

Lead Piece

SARDAR SAROVAR

Drinking water allocations diverted to industries, non drought prone areas



It seems the worse fears of the critiques of Sardar Sarovar Project are coming true much sooner than expected. It is once again clear that all the propaganda of SSP being for the drought prone areas have been exposed for what it is: just plain propaganda, never meant to be realised.

The Comptroller and Auditor General of India in its report for the year ended March 31, 2006, which was tabled in the state assembly on March 30 has criticised the performances Gujarat Water Infrastructure Ltd and Sardar Sarovar Narmada Nigam Limited. The CAG report pointed out that the performance of GWIL in the implementation of bulk water transmission projects was found to be deficient in areas such as project planning, financing, implementation and pricing of water and internal control.

GWIL was incorporated in 1999 to implement 13 of the total of 39 sub projects under the main project, involving 811 km out of total of 2700 km project for supply of drinking water from Sardar Sarovar to Saurashtra, Kutch, North Gujarat and Panchmahals. The CAG report said:

- About GWIL: 'Laying of pipeline of larger diameter than specified resulted in unfruitful expenditure of Rs 1.64 crore.'
- "The Company's failure to obtain admissible excise duty exemption resulted in avoidable payment of Rs 1.36 crore."
- "Deviation from the tender specification for wire mesh used in gunniting steel pipes resulted in avoidable expenditure of Rs.1.08 crore."

In a series of shocking revelations in the report of the Comptroller and Auditor General of India for Gujarat (Commercial) for the year ending on March 31, 2006, which was recently tabled in Gujarat Assembly, it has been exposed that the drinking water meant for drought prone areas is being diverted in huge quantities to the non drought prone areas and for industrial use. Moreover, there has been huge increase in allocation for industries, clearly at the expense of irrigation for drought prone areas. All this has been done by the govt without even informing the people of Gujarat what is being done. The game is exposed.

- "The Company's failure to charge the recommended price for supply of water to industries resulted in loss of potential revenue of Rs.8.10 crore."
- "The Company made excess payments of Rs.49.17 lakh to the contractors towards construction of pump houses and interest amounting to Rs 51.43 lakh was short recovered on premature payments made to the contractors."

Continued on p 16

INDEX

Sardar Sarovar: Drinking water diverted for industries, others	1
The SEZ threat to water and food security	2
PAC report calls for cancellation of Sheonath WS Project	5
The Hindon River <i>Gaspings for Breath</i>	6
Struggles of the Bhil People for Access to water	7
Groundwater – A few Ignored issues	13
Call for Stay, Review of Athirappilly HEP	14
Vidarbha Irrigation Projects: PM Intervention justified?	15
HC stays closure of Omkareshwar dam gates	17
Dulhasti: The costliest HEP ever?	18
Allain Duhangan: Govt hand in glove to regularize violations	19
Regional Budget allocation in Maharashtra	20
Sugar: Any justification for the subsidies?	21
Ultra Mega Power Projects under cloud	22
HP gets 50% extra power for peaking power	23
<i>Restoring Daurala A</i> follow up from Janhit	24
PPCB advt on inaction on pollution of Budha Nullah	25
Punjab PCB threatens action: Advt of its failure	26
Decline in fish species in Yamuna	27
Mega Water Projects in Balochistan: Claims and the Reality	28
WB to fund Basha Dam in Pakistan	29
Nepal Page: ADB offers loan for 750 MW West Seti HEP	30
Dam Removal in California, US	31
Publications available with SANDRP, Revealing quotes	32

The SEZ threat to water and food security

The Special Economic Zones, which is posing big threat to the farmers and agriculture sector, is a completely anti people and anti environment scheme. It is also a threat to the water security and food security for the areas where SEZs are proposed and would certainly have an impact on the national agricultural sector. But the prime minister says SEZs are here to stay. On April 6, the Group of Minister gave green signal for notification of 83 more zones. The only concession the PM is ready to offer is what he calls a just, humane, effective R&R policy. The proposed policy would include a mandatory clause that the area notified for SEZs or large scale industrial projects should not touch existing residential/ dwelling units of villages.

THREAT TO ACCESS TO WATER In the entire din surrounding the impacts of the Special Economic Zones there is not much information on the impact of these zones on the water situation in the areas around these zones. The Finance Minister P Chidambaram has been credited with a very interesting statement, "Where infrastructure already exist, it is perhaps not necessary to crate SEZs". The trouble is, in backward areas where infrastructure is weak, the impact of SEZ on access to water would be even more serious.

Broadly, there are three kinds of impacts that SEZ can have on access to water for the people in the SEZ area. First would be due to the diversion of water for use within the SEZ. Second impact would be the impact of release of effluents from the SEZ. Here the situation at locations like Ankleshwar in Gujarat and Patancheru in Andhra Pradesh, among scores of other places is illustrative. At these places, the release of untreated effluents from the industrial estates has created a hell for the residents of the area. Our past performance in achieving effective pollution control is dismal, to put it most benevolently. And there is absolutely no movement to change that situation.

Thirdly, the conversion of land to SEZ would mean destruction of groundwater recharge systems. Moreover, it should be remembered here that in India, right to extract groundwater continues to be connected with the ownership of land. Hence SEZs even in relatively small area can pump out huge quantity of water, drying up the wells of the surrounding area. There could be conflicts between the zones and the local residents, as could be

seen at Plachimeda in Kerala, as also in Varanasi and Jaipur.

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Cumulatively, the impact of all these could be quite serious in most areas, and could precipitate crisis in the water scarce areas.

Land Requirement for SEZs According to the website of the commerce Ministry, totally about 41 700 ha of land is to be taken for the formally approved and notified SEZs. This looks like

a gross under estimate if we consider just a few large SEZs like the Nandigram SEZ (5 600 ha) in W Bengal (this has been cancelled by the W state govt, but the Chief Minister has said that it will come up elsewhere), Maha Mumbai (10 000 ha) and Navi Mumbai (5 000 ha) SEZs in Maharashtra, the Mundra SEZ (13 000 ha) in Gujarat, the Gurgaon SEZ of reliance (10 000 ha), the Pune SEZ (840 ha) and the POSCO SEZ (1 600 ha) in Orissa, to name a few known examples. When land is acquired on such massive scale, the water requirement for such SEZs would be huge and would have very large impact on water access for the surrounding area. The SEZs at such locations will also have impact on irrigation and agricultural development.

Water Sources The Govt of India SEZ Act of 2005 has no mention of the sources of water for the proposed zones, leave aside the question of restrictions or impact assessment. In fact, the only time the Act mentions water, it is in the context of territorial waters of India. The SEZ acts or orders or notifications of various states give a blank cheque to the water requirement for the zones. For example, the Gujarat Act says, "The SEZ developer will be granted approval for development of water supply and distribution system to ensure the provision of adequate water supply for SEZ units." Similar is the situation for other states.

Available information about the water needs and sources of water for various SEZs should ring alarm bells.

- **Mahamumbai SEZ** The massive water demand is to be met by the Hetwane and Morba dams in Pen and Khalapur tehsils in Raigarh district respectively, but there doubts about the capacity of Hetwane reservoir. Farmers had to struggle to get irrigation water due to them from the reservoir, but that won't be available now.
- **Navimumbai SEZ** As per official website, it will require at least 6 million liters per day, expects it to get from Hetwane dam.

- **Mundra SEZ** As per official website of the SEZ, it expects to get at least 6 million liters per day from the Sardar Sarovar project, as promised by Gujarat Water Infrastructure Ltd. Ultimate water requirement would be 400 million litres per day. Here it is relevant to note that the report of the Comptroller and Auditor General of India for Gujarat for the year ending on March 31, 2006 has already criticised Gujarat govt for extra allocation of 255 million litres per day water from the Sardar Sarovar Project for central Gujarat areas for which there was no provision in the plans. Moreover, the govt has allocated more water for industries in Kutch, which would also have impact on access to water for the drought prone areas, as clearly indicated by the CAG report.

- **POSCO SEZ** The water requirement, as given on the POSCO website, is 286 million litres per day, will be procured from Jobra barrage on Mahanadi River in Cuttack district in Orissa. The water for this is bound to come from the upstream Hirakud dam. There is already an agitation against reservation of water from Hirakud dam for industrial use.

- **Nagpur IT Park SEZ** The official website says "The water will be drawn from irrigation project" in a document inviting express of interest.

- **Mangalore SEZ** In a letter in June '06 to the Prime Minister Manmohan Singh, the convener of the SEZ Impact Assessment Committee, an affiliate of the NGO Forum of Mangalore has quoted the Mangalore SEZ Limited having estimated the water need at 136 million litres of water a day. When Mangalore city is facing water crisis without the SEZ, one can imagine what will be the case when SEZ comes up.

- **Cochin SEZ** The website of the Cochin SEZ (www.CSEZ.com) says, "The Special Economic Zone is a foreign territory within India... CSEZ has an integrated water management system comprising a 1.5 MLD water supply system."

One can already see the seeds of conflict that these water allocations would create. If these tips are any indication, implementation of these SEZ will create crisis of access to water for the people staying in areas around the proposed SEZs.

Promise of National R&R Policy holds no water The PM promised on January 11, '07 at a FICCI meeting (of all places) that within three months a "humane" National Policy for Rehabilitation and Resettlement will be formulated. The trouble is that his government's track record is very bad on that issue, like most other issues affecting common people of the country His govt has not bothered to implement the first ever National R&R

Policy, notified in Feb 2004, which does not lend any credibility to his words.

Further to show how non serious the govt is about R&R, on March 21, '07, the Union Commerce Ministry notified some changes in the SEZ Act, stating among other things, "the developer shall make adequate provision for rehabilitation of displaced persons as per the relief and rehabilitation policy of the state government". The trouble is, no state has a just R&R policy that is legally mandatory.

Private enterprise a public purpose? In a highly questionable move, the govt intends to expand the

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definition of public purpose to include "to help private enterprise", in addition to the current "strategic interest" and "center's and state's infrastructure", and thus get right to acquire land for private projects. But this is most shocking, as how can the govt equate private projects as public purpose? This will also be

unconstitutional. The impression among everyone in the country that the govt, hand in glove with the private industries and real estate developers, is out of cheat the common people out of their lands at any cost, is entirely correct.

Among the changes affected by the Group of Ministers in SEZ policy on April 6 is one that says that the private developer will acquire the land and the state will have marginal role in land acquisition. This is unacceptable, as this would leave the farmers at the mercy of the private developer. In the negotiations between the millionaire and paupers, it is well known who will win.

No Land Use Policy in India No state in India has a land use policy, only a couple of states like Kerala have a draft policy, yet to be converted into a Land Use policy. In absence of land use policy, it is free for all and there is no coordination between agricultural development, water resources development, forest and wildlife conservation and other uses of land.

