in a small down town place in Nimad, W Madhya Pradesh. Attempt has been made to document the traditional water sources, wells and *baolis* in addition to reporting the changing face of rivers: Bhongli and Susad. It also attends to questions about the evolution of water 'scarcity', asking questions regarding how the water harvesting structures were made to die out, how the river ceased to flow and got turned in a sewage drain, how the municipal authorities always looked at 'bringing water from distance' solutions. It also tries to discuss the alternatives that are available at local level, and in doing so it becomes a representative account of the water management for towns everywhere. A remarkable book on many counts.

Copies available from: Manthan Adhyayan Kendra, 119, satpuda Colony, Badwani. 451 551, Madhya Pradesh shripad@narmada.org

Dams: struggles against the modern dinosaurs

Ed. Hersilia Fronesca, World Rainforest movement. Uruguay, April 2003, pp 151

This book weaves together various articles published previously in the monthly electronic bulletin of World Rainforest Movement, addressing the issue of the impacts of large dams on forests and local communities, as well as the struggles against them. Though varied in the analysis and details, all the articles narrate the story of resistance and solidarity movements providing the bedrock for the struggles of vital importance for the survival of the local communities that live in areas where large dams are planned or already exist. What matters most is that though the work has been a result of the collaborative effort between WRM bulletin's editorial team and people and organisations working against dams, articles have a flavor of giving voice to the true protagonists, i. e. numerous local communities in the tropics and subtropics who protect their forests and livelihoods and firmly resist the massive destruction caused by large dams. (From the flap)

We will fight, we will win! *The importance of social network in the struggle against Maheshwar dam*

A joint Masters thesis in Political Science by Lotten Hubendick and Joakim Lindberg, Dept of Govt at Uppsala University, looks at socialising patterns in villages struggling against Maheshwar Dam in the

Narmada valley and analyses that how it affects participation in the NBA. Setting out to explore, how weak ties affect participation in social movement and whether bridging/ bonding social capital was beneficial for participation, the researchers traverse paths where by they come to notice that differences between men and women regarding their socialisation patterns do hold. However as they put it, "most important finding of our essay was that how these differences did not affect their level of participation in the NBA". They also point out how the mobilisation through a weak tie turned out to be the most important outcome.

Controversy over Kalabagh Dam *The Politics of Managing Water*, Kaiser Bengali, Pakistan

Kaiser Bengali has put together a volume *The Politics of Managing Water* that discusses the pros and cons of the dispute over the Kalabagh Dam. Kalabagh Dam was conceived in 1953 as a multi purpose project to store water in order to keep the water supply going in the lean months. The feeling that emerged from a seminar held on May 9, by South Asia Partnership was "Pakistan may meet its needs of river water shortage by reaching an agreement more easily with India than with its three states: Sindh, Punjab and NWFP. The deadlock over the Kalabagh Dam amid continuing wrangling between Sindh and Punjab about apportionment of waters has emerged as a bigger crisis. In 2000, as the existing dams have silted up by one third of their capacity the shortfall in water availability has gone up to 40 MAF and will go up to 108 MAF by 2013. Sindh says that since there is no surplus water in the Indus, why build additional storage? If stored, already scarce water will cease flowing to Sindh and turn the region into desert. Objections are raised against the measures under which the floodwater agriculture in Sindh would cease. (THE FRIDAY TIMES 090603)

"Declare water as a human right" *Water is Life*, EFICOR, 2003

A document "Water is Life", released by Evangelical Fellowship of India Commission on Refugees, said that though the primary responsibility of providing water lies with the Govt, the communities are "equally" responsible to conserve and manage water effectively. The organisation urged the Union Govt to work towards declaring water as human right. (THE HINDU 020503)

New Website www.riverlinks.nic.in: Rating: How do you rate a website if it has none of the information that it is supposed to have?

WE AWAIT YOUR RESPONSES

Thank you for sending us DRP that helps us get information about water conservation works in different parts of the country. *Krishi Evam Paryavaran Sansthan* has started a month long Clean *Talab* and water conservation campaign in govt schools in 50 villages of Bisanda block of Banda district of UP from Sept 15. This is with a view to create awareness among the students and young people about the traditional water sources and to preserve the traditional water conservation wisdom.

Suresh Raikwar, PO Tendua, Dist Banda, UP

I am receiving the DRP regularly and thank you so much for the same. It has been very useful for all our associates in different parts of Orissa.

For last few days coastal Orissa has been reeling under a severe flood and from this year's experience it is very clear that most of the floods in Orissa have been absolutely man made. The floods in Orissa have not much to do with heavy rainfall or a lot of water in its rivers. As usual whenever there is a flood in Orissa, State Govt come out with a memorandum to be submitted to the Centre requesting for relief grants and also with a proposal for building of few dams and embankments. This time also it is no exception. In this regard, we have written a letter to the Commissioner-cum-Secretary, Water Resources Dept, Govt of Orissa. It will be very useful to make a detail study about the causes of flood in Orissa and I shall be grateful if DRP can help in spreading word and so that some one can make this study. I am sure, it will be an eye opener for the planners.

Jagdish Pradhan, Sabhagi Vikas Abhiyan, Orissa

Thanks a ton for sending July-August issue of Dams, Rivers and People. It was a pleasant surprise. I found DRP very informative. It will help us to take up water related issues with students.

Rita Mishra, Smile- Burla, Orissa

I am working as Associate Professor in the Dept of Economics, HP University, Shimla. I am working on Decentralised Options in conservation of Water Resources in the economy of HP. I find the DRP of great importance to my ongoing work and would request you to include my name in the mailing list.

Dr Shyam P Sharma, Shimla, HP

I am a research scholar of Vinoba Bhave University, Hazaribagh and my topic encompasses "Impact of industrialization on the Damodar Valley Region which has lead to severe environmental pollution". I would like to get DRP as it would help my work.

KC Gaikwad, Bokaro, Jharkhand

We are pleased to congratulate you for publishing the seminar news of Media Network for Sustainable Development (MNSD) in DRP, Vol. 1 Issue 6-7. MNSD is an organization of water and development journalists. We are actively working in water and environmental issues in Bangladesh. We are very much interested to exchange data, Information and opinion of experts, both the government and non-government, politicians, journalists and people in connection with the proposed the river linking project of India. We are very much interested to get the copy of DRP.

Syed Shah Habib Ullah, MNSD, Dhaka, Bangladesh

I've been receiving SANDRP's "Dams, Rivers, and People" updates over the past year. I use information from these sources for teaching, particularly teaching undergraduate students about the world economy. These have been very important sources for my own learning as well.

Dr Carol Williams, Dept of Geography, S Illinois Univ, USA

DRP are providing a great service to India's long-term well-being.

Chandan Mahanta, USA

Errors

In July Aug 03 issue of DRP on page 28, you have published a report about Sheonath River. There is a grave error in the report. The opinion about fixing compensation at Rs 4 B has supposedly been given by the Law Dept, & not by the Advocate General. The two are entirely different agencies of the Govt. It's true that the matter was referred to the AG for his opinion, but I'm not sure if he has given any opinion so far. There is another error in the Para II of the report. Khodey's have signed MOU with CSIDC, but they are yet to set up their unit. They are not consumers of water as yet. Please take note of this.

Lalit Surjan, Chief Editor & Chairman, *DeshBandhu*

Many thanks for your alert reading of DRP and for pointing out the errors, stand corrected. The second inaccuracy pointed out by you in fact appeared in a front page report in Indian Express of 130403.

DRP

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