Protests in W Bengal Nandigram is the most well known face of protests against SEZ projects in W Bengal, though it is not the only one. Protests are also rising at Haripura where the govt wants to set up a huge 10 000 MW nuclear power project as SEZ. In Nandigram in Medinipur district, the govt wanted to acquire 5600 ha of land for setting up chemical industries SEZ. The W Bengal govt is so adamant on setting up such SEZs that at Nandigram, the police and armed CPM activists together attacked thousands of innocent women,

children and other people and killed 15 people and injured hundreds of others.

Protests in Maharashtra The Govt of Maharashtra has issued a land acquisition notice to acquire 10 000 ha land of 45 villages in Pen, Uran and Panvel talukas of Raigarh district for the proposed Mahamumbai SEZ by Reliance. But farmers here have been strongly agitating against this proposal, refusing to give any land for the project. In Pen taluka there are people displaced by the Koyna dam, still without potable water, living in miserable conditions, punching holes in govt's claim of rehabilitation. Adjacent to this land, the company, in joint venture with the Maharashtra City and Industrial Development Corporation, is acquiring 5000 ha for Navi Mumbai SEZ.

At Maan near Pune, where the govt plans to acquire 800 ha of land for industrial zone, a strong protest by the farmers, fisherfolk, salt pan workers and other affected persons demanded scrapping of the SEZ on April 5.

Food Security Threat The SEZ Act, by allowing acquisition of (so called single cropped) agricultural land for such zones, is threatening food security of the country, with the stagnation of food production and reduction in yields for a decade, even with the SEZs. BJP's Kashiram Rana, Convener of Parliamentary committee on SEZ says that the policy needs to be scrapped and no agricultural land should be allowed to be used for SEZs. However, his words do not hold too much credibility as in a number of states like Gujarat, where BJP is in power, agriculture land, even in Sardar Sarovar Project Command area is being taken for SEZ.

Large scale Mangrove destruction in Gujarat In the 13 000 ha Mundra SEZ in Kutch in Gujarat, 3000 ha area is covered by Mangroves, which are already being destroyed for the SEZ. Gujarat Forest Dept has raised an alarm over this destruction. Mangroves are also facing destruction at a number of other locations in Gujarat due to industrial expansion along the coast in Kutch, Saurashtra and South Gujarat. Potentially the largest SEZ in the country, the Mundra SEZ will destroy fisheries and livelihood of large number of fisherfolk and they are protesting against the SEZ. On Feb 14, '07, five members of the community have filed a petition before the Gujarat High Court. Nine villages have also lost their grazing land to the SEZ.

Protests in Haryana People of Gadauli Khurd village near Manesar in Gurgaon District in Haryana on March 28, '07 opposed the possession of land by the govt to hand it over to Reliance group (Mukesh) for SEZ. The officials had to beat a retreat, but threatened to come back to dispossess the people. On April 1, the farmers of Khandsa, Narsinghpur, Mohammedpur, Gadouli and Harsaru village took a collective decision not to give the 558 ha of land to the Reliance as the govt had taken the

land in 2003 in the name of industrialization in public interest and decided to move court. Kuldeep Bishnoi, a Member of Parliament has decided to sit on hunger strike against the project. The proposed SEZ in Gurgaon violates the norm finance minister has proposed that SEZs should be taken up only in backward areas.

At Jhajjar in Haryana, Mukesh Ambani group plans to set up a 10000 ha SEZ in partnership with Haryana Industrial Development Corporation, but after the decision of GoM on April 5 to limit the size of SEZs to 5000 ha and taking away the role of state to acquire land for SEZ, this SEZ is in some trouble.

PIL in Rajasthan HC In response to a public interest petition questioning the manner in which the Mahindra World City SEZ was formed near Jaipur, the Rajasthan High Court has issued notices to various concerned including the Union and state govt.

What justification for subsidy to industries The SEZ provides a large amount of subsidy to the industries and there is absolutely no justification to provide any subsidy to industries. Even agencies like the IMF and ADB have questioned the need to provide subsidies to industries. In its report *Asian Development Outlook 2007*, ADB says the subsidies are expensive, unnecessary and would provide disincentives to the units outside SEZs and also would make the landless people the worst affected.

Projects so far So far, the board of approvals in the commerce ministry, the single window clearing house for the SEZ has approved 237 projects, of which 63 have been notified, 60 are awaiting notification and the CMs have been pushing their case. On April 5, the group of Ministers approved notification of 83 more SEZs, limited the size of SEZ to 5000 ha, asked state not to acquire land for SEZ and said that one member of each of the displaced family will be given employment. However, there is no clarity how this will be implemented. Another 160 odd applications have received first stage clearance as the developers do not have land in their possession. There are 325 more applications that are pending. It is clear that SEZ are going to remain a very big threat to the farmers and agriculture of the country.

On World Water day this year, the Prime Minister said, "we cannot allow human societies to descend into chaos due to conflict on utilisation of water resources". Action speaks louder than words, Mr Prime Minister.

Let us see what his govt does to address the conflicts that SEZs are creating. A lot needs to be done to ensure that water use at these SEZs do not become seeds of bigger crisis in the days to come. Going by the track record such hope does not seem realistic. (The Business Line 090706, India Together 271106, The Economic Times 220307, 270307, 280307, 300307 The Times of India, 230307, 240307, 020407 The Hindu 240307, 060407 Down to Earth 310307, The Tribune 290307, *Dainik Bhaskar* 030407)

Public Accounts Committee of Chhattisgarh Assembly**Call for Immediate Cancellation of Sheonath Privatised Water Supply Project & Initiation of Criminal Proceedings against Responsible Officials**

The Public Accounts Committee (2006-7) of the Chhattisgarh Assembly, in its 64th Report, tabled on March 16, '07 has recommended that the Agreement & Lease Deed between MP Audhyogik Kendra Vikas Nigam (MPAKVN), [now Chhattisgarh Rajya Audhyogik Vikas Nigam CRAVN] and Radius Water Ltd for the Sheonath Water Supply project must be cancelled within a week of tabling of the Report & that all the assets & the ownership of the project must be taken back by CRAVN.

It has recommended initiation of criminal proceedings against the then Managing Directors of MPAKVN (Raipur) and MP State Industrial Development Corp Ltd & the Chief Engineer of MPSIDC for conspiracy to damage the interests of the Govt & transferring to a private agency Govt properties through manipulation & forgery of documents. It has recommended registration of an offence against the CEO of Radius Water Ltd for participation in this criminal conspiracy & gaining profit by causing harm to govt properties. So far, there is no action from the state Govt.

Background In 2001, Radius Water, a local private company was given a concession to build a dam across Sheonath river, for supplying water to the industrial estate of Borai, near Durg city in Chhattisgarh on Build-Own-Operate basis. Once the contract was signed, the owner asserted his rights to the 23.6 km water reservoir, banned the locals from using the waters, and was supported by the state in this. The villagers who used to fish in the river, who used the river ghats for bathing, who took water from the river for growing vegetables & depended on the river for other needs lost access to the river. Intense local struggles, supported by nation-wide campaigns challenged this.

The project was also criticised widely for its extremely skewed terms unduly favoring the private party. Its take-or-pay clause, that required the Chhattisgarh Govt to pay for 4 Million Litres water per day (MLD) regardless that demand was less than this, was seen as causing severe losses to the Govt since the inception of the project till date as the demand for water has been far lower.

It was the wide criticism of the project and an agitation during Dec '02 that prompted the Public Accounts Committee, headed in 2005-6 by Dr Ramchandra Singhdeo and in 2006-7 by Shri Ravindra Choube to take cognisance of the matter. In its meeting of 6 Jan '03, it decided to look into the project. It submitted a note to the Speaker of the House on 9 Jan '07 requesting permission to examine the matter. It proceeded with the enquiry on getting permission from the Speaker.

Findings and Recommendations Some of the key Findings and Recommendations of the Report are:

1. The department did not take any interest in making available to it relevant documents during the inquiry. On repeatedly asking, incomplete and differing documents were made available to the Committee.
2. From the reports and evidence presented, the original objectives and rationale based on which it had been decided to start a water supply project as a joint venture (with HEG), were sidelined and the Managing Directors of MPSIDC and MPAKVN (Raipur), through a deliberate and well thought-out strategy forced HEG out of the picture for furthering their personal interests.
3. The biggest consumer of water in the industrial estate was HEG and that is why it was interested in the project. The original agreement with HEG was also relatively favourable to the Govt. In spite of this, by not finalizing the beneficial project with HEG but rather reaching an agreement on unfavorable terms with a private agency with no previous experience of water supply projects, in violation of rules completely destroyed the objectives and rationale of the project. As a result, the Govt had to bear losses from day the one.
4. The MPAKVN (Raipur) did not have authority to hand over to a private company a responsibility of water supply. Further, to hand over to the private company assets worth over Rs 5 crores on the token rate of Rs. 1 without the permission of the Govt was a well thought-out conspiracy to cause loss to the Govt.
5. How did a completely different company come into the picture in place of the earlier tendering company within a span of 24 hours? The Govt failed to explain this. The Committee considers this a criminal act leading to undesirable profits in violation of procedures.
6. The then Managing Director of MPAKVN, GS Mishra, who signed the agreement with Radius Water Ltd on behalf of MPAKVN overlooking all facts & keeping the Govt in the dark has committed a criminal act.
7. The Agreement assures Radius Water payment for minimum of 4 MLD. The demand of 4 MLD did not exist on the day of the agreement. Hence it was inappropriate to guarantee payments for a minimum of 4 MLD. The demand ranged between 1.14 and 2.4 MLD. In case Radius Water Ltd was not able to supply the minimum 4 MLD, then it was to be charged a penalty of Rs. 3000 per MLD deficit. However the rate that was being paid to the company was Rs 12600 per MLD.
8. The MPAKVN (Raipur) has handed over completely for 20 years a natural resource of the villagers, namely the Sheonath River and land worth crores of rupees.

Protests On March 12, large no of people participated in Raipur demanding publication of the PAC Report. This public pressure helped in getting the report public. Stronger public pressure will be required to make the govt implement the recommendations. (PAC report, Nadi Ghati Sangharsh Samiti, Note by Manthan Adhyayan Kendra)

The Hindon River *Gasping for Breath*

The Janhit Foundation, Meerut (UP) has come out with an important research paper on pollution of the Hindon River, titled *Gasping for Breath*. A wide range of highly toxic organo-chlorine and organo-phosphorous pesticides (sourced from agriculture practices) and heavy metals (from industrial effluents) have been identified at levels that exceed national and international norms. The impacts of pollution of the river and the groundwater on the health of those living within the catchment are highlighted. The commendable study calls for immediate action from govt to stop this pollution.

The Hindon River basin

Rising in Saharanpur district in the lower Himalayas, the Hindon River (260 km long) and its tributaries (including the Kali River and the Krishna River) flow through six districts of Uttar Pradesh (Saharanpur, Muzaffarnagar, Meerut, Baghpat, Ghaziabad and Gautambudh Nagar) before its confluence with the Yamuna River.

The Hindon basin comprises of six watersheds as per Central Ground Water Board website (www.cgwb.gov.in), details are given in the table below.

Watershed	Tributary	Toposheets	Area, sq km
YMNU021	Hindon	53 F, G	617
YMNU024	Hindon	53 F, G	1085
YMNU025	Hindon	53 G	922
YMNU026	Upper Kali	53 G	753
YMNU029	Hindon	53 G, H	1968
YMNU034	Kali	53 G	993
TOTAL			6338

All the watersheds are entirely in Uttar Pradesh, except Upper Kali, which falls in Uttaranchal and Uttar Pradesh. It is interesting to note that in the entire Hindon basin there is no large dam or large hydropower project. And yet the condition of the river is so toxic.

According to UP Irrigation Dept website (www.irrigation.up.nic.in), the Hindon-Krishni Doab Project, started in 1997-98, was completed in 2003-04 with funding from Accelerated Irrigation Benefits Programme. It uses water from the Hindon, the Eastern Yamuna Canal (Kallarpur) and Loyi Rajbaha to Irrigate 11600 Ha in 100 villages in Muzaffarnagar and Baghpat districts. The estimated cost of the project at inception was 39.24 crores when cleared by Central

Water Commission order dated 10-07-98. It was inaugurated on January 15, 2004 when the cost was over 100 crores.

The findings The study includes water quality analysis of surface water from 22 locations and groundwater from 12 locations. The samples were analysed for physical, chemical and biochemical parameters. The results are quite shocking. For example, the surface water was found to be contaminated with pesticides at every one of the locations. Similarly every one of the groundwater

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samples were found to have Lead metal levels much higher than the WHO standards. The groundwater samples from all the villages had pesticides above the lenient BIS norm of 1 micro gram per litre (considered acceptable where there is no

alternative source of lean drinking water). This should be alarming as groundwater is the main drinking water source in villages.

Implications The implications of these findings are quite serious. The study also did a health survey in the villages where groundwater analysis was done and found that 14% to 42% of the populations were suffering from serious or debilitating illness. The illnesses sampled included cancer, skin problems, neurological disorders, heart disease, digestive and respiratory disorders. In these seven villages, over the last five years alone, some 107 deaths of people have occurred due to such contamination. The study extrapolates that similar results are likely to be found all across the Hindon River basin.

The surface water was found to be contaminated with pesticides at every one of the locations. Every one of the groundwater samples was found to have Lead metal levels much higher than the WHO standards. The groundwater samples from all the villages had pesticides above the BIS norms. This is alarming as groundwater pollution is practically irreversible.

The report makes many recommendations, including immediate closure of polluting units and moratorium on new units in the basins. One crucial recommendation missing in the report is a demand that local communities must have significant role in pollution control, as without that it has been impossible to achieve

effective pollution control.

Action The Janhit Foundation filed a petition base on findings of the report in the Supreme Court of India, but the Supreme Court has asked it to file the petition in the UP High Court. The organisation is now planning to file a petition in the Allahabad High Court.

Struggles of the Bhil Indigenous People in Jhabua for Access to Water

Rahul Banerjee

In April '06 hundreds of Bhil adivasi indigenous people under the banner of *Lok Jagriti Manch* sat in a dharna in Bhopal demanding that the unjust recovery of loans advanced to them by financial institutions for lift irrigation schemes that had failed due to no fault of their own be stopped. They said they had proof to support their claim that the lift irrigation schemes had been based on faulty water resource planning arising from treating water not as a source of life as the Bhils had done for ages but as a source of profit. Eventually after ten days the Govt of Madhya Pradesh partially yielded to their demands staying the recovery of the loans and a detailed investigation into their claims was ordered. Indeed globally the commoditisation of water

has led to the problem of serious water scarcity, which is becoming more acute with time. Under the circumstances the innovative ways in which the Bhil adivasis in Jhabua have fought this deleterious process are worthy of a study.

Background The district of Jhabua in the south-western corner of Madhya Pradesh is home to the Bhil adivasi or indigenous people with the various sub-tribes like Bhil, Bhilala, Patelia and Mankar together constituting 86.8 % of the total population (Census, 2001). The district forms a unique agro-climatic zone called the Jhabua Hills in the southern part where it is part of the Vindhya hill ranges and drains into the River Narmada. The northern part of the district forms the undulating hilly edge of the Malwa Plateau and the eponymous agro-climatic zone and drains into the River Mahi. The top soils are mostly light and lateritic with some fertile patches of the medium black variety. The underlying rock structure is mostly archaean igneous with some hard rock, deccan trap basaltic and sedimentary formations in patches. The first two formations have low primary porosity and permeability and so the groundwater aquifers have poor water retention capacity. While the deccan trap and sedimentary formations are better aquifers they are few and far between (GOMP, 2002). Thus the terrain and the underlying geological structure together result in most of the average annual rainfall of 829 mm running off during the monsoons and consequently the net groundwater availability is 519 million cubic meters (MCM) per year.

Traditionally the Bhils lived by practising shifting cultivation, hunting and gathering in the dense forests that used to cover the terrain. A combination of the reduction of the fertility of their farms and epidemics would cause them to move every few years to new

locations. Living at subsistence levels and being heavily dependent on physical labour they had no alternative to being integrated into tightly knit communities by customs of labour pooling in most aspects of their material and cultural life. The egalitarianism of the Bhils, apart from the usual patriarchal aberration, was further ensured by customs that decreed that surpluses accumulated

beyond a certain limit be spent on communal merrymaking and feasting. This also did away with the possibility of these surpluses being used to develop agricultural and artisanal production and engage in trade and further accumulation and so protected the environment from over exploitation. This aversion

to trade also meant that they eschewed the abstractions of literacy and numeracy and remained firmly down to earth and developed a rich oral animistic culture with nature at its centre. Thus there was no commercial value attached to natural resources and especially water. The terrain and the kind of agriculture they practised discouraged the development of irrigation. Nevertheless using their own ingenuity the Bhils developed a unique irrigation system that involved the construction of temporary weirs on the hilly streams and then the diversion of water into channels with lesser gradients that over a distance of a few kilometres brought the water into their small farms by gravity.

Independence in 1947 brought in massive changes into this subsistence livelihood of the Bhils of western Madhya Pradesh. From 1949 onwards a process of land settlement was started with the aim of stopping shifting cultivation. The state of Madhya Pradesh was formed in 1956 from an assortment of former princely states and British administered areas in the central Indian region that were left unclaimed by the other more articulate linguistic sub-nationalities. The Indian Forest Act 1927 was then extended to the adivasi areas in Jhabua which had formerly been out of its purview being ruled by minor princely states. The act was strictly enforced totally stopping shifting cultivation. The forests began to be worked for fuel and timber for the development of industrial and urban centres in Western India. Timber contractors in collusion with corrupt Forest Department staff began indiscriminately decimating the forests. This put the adivasis in a difficult position. They could not shift to newer locations any more as the fertility of the soils decreased and simultaneously the massive deforestation meant that the supplementary income and nourishment from minor forest produce also went down.

In April '06 hundreds of Bhil adivasi indigenous people under the banner of *Lok Jagriti Manch* sat in a dharna in Bhopal demanding that the unjust recovery of loans advanced to them by financial institutions for lift irrigation schemes that had failed due to no fault of their own be stopped. They said they had proof to support their claim that the lift irrigation schemes had been based on faulty water resource planning

The destruction of the Bhils' agricultural base and their loss of control over the crucial natural resources of land, water and forests in the western Madhya Pradesh in fact, have a long history. Under pressure from the Mughals and the Rajputs from the sixteenth century onwards they had first to give up the more fertile lands of the Malwa plateau and Nimar plains bordering the lower Narmada river valley and recede into the forested hills to cultivate sub-optimal lands. This process gained in momentum with the increase in trade and settled agriculture as more and more forests on the plains were cleared and brought under the plough.

The British accelerated this transformation by laying railway lines from the decade of the 1860s and thus opening up these areas further to trade and the penetration by sahumars or moneylender traders who also doubled as tax collectors into the remotest regions. The loss of access to forests and agricultural lands, the burden of heavy taxes and the exploitation of the sahumars had destituted the Bhils even prior to independence.

Following on the national policy in this regard the concentration of govt finances after independence on industrialisation and the promotion of green revolution agriculture on the more fertile lands belonging to non-advansi farmers in the river valleys to the neglect of the much wider dryland areas of the Bhils in the upper watersheds has further skewed the resource access pattern of the region against them. The benefits of the green revolution were cornered by the sahumars, who traded in the inputs and the increased output and also made super profits from lending at usurious interest rates. The large farmers too benefited immensely by earning huge surpluses from low production costs due to state subsidised supply of inputs and the use of their extra-economic powers over the advasis to keep wage levels depressed. The lack of state support for research and development of indigenous crops suitable to the harsh topographies of the Bhil homelands has further weakened their economic base. Thus the Bhil advasis have remained in the clutches of sahumars who dominate the rural markets of the region exploiting the former through un-remunerative prices for their produce, exorbitant prices for the agricultural inputs and usurious interest rates on loans advanced to them. Consequently most of the Bhil advasi peasants have to rely on migration either permanent or seasonal to make ends meet. This in turn means that their labour which is the

only asset that they have and which was previously being used on their farms is now being expended in building the assets of other people in other areas which are already better developed adding to the injustice to the Bhils.

Moreover, motorised Lift Irrigation Schemes (LIS) have been implemented on a large scale, ostensibly to make up for this injustice, with scant regard as to the sustained availability of water in streams and rivulets given the heavily deforested condition of the area. The sustained availability of adequate electric power to run the motors was also not considered. This short sightedness with regard to the future availability of water and power has led to these schemes having boomeranged adding further misery to the precarious livelihoods of the Bhils.

The most glaring failure of planning has taken place in the sphere of the management of water resources. The proper way to go about managing the surface and sub-surface water flows in a river basin, especially in dry land areas is to start from the ridges of the topmost micro-watersheds that constitute the catchment of the river and then work down to the river itself. It is economically much cheaper, socially more

just and environmentally much safer to do this than build big dams, which should only be constructed if necessary to service the needs that cannot be met through in situ water conservation and extraction. Instead two large dams have been planned and are under construction on the rivers Narmada and Mahi, which will serve the non-advansi people in control of the plains lands leaving the advasis literally high and dry. Moreover, motorised Lift Irrigation Schemes (LIS) have been implemented on a large scale, ostensibly to make up for this injustice, with scant regard as to the sustained availability of water in streams and rivulets given the heavily deforested condition of the area. The sustained availability of adequate electric power to run the motors was also not considered. This short sightedness with regard to the future availability of water and power has led to these schemes having boomeranged adding further misery to the precarious livelihoods of the Bhils. It is these schemes, which underline the marginalisation of the Bhil advasis that are the subject of the present study.

Community Lift Irrigation Schemes There was a review in 1975 of the general failure of development in advansi areas all over the country similar to that in the Bhil homeland after which the Central Govt introduced a new Tribal Sub Plan under which special programmes were started in the three crucial sectors of agricultural development, education and health. The National Bank for Agriculture and Rural Development was constituted in 1982 to give a thrust to rural development and a new Integrated Rural Development Programme was started to give subsidised loans to families living below the poverty line to start some income generating activity. A new scheme was started under this programme in Jhabua district in 1989 to improve the agriculture of the advasis through enhanced irrigation facilities.

The scheme was kicked off in the southern Alirajpur Tehsil of Jhabua district and high power motors and accessories like pipelines were made available to draw water from streams and rivers on a community basis. The expenses of taking water from streams and rivers to farms situated at a distance are relatively more than the economic capacity of an individual adivasi and so he is not able to avail of irrigation. That is why the loans available to individual adivasis under IRDP were pooled together and community lift irrigation schemes were started. It was also thought that this would lead to an increase in the cooperative endeavour among the adivasis. The initial success of the scheme led to the district administration pushing the scheme on a large scale throughout the district. This is what led to the scheme being implemented in all the other tehsils. A decade after the implementation of the schemes it became clear that while there has been some successes most of them have been failures. The adivasi members of the unsuccessful schemes now have a heavy debt burden on their shoulders. The Damocles sword of repayment of their huge debts, failing which forfeit of their minimal land hangs over their heads.

Objective of Study Given the vast socio-economic and cultural gulf between the adivasis and the modern system it was inevitable that they would suffer rather than gain from modern development. Provisions had consequently been made in the Fifth Schedule of the Indian Constitution that the Governor of a state can with the advice of the Tribal Advisory Council consisting of adivasi Members of the Legislative Assembly prevent the implementation of laws and development policies being followed in the rest of the country in the adivasi majority areas notified under this schedule and prepare special laws and plans for these areas. But the irony is that this hasn't been done and so like in other Fifth Schedule areas of the country in Jhabua too the Bhils are alienated from their traditional resource bases and lifestyle and are also bereft of the facilities and resources required for modern development.

In Madhya Pradesh it had become clear very early that the adivasis were not being able to benefit from the loans advanced to them under various schemes because their planning and implementation were faulty. This in fact has been a major cause of failure of the IRDP all over the country. So in 1979 the MP Determination of Liability Rules were framed by the Scheduled Tribes and Scheduled Castes Welfare Department of the Govt of MP to be applicable in the Fifth Schedule adivasi areas and it was acknowledged that - "Till the adivasis do not become familiar with the formalities and complexities of the working of the

economic system it is necessary to protect them from unknown and unwarranted liabilities and there is a need to institute a higher level system for resolution of disputes regarding such liabilities between the simple adivasis and powerful financial institutions". Under these rules a procedure was established such that if it could be established conclusively that the adivasis are not responsible for the failure of the schemes then they would be freed from the liability of repaying the loans as a measure of social justice.

Like in the case of the big dams on the Narmada River where too the protesters under the NBA had to use the methods of economists and engineers to expose the fallacy of the logic of the projects here too the adivasi mass organisations had to become more versatile and double up as economists and statisticians.

Several mass organisations of the Bhil adivasis had been agitating against various issues regarding their deprivation and marginalisation in Jhabua district from the early 1980s including in the form of the

long drawn battle conducted by the Narmada Bachao Andolan (NBA) against the construction of the Sardar Sarovar dam on the River Narmada.

The move by the administration to recover the dues on the failed LIS in gross violation of the laws and policies detailed above came as the last straw in a long line of illegalities and injustices committed against the adivasis. The Lok Jagriti Manch held a series of group meetings in villages throughout the district in 2003 to find out the real reasons for the failure of the LIS. These group meetings revealed that the main factors behind the failure of the schemes were:

1. The streams and even the Mahi River, which were the main water sources had dried up after a few years in the crucial winter season when irrigation is most required because of the large number of LIS that came up on them. So most of the schemes had not worked after the first year or two.
2. The power supply to the motor pumps was highly irregular and of so low a voltage that the high power pumps either would not run at all or would get burnt out.
3. Qualified engineers of the Govt had not designed the schemes and instead the materials had been supplied on an ad hoc basis by the sahuikars who had come to the villages and got the villagers together to apply for the scheme. The sahuikars did all the paperwork and running around and handled all the money in cahoots with the loan advancing banks and the govt officials. Thus the materials supplied were ill designed and of an inferior quality.
4. The loans that were thrust on the beneficiaries were far greater than their annual incomes and so represented a tremendous financial burden right from the start.

A massive agitation was launched by the Lok Jagriti Manch after this in 2004 with mass rallies being held to try and force the administration to put a moratorium on the debts which were all invalid. However, the administration contested the claims of the mass

organisations and refused to stay the recovery of the loans. The truth of the failure of the schemes due to the negligence and incompetence of the administration put forward by the adivasis in their simple style was not being accepted by the govt. The govt experts said that the truth had to be "proved" through the arcane methods that economists and statisticians adopt. Like in the case of the big dams on the Narmada River where too the protesters under the NBA had to use the methods of economists and engineers to expose the fallacy of the logic of the projects here too the adivasi mass organisations had to become more versatile and double up as economists and statisticians. This is why it became necessary to undertake a "rigorous" study involving systematic data collection through a detailed questionnaire survey and statistical analysis to verify the reasons for the failure of LIS that could conclusively prove whether the adivasis had been responsible for their failure or not. The Lok Jagriti Manch in collaboration with a local developmental NGO Sampark undertook this study. The limitations of time and resources meant that such a study could be carried out in one tehsil and that also only of a sample of schemes. The present study thus had as its objective an investigation into the causes of the success and failure of LIS in Petlawad Tehsil of Jhabua district.

Methodology of Study A total of 81 schemes were implemented in Petlawad Tehsil involving 1721 beneficiaries and a loan cum grant disbursement of Rs 347.63 crores (US\$ 77.25 million). Stratified random sampling was chosen as the most appropriate method of choosing the schemes given the diversity across various selection parameters that needed to be reflected in the study. A sample of nine schemes out of the total of 81 was chosen for deeper study. For this the universe of 81 schemes was divided into three categories in accordance with their size - 28 schemes of beneficiaries numbering 12 or less, 28 schemes of beneficiaries numbering 13 to 20 and 25 schemes with beneficiaries numbering 21 or more. This division according to size was most important because previous experience has shown that the technical and social problems increase with the size in such schemes. Three schemes from each of these categories were chosen. In addition to this the sample was chosen such that the ratio of the successful to failed schemes in the universe was maintained in it, the social caste and income class distribution in the universe was also reflected in it. The different water sources, that is tanks, streams, dug wells were also adequately represented in the sample. There are two successful schemes one of the Bhil adivasis and the other of the backward farmer caste of Patidars and seven unsuccessful ones, which are mostly of Bhil adivasis and some dalits and Banjaras in the sample. There were a total of 279 families who received loans but due to various reasons 18 of them did not respond to the questionnaire survey that was administered and so the analysis has been carried out with the responses of

261 households only. Table 1 gives the characteristics of the sample.

The questionnaire was designed so as to garner information about the following parameters that could influence the performance of the LIS as indicated by the information gathered from the earlier group meetings and was pre-tested before being administered.

- Household characteristics: education, employment, family size.
- Landholding characteristics: size, irrigated land.
- Irrigation sources: streams, tanks or wells
- Cropping pattern
- Income characteristics
- Debt characteristics: type, amount, sources of loans
- The LIS loan characteristics
- Role of the sahuks, govt servants, bank officials

Table 1: Characteristics of the LIS chosen for study

Sl. No.	Name of Village	No. of Beneficiary families	Caste	Status of Scheme
1.	Bhabhrapada	8	Adivasi	Failed
2.	Samli	9	Adivasi	Failed
3.	Kardavad	12	Adivasi	Successful
4.	Kumbhakhedi	13	Adivasi	Failed
5.	Charankotda	11	Adivasi	Failed
		2	Backward Caste	
6.	Kundal Mor	15	Adivasi	Failed
7.	Garwada	21	Adivasi	Failed
8.	Piplipada	47	Adivasi	Failed
		46	Backward Caste	
		1	Upper Caste	
9.	Kodli	76	Backward Caste	Failed
	Total	261	-	-

Table 2: Means of Variables for the 3 types of LIS

Sl. No.	Variable	Gr I : Unsuccessful	Gr II : Successful Adivasi	Gr III : Successful Backward Caste
1.	Household Education Index	1.32	1.34	2.36
2.	Household Size	6.36	5.33	4.47
3.	Hhd. Landholding Size (Ha)	0.95	1.0	1.43
4.	Per cap. Landholding (Ha)	0.2	0.2	0.38
5.	Annual Hhd Income Index	2.92	4.5	5.89
6.	Annual Hhd Debt (Rs)	28886	24800	55857
7.	Annual Debt/Income Ratio	1.73	0.7	0.84
8.	%age of Agricultural loan used for seeds & fertilisers	77.2	50	88.5
9.	% of Agri. loan taken from institutional source	26	50	82
10.	% of Agri. loan taken under institutional schemes	15.8	50	16.7
11.	Land irrigated by LIS (Ha)	0	0.69	0.61
12.	LIS loan/ Annual Inc. Ratio	1.18	0.62	0.34

Preliminary Statistical Analysis The schemes were divided into the three groups of unsuccessful schemes, the successful adivasi scheme in village Kardavad and the successful backward caste scheme in village Kodli

so as to control for caste as a factor in the success or failure of the schemes while computing the basic statistics like means, frequencies and standard deviations of the many variables. There were 198 variables from the questionnaire and for the purposes of analysis another 31 variables were computed from them. The means for the variables mentioned above for the three groups are given in Table 2 below.

The household education index is obviously much better for Gr III but since Gr II has also been successful despite having a low education index therefore education cannot be taken as a direct factor of success in the present case. However since it has been established from many other studies that the status of education does in general affect developmental performance it has been included as a predictor for regression modelling. There are differences in household landholding and per capita landholding between Gr III on the one hand and Gr II and Gr I on the other but once again since Gr II has succeeded despite having much lesser landholding than Gr III indicates that this is not a major factor of success. Moreover even the average household landholding for Gr III is that of the marginal farmers having below 2 ha.

To get the true picture of the economic status of the households a new variable was calculated as Annual Debt to Annual Income ratio. This variable shows clearly that while Gr III is badly indebted, Gr II is in fact the best positioned despite having a much lower income index than Gr III because its debt is comparatively much less. Thus this is definitely an important factor affecting the success of the LIS as higher debt to income ratio obviously prevents a household from managing its agriculture efficiently. In this case the debt due to LIS is more important for analysis. Hence the LIS loan amount to Annual Income ratio has been taken as an independent variable. The share of agricultural loans taken from an institutional source is much better for Gr III and Gr II and reflects their greater access to such cheap and reliable sources of credit and so this too has been an important factor in the success of the schemes and has been included as an independent variable for further analysis. It is interesting to note that for all the groups the share of agricultural loans for the purchase of fertilisers and seeds is very high and this reflects the basic weakness of agriculture in India at present where even big farmers find it difficult to make enough of an income not only to be able to fund their seasonal requirements but also to fund capital investments in improving the productivity of their farms.

Another information set from the questionnaires that has not been mentioned in the table is regarding the people

who played an important part in the planning and implementation of the LIS. The households in Gr I reported that the sahuikars who were also the traders were the main designers and implementers of the schemes whereas for Gr II it was the Sarpanch, the head of the village elected body, and the Bank officials and for Gr III it was the revenue department officials right up to the District Magistrate. It is indeed ironical that the

Ironically the Govt itself has implemented a comprehensive watershed development programme in Petlawad with funding from the Danish International Development Agency, which has brought about significant improvement in water availability and consequent livelihood security for the Bhils in the project villages at a cost of just Rs 5000 per ha. This is in stark contrast to the Rs 100 000 per ha cost of irrigation by the Mahi River dam

adivasis who needed the most help from the higher administration were left to the mercy of the sahuikars while the better-placed non-adivasi peasants were benefited by the supervision of the District Magistrate. Yet another crucial information set is regarding the source of irrigation. Whereas the source for Gr I was either the

Mahi river or some stream the sources for Gr II and Gr III were big tanks built on perennial streams which provided water for the LIS throughout the winter and spring seasons and sometimes into summer. Thus it is clear that these last two variables too are important factors in the success or failure of the scheme.

The Unfinished Battle Even though the study was only of a small sample in one tehsil and so it may not be possible to generalise the results over the whole of Jhabua district, nevertheless this household survey and subsequent statistical analysis of the data garnered by it confirmed the inferences made from the group meetings that had been held earlier regarding the reasons for the failure of the LIS and provided added support to the claim that the Bhil adivasis were not in anyway to blame. Instead the picture that emerges is of a major failure of planning and governance on the part of the Madhya Pradesh Govt. The most serious mistake is in treating water as a commodity for commercial exploitation rather than as a scarce resource to be properly husbanded given the hydro-geological characteristics of the area. Thus instead of investing in watershed development and afforestation to improve the recharging of water into aquifers and thus first ensuring that there is enough water available for irrigation and other uses, LIS were sanctioned indiscriminately without any thought being spared as to whether the Mahi River and the streams would have enough water flowing in them to satisfy this heightened demand. Similarly little planning was done with regard to meeting the enhanced demand for electricity. The undulating terrain, high gradient and long distance to the fields from the streams where the intake wells were, meant that the pumps had to be of higher power requiring steady electric supply at a fixed voltage for their operation. The supply of electricity failed to keep pace with demand as more and more LIS were commissioned. Later the Govt made the supply of electricity to pumps of up to 5 hp free resulting in the

installation of many small pumps hiking up electricity demand further leading to poor quality of power, which could not run the high power pumps of the LIS whose users nevertheless had to pay huge electric bills.

The ill effects of this ill planned commoditisation of water were compounded by the socio-economic marginalisation of the Bhils. The limited access of the Bhils to cheap institutional loans, the lack of access to good education and in the specific case of the LIS to good and honest planning and implementation of the schemes which were mostly left to the whims and fancies of the sahuikars meant a severe governance failure arising from the general trend of immiserisation of the Bhils since independence. The cynical way in which they were burdened with huge loans without a proper evaluation of their payback potential is itself a criminal mismanagement of scarce financial resources.

Ironically the Govt itself has implemented a comprehensive watershed development programme in Petlawad with funding from the Danish International Development Agency, which has brought about significant improvement in water availability and consequent livelihood security for the Bhils in the project villages at a cost of just Rs 5000 per ha. This is in stark contrast to the Rs 100 000 per ha cost of irrigation by the Mahi River dam if and when it finally comes on stream (WebIndia123.com, 2006). Moreover the water from the Mahi dam would reach only the fields in the valleys which are owned by relatively well off non-adviasis farmers whereas the watershed programme has made irrigation possible in the upper watersheds where the adviasis reside. Nevertheless the Govt has discontinued this scheme as DANIDA has withdrawn funding after completion of the project while it persists with the building of the dam on the Mahi from its own resources. And to make that possible it insists on recovering the dues for the failed LIS from the adviasis, which have failed due to its own faulty planning and implementation. This distorted local political economy has resulted from the continuous commoditisation of water and the marginalisation of the Bhils brought about by the wrong development policies adopted since independence.

The adviasis mass organisations were not going to take this lying down. So armed with the encouraging results of the study they once again began pressing for a cancellation of the loan dues on the adviasis. This agitation dovetailed into the longstanding one for the

implementation of the Panchayat Extension to Scheduled Areas Act 1996 which had earlier become a reality as a result of a concerted campaign conducted by the National Front for Tribal Self-Rule. This law was passed in accordance with the provision of Article 243M (4) (2) of Part IX of the Constitution that envisages that "Parliament may by law extend the Provisions of this part to the Scheduled Areas.....

As Nathu Gangaram of Piplipada village which has one of the biggest LIS which has never worked because the pipelines were ill designed and burst under the pressure of the water on the first day the scheme was started says, "I had a dug well on my farm and used to irrigate my fields with the help of a diesel pump. The sahuikar came and said that I had to be a part of the scheme as otherwise it would not be passed due to a lack of enough members. I was told I would get a cheap supply of adequate water and would be freed from the cost of buying diesel. They took my thumb imprint and money was taken out of the bank. The pipeline never reached my field and anyway the scheme never ran because the pipes burst on the first day. Now the bank officials come and say they will take my bullocks away."

subject to such exceptions and modifications as may be specified in such a law". Thus this was the first time that a central law had been amended to accord with the special situation of the indigenous people in the Scheduled Areas keeping in mind the failure of the Governors to implement the enabling provisions of the Fifth Schedule. The Madhya Pradesh Panchayat Raj Act was amended in 1997 in accordance with PESA

and rules framed for its implementation in 1998. The gram sabha or village council was made the paramount decision making body and so a special local govt system to accord with adviasis lifestyle and culture became a legal possibility. Mobilisation had proceeded since then all over the western Madhya Pradesh region to exert pressure on the administration towards implementing these provisions. The fight for justice for the Bhils of Jhabua burdened with the LIS loans became a part of this larger struggle.

This culminated in the sit in organised in Bhopal in April 2006 as the local administration refused to do anything to provide relief to the debtors saying that a decision had to be taken by the State Govt. Even though the recovery of loans has been stopped a final decision on cancelling them altogether and so freeing the debtors and allowing them to take other loans has not yet been taken. Despite an application filed later under the Right to Information Act, 2005 asking the Chief Minister as to what action had been taken by him on his promise to rectify this injustice the only answer received is that the review process is still pending. The main reason for this foot dragging on the part of the Govt is that a cancellation of loans in Jhabua district would result in adviasis from all over the state demanding similar cancellations of loans given for equally badly planned and implemented schemes severely denting the resources of the fund strapped State Govt. The rule being that in case of cancellation the State Govt has to reimburse the financial institutions for the loss. Thus the adviasis of Jhabua district still face an uphill task in their campaign to bring environmental sanity and socio-economic justice back into development planning and implementation.

Ground Water – Few Ignored Issues

The current water sector challenges are recurring droughts in drought prone areas, disputes in floodwater sharing and threats due to increasing ground water exploitation and quality deteriorations. The approach of MOWR for combating above challenges is through Surface Water (SW) projects and therefore it allocates entire unutilized monsoon flow to meet above challenges and puts maximum thrust on construction of dams & river linking projects. Since time immemorial it is presenting SW as principle measure for providing food security in the country whereas contribution by GW structures is practically of the same order and of equal importance in providing food security. In spite of this, MOWR spends almost entire budget on augmentation of SW storages. It allocates very little money for recharging of GW storage structures.

If we trace the roots of this thinking then we are reminded that the Constitution of India is totally silent on GW issues. The Nodal department and others have also not made any effort to add them in the constitution in past so many years. National Water Policy, which is the vision document for providing direction to managers of water sector do mention about GW but the thrust in NWP on GW issues is suggestive and on a very low priority. Unfortunately the balanced thinking and required (need-based) support to GW concerns (water table decline, quality and quantity issues, universal need etc) is inadequate and casual. It is a common experience that Government of India and State governments attend to surface water concerns promptly and adequately. It is observed that budgetary support to GW programs (as compared to surface water programs) is abnormally low and the focus of GOI and State GW organizations on GW concerns are blurred and more on data collection, research and investigations. The current approach is the cause of serious water situation in the country and therefore the current approach of nodal departments need a paradigm shift.

Comparison of SW and GW structures convey their strength and weakness. We all know that SW storage structures are generally constructed to meet irrigation demands. They serve large commands but suffer from adverse effects such as - water logging, environmental hazards and rehabilitation problems. On the other hand GW extraction structures are constructed for meeting small needs of different nature. They serve small area but do not suffer from adverse effects. The other limitation of SW structures is that they are built only at technically feasible sites and generally at a very high cost (construction period is also more). It is said that the scope of SW structures has reached a plateau where as

GW structures are built almost everywhere and at very low cost (construction period is negligible). Recharge and clubbing of SW structures with GW has enormous potential to meet the demand with almost no adverse effect and a human face in resolving problems. It is in this background we need a paradigm shift in the approach and designing of projects. The comparison if

In spite of greater contribution of Ground Water to national development, MOWR spends almost entire budget on augmentation of Surface Water storages. It allocates very little money for recharging of GW storage structures.

taken further then it shows that people's contribution and water management is easily available for GW structures whereas it is difficult in SW structures. Moreover efficiency of SW distribution in the command

and poor utilization of potential do not match with GW efficiency and potential utilization. In spite of this strength and weakness comparison GW withdrawal above 65% replenishment faces restrictions whereas no such concept exists for SW. We probably forget that GW over exploitation is manageable provided run-offs could be allocated and used. We all ignore the fact that life of SW structures reduces in proportion to silt load reaching reservoir and its life cannot be revived whereas life of GW structure depends upon natural yearly recharge and can be enhanced by artificial recharge.

The above scenario of water sector compels us to discuss few following ignored issues-

1. Should run-offs be utilized only for construction of SW storage structures?
2. Could run-offs be allocated and used for GW recharge to normalize situation?
3. Could State GW organizations be persuaded to come out from data collection & research mode to implementation mode?
4. Could policy makers be persuaded to include GW concerns in the Constitution?
5. Could MOWR be persuaded to recognize GW at par with SW and provide a suitable place for it in the NWP?
6. Could road map of water sector be redrawn to work for universal water adequacy, equity in sharing and ensuring community's role in governance?
7. Could we think of sustainable and environment friendly options, which are free from water logging, salinity and miseries of displacement? Could these options be part of NWP and adopted in the program planning?
8. Could we think of revising our approach, technological options and vision in the light of global warming?
9. Could we think of quantification of allocation of runoff and ensuring minimum safe and potable water for survival of life on earth in NWP?

KG Vyas, Bhopal, MP

CALL FOR STAY ON CLEARANCE & FOR REVIEW OF ATHIRAPPILLY HEP

A meeting convened jointly by WWF-India and River Research Centre, Kerala, at New Delhi on the issues raised over the proposed Athirappilly Hydro Electric Project in Chalakudy River Basin, Kerala, called for immediate stay on the present Environmental Clearance under consideration by the Expert Committee for River Valley and Hydroelectric Projects constituted by the Ministry of Environment and Forests, Government of India. The signatories included WWF-India, River Research Centre-Kerala, Kalpavriksha, Ashoka Trust, Intercultural Resources and SANDRP.

The 163 MW proposed Athirappilly HEP is planned in the Vazhachal Forest Division is the seventh HEP in the Chalakudy River Basin. Given the consistent violations of the Environmental Impact Assessment Notification 1994 by the Kerala State Electricity Board with regard to the proposed project and in light of the significant gaps in the assessment of the costs, benefits, impacts and options of the project, organizations felt that the project should be considered afresh. The EIA report had not considered the impact on the sensitive ecology and unique biodiversity of the area. The report grossly underestimates the avian and fish biodiversity of the region which has been declared an Important Bird Area by Birdlife International and recommended for a Fish Sanctuary by National Bureau of Fish Genetic Resources. Two High Court judgments in the past have rejected the Environmental Clearance, whereas in the court-ordered public hearings, the people have unanimously rejected the project and project authorities have yet to fully implement the HC order.

Repeated requests have been made by affected local communities for a hearing before the River Valley Expert Committee has gone in vain. There has been no response to these requests. Concern over the unwillingness of the MoEF to give an opportunity for project affected communities to put forward their case was also raised in the meeting. It was felt that the MoEF should be more open and transparent and must invite the concerned groups to make their representations before the expert committee. The participants welcomed the site visit of the experts of River Valley Committee and insist that the Committee Members must provide sufficiently advance notice for ample opportunity for local

communities to raise their concerns during the visit scheduled on 12-13 April 2007.

The chronology of events

1996 – A Rapid EIA carried out by the Tropical Botanical Garden and Research Institute based in Trivandrum only in the rainy season violating the EIA guidelines.

Jan 20, 1998 -The MoEF gives clearance to the Project based on a rapid EIA without the public hearing.

2001 - The Chalakudy Puzha Samrakshana Samithi files a PIL in the Kerala High Court questioning the content, quality and the procedural flaws in the REIA.

Two High Court judgments in the past have rejected the Environmental Clearance, in the public hearings, the people have unanimously rejected the project and KSEB have yet to fully implement the HC order.

Oct 17, 01 – The High Court judgment on Athirappilly HEP suspended the Environmental Clearance, directed the KSEB to comply with the requirements of EIA procedure by conducting Public Hearing and directed the MoEF to reconsider the clearance.

Feb 6, 02 – At the HC ordered public hearing, farmers, tribals, housewives, merchants, technical experts and voluntary organizations reject the project. The PH panel recommends for a comprehensive river basin level EIA covering all the seasons and a fresh public hearing on the Comprehensive EIA.

Feb 10, 05 The project granted Environmental Clearance for a second time by MoEF based on another EIA by WAPCOS, again without PH.

April 05 The Athirappilly Grama panchayath and 'Kadar' tribal (Hunter gatherer tribe) file separate PILs in the Kerala HC challenging the EIA by WAPCOS that was carried out without consulting anybody in the project affected area or the river basin.

March 23, 06 The High Court quashes the Second Clearance, orders a Public Hearing and directs the KSEB to apply afresh for Clearance.

June 15, 06 More than 1200 people who turn up at the Public Hearing reject the project on social-technical- environmental angles.

Nov 15, 06 The River Valley Committee recommends for Environmental Clearance for a third time . The Public Hearing panel

report submitted has not been approved by all the PH panel members and a copy of the report is yet to be received by them.

Feb 22, 07 The river valley committee decides to visit the project area to assess the reality.

Presently, Kerala is net exporter of electricity. Hence there should be no urgency to clear the project. This is an opportune moment for the KSEB to urgently take steps to "repair, restore to full capacity, all existing HEPs in Kerala, minimize T and D losses, prevent theft" as per the directions of the Kerala High Court Order 2001

It is strongly recommended that the Environmental Clearance should not be provided on the basis of the

current EIA and also without giving adequate opportunity to hear the project affected communities. Presently, Kerala has sufficient power to meet all its requirements and has even been selling power to other states. Hence there should be no urgency to clear the project. The meeting concluded that this is an opportune moment for the KSEB to urgently take steps to "repair, restore to full capacity, all existing hydro-electric projects in Kerala, minimize Transmission and Distribution losses, prevent theft" as per the directions of the Kerala High Court Order 2001 on Athirappilly HEP case, and the River Valley Expert Committee and the Ministry of Environment and Forests to pause and reconsider the need for the project.

Babli Project: AP protests



The protests in Andhra Pradesh against the Maharashtra govt's Babli project in Dharmabad taluka in Nanded district on Godavari River, 10 km upstream from AP border took a new turn when AP CM threatened that he will take a delegation to the PM at the earliest. He accused the Maharashtra counterpart of going back on the word given at a meeting with him and Union Water Resources Minister on April 4, 2006. Legislative party members said in the assembly that the project, by curtailing the inflows into the Sriramsagar project in AP, would create problems for five districts in Telengana region in AP. Out of reservoir capacity of 90 tmc ft, only 60 tmc ft may be filled and NTPC's plant that requires 8 tmc ft may also suffer. A petition was filed last year in the Supreme Court by Nizamabad Congress MP Madhu Yaskhi Goud and the state govt had also filed a petition and both were clubbed and would come up for hearing in May. The Telugu Desam Party has decided to launch an agitation in the affected districts from April 2. An all party delegation met the PM on March 31 to raise their objection on the issue. The PM Office has asked the Central Water Commission to inspect the project and submit a report at the earliest. The Supreme Court, in the meanwhile, has advanced the date of hearing to April 25, '07. On April 5, '07, even as the AP irrigation minister was about to leave for the project site, he was informed by his Maharashtra counterpart that the visit has to be postponed. This is being taken by AP as a proof that Maharashtra wants to hide something.

In addition to Babli project, Maharashtra has taken up 10 barrages on Godavari: Digras, Muli, Mudgal, Dhalegaon, Loni Savangi, Raja Takali, Mangrul, Jogila Devi, Apegaon and Amdeore, without a clearance from the Central Water Commission. Their storage, clubbed with Babli (2.7 tmcft), will go upto 7.27 tmcft and would mean additional utilisation of 7.27 tmcft. AP alleges that all these projects are in violation of the 1975 agreement signed by Maharashtra, facilitating the construction of Sriramsagar project. These projects have no allocation as Maharashtra has already exhausted its quota of 60 tmcft. AP has completed the Saloor project on the Maharashtra border, without any problems. (The Hindu 250307, 270307, 280307, 060407 Indian Express 020407)

Vidarbha Irrigation Projects: PM intervention sought

The Times of India (240307) have reported that following intervention by Maharashtra governor, (the Prime Minister had forwarded the letter from Governor to the Ministry of Environment and Forests), two large irrigation projects of Vidarbha have been cleared on March 22, '07, as claimed by the Maharashtra Irrigation officials.. These projects with total cost of Rs 3500 crores and irrigation potential of 2.4 lakh ha are the Jigaon Irrigation project in village Jigaon in Buldana district and Lower Painganga project at village Tadasaoli in Yeotmal district. Some of the basic details of the project as available on the MoEF website as on April 7, '07 are:

	Jigaon IP	Lower Painganga IP
Environmental Clearance Application on	090307	100107
Status	To be considered on 210307	To be considered on 210207
Forest clearance Application on	29.12.06	21.10.02
Status	Site inspection report awaited since 29.12.06	Placed before FAC on 270906
Submergence of forest area	1055.64 ha	1089.06 ha

It is clear from the above that the projects have yet to get either environment or forest clearances and claim of the officials on this score is not correct. The claim that the projects are pending before the ministry for environment clearance is also wrong.

Shockingly, however, the report seems to imply that due to the intervention of the governor and the PM, the large irrigation projects are getting clearance from the MoEF. The role of the ministry is to assess the projects on their merits and on the basis of the facts before the ministry. If the ministry starts clearing projects based on letters from the governor or the PM, that would be complete violation of the laws, the environmental norms and people's rights as public hearing at the stage of environment clearance is the only space presently provided by the law (which is not a welcome situation) for people to participate in the project cycle.

The contention that such projects could help reduce the distress of the farmers in Vidarbha is totally wrong. Such projects at best create some islands of prosperity, but in the process create huge social & environmental impacts and also suck away scarce resources that should have actually gone to real solutions. Some such measures include: provide remunerative prices for the produce of the farmers, provide resources to the panchayats for creating and maintaining local water systems and ensuring that farmers are not forced to grow only Bt Cotton [when even planning commission has said that in rainfed areas like Vidarbha, Bt Cotton is not appropriate].

Continued from page 1

- “Delay in obtaining administrative approval of the Government of Gujarat for award of the work resulted in cost overrun to the extent of Rs 2.71 crore.”
- About SSNNL: “SSNNL incurred liability for payment of price escalation of Rs 6.43 crore due to non adherence to the State Govt instructions for award of work contracts.”
- “The Company had double accounted the profit of Rs 2.26 crore on sale of machinery and vehicles in one division and had committed errors of Rs 2.32 crore in computation of profit on sale of building, machineries and vehicles in another division. This has resulted in overstatement of profit on sale of assets and understatement of incidental expenditure pending capitalisation by Rs 4.58 crore.”

Diversion of water from drought areas to Gandhinagar The CAG report also criticised GWIL that in sub project Narmada Camal-14 executed by GWIL at a cost of Rs 39.39 crores for Gandhinagar, “It was noticed during audit that this sub project was not covered under the master plan. Thus, the implementation of sub project NC-14 resulted in diversion of 255 MLD water meant for supply to the drought prone areas.”

Diversion of water from domestic use in drought areas to industries About water supply to Kutch, the CAG notes, “the master plan for the project had envisaged allocation of 232 MLD for Kutch district, including 45 MLD for industrial use... Scrutiny of industrial connections released/approved by the Company and GWSSB revealed that up to March 2006 the total water allotted for industrial use was 61.91 MLD (the Company : 43.38 MLD and GWSSB : 18.53 MLD) against the stipulated allocation of 45 MLD. The excess allocation of water for industrial use would reduce the availability of water for domestic use and thus adversely affect the drinking water requirements of people of Kachchh district by the year 2021.”

SSNNL responded to CAG that it had increased (in May 2006) the allocation for industrial water from 0.2 MAF

(674 MLD) to 1.0 MAF (3369 MLD) from which the excess allocation would be adjusted. The CAG rejects this, “The reply is not tenable. SSNNL had increased the overall allocation of water for industries but district wise allocation has not yet been finalised (August 2006).”

Here an important question arises, if SSNNL has increased the water allocation for industries to 1.0 MAF, than it has to reduce water allocation for irrigation, but there is no reduction in the proposed command area. Who then, will suffer due to the increased allocation to industries by SSNNL? (CAG Report, Financial Express 310307, Indian Express 030407)

New Rules to force people to take Narmada water A somewhat complementary situation prevails in Ahmedabad. Here, having failed to get many takers for Narmada water connections, the Ahmedabad Municipal

About water supply to Kutch, the CAG notes, “the master plan for the project had envisaged allocation of 232 MLD for Kutch district, including 45 MLD for industrial use... up to March 2006 the total water allotted for industrial use was 61.91 MLD... The excess allocation of water for industrial use would reduce the availability of water for domestic use and thus adversely affect the drinking water requirements of people of Kachchh district by the year 2021.”

Corporation and Ahmedabad Urban Development Authority have launched new ways to induce, pressurize and force people to take up Narmada water Connections.

By way of inducement, the AMC has offered 10% rebate for one time connection charges those who take the connection before March 31. AMC is also saying that with 500 ppm Total Dissolved Solids (TDS), Narmada river

water is better from health point of view than borewell water with 1500 ppm TDS or more. However, so far only 55 residential societies have applied for Narmada water connections.

By way of pressure, the AMC will be sending out 12 teams across the city to measure TDS in various borewells and the reports will be sent to all over the city

On the other hand in Ahmedabad, having failed to get many takers for Narmada water connections, the Ahmedabad Municipal Corporation and Ahmedabad Urban Development Authority have launched new ways to induce, pressurize and force people to take up Narmada water Connections. This when in the SSP plan, there was no provision for water for Ahmedabad.

and then letters will be sent to respective societies about the TDS level in water in their wells.

By way of force, AMC has from March 21 made it mandatory for all developers to take Narmada water connection before their building plans can be approved. According to president of Gujarat Institute of Civil Engineering and

Architects, this is beyond the powers of AMC as per the Town Planning and Urban Development Act. (The Times of India 200307)

Narmada Valley

MP HC stays closure of Omkareshwar dam gates & reservoir filling A bench comprising of Chief Justice A.K Patnaik and K.K. Lahoti of the High Court of Madhya Pradesh has passed an order staying closure of the 23 radial gates as well as the river sluices of the Omkareshwar dam until the next hearing on April 9, '07. The gates were scheduled to be closed on April 1. The stay was given in a case filed by the Narmada Bachao Andolan against the MP govt and the NHDC on the issue of the R&R of the Omkareshwar dam oustees. The HC directed that the Grievance Redressal Authority for the Omkareshwar project must visit the area and give a report by April 9 on the status of R&R of the oustees and also take a view on the impacts of closing the river-sluice gates and the 23 radial gates over the crest level.

The HC also directed that electricity and water supplies in the villages should not be severed. Recently, the state officials had severed the electricity connections in Village Dharaji, but due to protests by the women, they had to reconnect it. Out of over 100 houses in the village which were falling in the submergence, only 48 have been acquired. Only 15 families from the village have been rehabilitated. The situation is similar in all the other villages, where hundreds of oustees have been arbitrarily excluded from the R&R process. The oustees have been opposing this exclusion strategy of the NHDC, which was a direct assault on the fundamental rights of the affected villagers facing submergence.

There are grave questions even about the extent of submergence. The petition drew the attention of the Honorable Court to the fact that on March, 13 '07, a meeting was held to review the situation of acquisition of land and properties and R&R of the oustees of the Indira Sagar and Omkareshwar projects, wherein the State officials admitted that fresh re-surveys have found that there are mistakes in surveys in at least 12 villages in the submergence zones, and that the lands and houses thus found affected are yet to be acquired. The Minutes of the said meeting held under the aegis of District Collector Khandwa states:

"The Office of the Executive Engineer Narmada Valley Division No. 32, Barwah have carried out re-survey of the FRL line of the Omkareshwar Project. Mistakes in surveys were found in 12 villages. ...It is directed that Section 4 proceedings have to be completed by March 25 '07, Section 6 proceedings have to be completed by April 10, '07, and award has to be completed by April 30, '07. ...The said directions will be applicable for those affected at back-water levels as well."

It may be noted that in 2006, the same District Collector had given a written order to acquire all such houses numbering nearly 3000 in Khandwa alone, because they pre-existed the Section 4 Notification. However the same were never acquired, and the new proposals of the NVDA included all these houses. NBA says that it is because of such arbitrary exclusions that Santosh

Paliwal of Harsud and Amrabai of Village Bediyaon were compelled to commit suicide last year.

In the same way, surveys are still ongoing for the villagers to be affected at the back-water levels, and identification of affected properties and families is yet to be completed. Land acquisition of these properties and R&R for these thousands of families is still a far cry.

Several thousand hectares of agricultural land is in the submergence of the Omkareshwar dam, and over 8000 families are likely to face submergence in 30 villages. Over 40% of the oustees are Dalits and tribals. An overwhelming number of these are small and marginal farmers. (NBA PR 280307, 300307)

MHP Affected protest; Complaints filed at SEBI and RBI, demand to the FI not to invest About 1000 people demonstrated against the Maheshwar dam being built in the Narmada valley. Delegations met senior officers of the Reserve Bank of India, Securities and Exchange Board of India, IDBI, LIC and GIC to ask them to stop investment of public money in the Maheshwar Project and to prosecute those guilty of financial irregularities.

The Maheshwar Hydel Project has been surrounded for the last many years by financial irregularities. Because of default on a loan taken for the MHP, the movable and immovable properties of the project were attached from 2002 to 2005. The properties were restored to the promoters in 2005 on the basis of a settlement which the SMHPCL has now dishonored.

Ignoring these issues & in contravention of SEBI rules, the CARE rating agency gave an AAA rating to the project. Three weeks ago, the NBA filed a complaint with the SEBI, to withdraw the rating, stop the private placement & to cancel the CARE registration because the Chairman of CARE was also the Chair of SMHPCL. The SEBI is examining the matter.

Now the Company wants to mobilize more funds on the basis of this illegal CARE rating. Instead of returning the loans taken from the LIC, GIC and other banks and institutions, in which they are in default, an effort is being made by MHP authorities to compel these institutions to convert these loans into equity, and to re-validate old sanctions. Further, the IDBI is putting pressure on the MPSIDC to give waiver of Rs 29 crores on loans taken by the S. Kumars from the MPSIDC for the MHP, on which they have defaulted. IDBI needs to be censured for this. NBA also asks the RBI to do an audit of the use of Rs. 106.4 crores that had been illegally transferred out of Project.

The people call upon the RBI to intervene to ensure that persons responsible for the financial irregularities, should be punished, the defaulted money should be recovered and any private placement / public issue by the Company or its holding company should be stopped in the light of the RBI notification of May 30, '02. (NBA PR 150307)

Climate Change Impact on Water Resources in India

The India UK Educational and Research Initiative is supporting two studies on impact of climate change on Water Resources in India:

- Ed Maltby, Director of the Institute for Sustainable Water Management and Ecosystem Research and Prof A Gosain, Indian Institute of Technology, Delhi are studying the impact of climate change on the water cycle and ecosystem functioning at the river basin scale in Godavari River basin.
- In another study, the impact of climate change on monsoon is being studied by Prof J Slingo, Reading, UK and Prof BN Goswami of Indian Institute of Tropical Meteorology, Pune. The study is expected to help formulate a decision support framework for river basin management in India on Ecosystem approach, based on GIS platform.

The Indian Council for Agricultural Research has undertaken a long term climate change impact study. The MS Swaminathan Research Foundation is implementing a project on vulnerability assessment and enhancing adaptive capacity to climate change in semi arid India.

Scientists say it has become increasingly clear that worldwide precipitation is shifting away from the equator and towards the poles.

Glaciers The Department of Science and Technology started an all India coordinated programme on Himalayan glaciers in 1988 to study glaciers of the western and central Himalayas, Gangotri and its tributary glaciers and Chhota Sigriglaciers in the central Himalayas. According to the study, the Gangotri glacier receded at the rate of 17.15 m per year between 1971 and 2004.

According to a new report from UN to be released on April 6, "If current warming rates are maintained, Himalayan glaciers could decay at very rapid rates, shrinking from the present 500 000 sq km to 100 000 sq km by 2030s". The implications of this for India and a number of surrounding countries would be serious, but there is not attempt to do anything about it in these countries.

Global food production Impact The first ever study on the impact of climate change on global food production by researchers of University of California estimates that during 1981-2002, fields of wheat, corn and barley throughout the world have produced a combined 40 MT less a year (annual production loss of USD 5 billion) because of the increase of global temperature by 0.7 degrees Fahrenheit. The study demonstrated a clear and simple relationship at the global scale, with yields dropping by 3-5% for one degree Fahrenheit increase. (The Hindustan Times 240307, The Tribune 260307, Financial Express, The Times of India 020407)

HYDRO PROJECTS

Dulhasti: the costliest Hydropower project ever?

The 390 MW Dulhasti HEP on Chenab River in near Kishtwar in Doda district in Jammu & Kashmir is the costliest hydropower project ever in India. At Rs 4227 crores, the cost per MW installed capacity comes to Rs 10.84 crores, which is more than double the average cost of hydropower projects. The cost escalation that the project has seen is also one of the highest for any project in any sector in India, at 2204%. The project has also seen one of the highest ever time over runs, the project that was supposed to be completed in 1988 is yet to be commissioned 19 years later. The Indian Express Report on March 25 said that the project will start generation by the end of the year, but that has clearly been proved wrong.

History

1983: Foundation stone laid by Indira Gandhi

1989: Cegelec-ALstom led French Consortium DSB awarded the contract

1991: One of the French engineers abducted by militants

Aug 1992: DSB pulls out from the project

1996: Jaiprakash-Statkraft anlegg (JSA) appointed as contractors for the remaining civil works.

April 2007: First unit yet to start generation

Salient Features

Dam: 65 m high, 186 m long concrete gravity dam

Headrace tunnel: 10.6 km long

Tailrace tunnel: 300 m long

Power Units: 3 X 130 MW

Power Generation It is claimed that it will generate 1928 MU, which means 4.94 MU per MW installed capacity. However, this is unlikely to come true, looking at the track record of Chenab basin hydropower projects over the last 21 years.

Problems continue Generation of power from the project could be delayed, according to a report on April 3, due to damage to high power transmission line from the project. (Indian Express 250307, Dainik Bhaskar 030407)

Pak objects to Uri-2 The Pakistan govt has objected to India's Uri-2 project on Jhelum River in Jammu & Kashmir. Pakistan Indus Commissioner said that India has started construction on the project even before Pakistan had approved the design of the project, as required under the Treaty and Pakistan has objections to the design of the project. (The Tribune 290307)

Tehri generation 14% By March 21, '07, fourth unit of the controversial Tehri project was commissioned, thus the full installed capacity of 1000 MW of first phase of the project is fully commissioned, but the project was generating 140 MW as the water level at the dam was low at 750 m (it can go to 786 m) and inflow was 60 cumecs and outflow 250 cumecs. (Indian Express 220307)

HIMACHAL HEPs**Allain Duhangan: Govt hand in glove with the company in regularizing violations**

It seems the HP govt is hand glove with the Bhilwara group, developers of the Allain Duhangan HEP. On the one hand the forest dept officials have fined the company for illegal use of 8 ha of forest land, and the state CM declared enquiry into the violations. At the same time, the state govt has sent revised forest use plan of the company, which demands additional forest land of 9.5 ha (including 8 ha mentioned above) for approval to the central govt. This is like regularizing the violations and is in complete violation of the Forest Conservation Act.

The Violations An application under the Right to Information Act was moved and the reply we received from the Ministry of Environment and Forests reveals that the project has already been fined for at least ten violations under the Forest Conservation Act, 1980. The details of the violations and fines are given below.

Detail of Damage	Quantity/ Area affected	Fine Imposed, including 100% penalty, Rs Lakh
Extraction of stones	6085.66 cum	36.00
Muck Dumping	39943 sq m	20.53
Breaking of forest land	44976 sq m	22.87
Damage to trees with VAT	723 nos	276.98
Seizure of equipments (JCB)	3 nos	0.30
Extraction of fuel wood	1250 H/ L	3.22
C/O water channel	680 running m	7.45
C/O ropeway	1 No	0.20
Illegal pitching of tents (109 nos)	4512.3 sq ft	1.26
Pitching of temp. Khoka (3 Nos)	132 sq m	0.18
TOTAL		368.99

The amount in the last column includes 100% fine on Value of damage + compensation for each violation. The Principle Chief Conservator of Forests, Himachal Pradesh wrote on March 2, '07, "The user agency has so far deposited Rs 2 15 76 301/- and the balance of Rs 1 53 05 416/- are still recoverable".

This shows that the company has indulged in repeated violations of Forest Conservation Act. The project is funded by the International Finance Corporation (private sector arm of the World Bank) and the Norwegian Company NCC. But neither of the agencies seem bothered about these repeated violations. The project has also registered for credits under UNFCCC's Clean Development Mechanism. How can a project that indulges in such repeated violations and destruction of forests and environment qualify as a clean development project? (Response from MoEF under RTI, Divya Himachal 230307)

People stop work at Ghanvi-2 HEP The struggle committee of the people affected by the Ghanvi-2 HEP near Rampur has stopped construction work on the project till the demands of the people have been

accepted. The demands include employment at the project for the local people, compensation for the houses that developed cracks due to the blasting at the project, among others. The agitation continued on the 4th day too. (Divya Himachal 300307, Dainik Jagaran 030407)

Campaign to get back the ownership of Shanan HEP

The People of Jogindernagar town have launched a campaign to get back the ownership of the Shanan HEP for HP from Punjab. The campaign has been joined by people affected by the Uhl HEP. The Shanan HEP operation was handed over to the British govt by the king of Mandi under an agreement on March 3, 1925. However, the ownership was given to Punjab govt after independence, the last agreement on this issue was signed on April 28, 1975. (Divya Himachal 260307)

HEPs not paying fishery costs The Himachal Pradesh Fisheries Dept has amended its policy for hydroelectric developer. As per the amended policy, the developers will have to pay higher fees for clearance from the fisheries dept. Till 2005, the clearance tariff was Rs 0.1 M per MW and Rs 0.1 M per km river length affected. The new rates are Rs 0.5 M and Rs 0.2 M respectively. The money collected is used for fisheries development. Under the new tariff, 32 projects have got NOC and 37 projects waiting for clearances. However, a number of projects under construction have not paid the amount and the construction is continuing. Some of the defaulting companies are listed in the table below.

Company	Project	Amount Due, Rs Crores
NHPC	Parbati II	1.00
NTPC	Kol dam	2025
SJVN	Rampur	1.00
Lanco	Budhil	0.70

(DANIK BHASKAR 131106, The Tribune 270307)

Rampur HEP Contracts Patel Engineering has bagged a Rs 806 crore contract in joint venture with Gammon India for a 15 km long tunnel and 140 m deep surge shaft and power house for 434 MW Rampur HEP on Sutlej River, the contract to be completed in 54 months. (Financial Express 310307)

HEPs threatened by melting glaciers A study during 1997-98 to 2001-02, has disclosed that glaciers in Baspa basin have melted by about 19%. The glaciers in the basin have receded to 140.3 sq km in 2001 from 173 sq km in 1962. The Shingari glacier in Chandra basin has been receding at the average rate of 8 m per year from 1963 to 1984, while it has recorded highest reduction of 23 m in 1984-1986. Due to melting glaciers in Sutlej basin, over 14 small and medium artificial lakes have been created in HP. The size of the lakes varies from 0.20 sq km to 0.05 sq km. However, in the Tibet Himalayan area in the same basin, the melting glaciers have created 24 artificial lakes. The size of the lakes varies to 0.025 sq km to 0.10 sq km. The Chenab basin has 19 artificial lakes with the size varying from 0.003 sq km to 1.053 sq km. The study warns that these melting glaciers may create disasters for the hydro projects in the downstream areas. (DANIK BHASKAR 241106)

AGRICULTURE

Farmers set up company in Dharmapuri Over 200 small and mid sized farmers of Dharmapuri district (Cauvery basin) in Tamil Nadu have set up a company "Dharmapuri Precision Farmers Agro Services Ltd" to collectively sell their produce. Another similar company is likely to be set up by about 200 farmers of Krishnakiri district. (Mint 290307)

Banana Farmers unite in Gujarat Banana farmers of Jhagadia, Bharuch district in Gujarat, growing Banana over 55 000 ha have come together to form Jhagadia Agri Vision Club to collectively sell their produce and get better price. They have also increased the yield through tissue culture, with the help of NABARD and Gujarat Govt. (Indian Express 300307)

Farmer Suicide stats flawed: Parliamentary Committee The Parliamentary Standing Committee on Agriculture in its 23rd report for 2006-07 has said that government is giving lower figures of suicides by farmers and that the PM's package for Vidarbha region has failed to reach the victims. It said that while the official agency had projected the number of cases reported in 2005 as 142 in Maharashtra, but there were reports of about 435 suicides. Thus the govt figure of 11782 farmer suicides in last five years seems to be a gross underestimate, the committee says.

As if to expose the true fact of PM's package for Vidarbha farmers, a farmer was bashed up by govt officials in Yavatmal district for seeing information about details of the implementation of PM's package in Vidarbha under RTI. (Financial Express 250307, The Times of India 280307)

Corporate Farming in National Farm Strategy Planning Commission Vice Chairman Montek Singh Ahluwalia would like to provide a big role for corporate bodies in the new National Farm Strategy to be announced in two months. The National Farm Strategy would aim to increase the agricultural growth rate to 4% and would be based on the recommendations of the National Farmers Commission, Planning Commission and "other inputs" (which would basically mean national and international farming corporate bodies). The strategy, being prepared by a committee of Chief Ministers, would be discussed in National Development Council and finalised. (The Economic Times 280307)

Vidarbha Farmers Crisis There have been some 250 farm suicides in just the first three months of this year. Things could get a lot worse after June. This is a clear symptom of deepening crisis and failure of the Prime Minister's relief package, among other failures. (The Hindu 290307)

Farmer suicides in Gujarat The Gujarat Chief Minister agreed on the floor of the legislative assembly that in last two years, 148 farmers have committed suicides in Gujarat, including 28 tribal farmers. (Indian Express 300307)

Wheat stocks, procurement FCI has buffer stocks of a little over 5 MT as on April 1 and hopes to procure 15.1 MT in the new season, taking the total availability to over 20 MT. India's requirement for public distribution and other schemes is 16 MT. Media reports about private traders buying wheat at higher prices is not correct, FCI CMD says. In March '07, when FCI wanted to sell 0.4 MT of wheat at Rs 9.86 per kg, only 49 000 T was lifted. He said private traders won't go for huge purchases this season, unlike last season. Current (April 1) international price is Rs 7.31 per kg.

- On April 2, the govt allowed private traders to buy wheat at zero import duty. This means that there is little justification of socking wheat either for the farmers or for the traders. Traders expect to import 2 MT wheat this year, compared to 1 MT last year.
- However, Tribune reported on April 3 that private companies were buying wheat at Rs 9.11 to Rs 9.25 per kg for the new crop and Rs 9.35-9.55 for the previous years' crop at Khanna. (Mint 020406, The Economic Times, The Tribune, *Dainik Bhaskar* 030407)

IRRIGATION

Regional Budget allocation in Maharashtra The Maharashtra Governor SM Krishna has on March 1, '07 given specific instructions to Irrigation Dept about the quantum of allocation of irrigation budgets to the various regions of Maharashtra like Western Maharashtra, Vidarbha, Marathawada, Khandesh and Konkan, considering criteria like backlog in the area, population covered, net sown area and ongoing projects. This system was to be followed from 2005-06. However, since the irrigation dept did not strictly followed these norms during 2005-06 and 2006-07 and over allocated Rs 1617 crores to western Maharashtra, Khandesh and Konkan at the cost of Vidarbha and Marathawada, the governor has now given specific instruction that extra allocation of Rs 539 crores should be made for each of the next three years to correct the wrong allocations of last two years. According to these allocations, our of total irrigation budget of Rs 4051 crores in 2007-08, Vidarbha is to Rs 2220 crores (due allocation of Rs 1781 crores + Rs 439 crores compensation for the shortfall in last two years) and Marathawada is to get Rs 959 crores (due allocation of Rs 859 crores + Rs 100 crores compensation for the shortfall in last two years). The Governor's directive also states that should the govt resort to open market borrowings for the irrigation sector, the money raised should be for the state as a whole and distributed as directed by him. The political leaders of W Maharashtra and other regions have started putting pressure on the Governor to revise his directions, but the govt officials say the governor's directives are final and in keeping with his responsibility. (The Times of India 210307)

AIBP In 2006-07, Rs 672.61 crores released by Jan 31, '07. The outlay was Rs 7121 crores including central govt grant of Rs 2350 crores. (Centre for Budget and Governance Accountability)

SUGAR

Production, consumption, storage Sugar production in India during 2006-07 is expected to be 25 MT, 30% above the previous year. The highest production of 8.4 MT is expected in Maharashtra; production in other states is likely to be: UP (7.7 MT), TN (2.6 MT), Karnataka (2.5 MT), AP & Gujarat (1.5 MT each). When 4 MT carryover stock from previous year is added, availability is 29 MT, against consumption of 19 MT. A French company, Veolia, had been roped in to set up the desalination plant to provide about 50 million litres of water a day for immediate requirements. On full stream, the SEZ will require about 400 million litres of water per day. Apart from desalination, Veolia has also been entrusted with the task of recycling, harvesting, and distribution of water.

Indian Sugar Mills Association and National Federation of Cooperative Sugar Factories are two lobbies of the sugar industry. In Maharashtra, the Maharashtra State Sugar Cooperative Factories Federation stands for the interests of the industry.

The Govt has prepared a Rs 850 crore package to help the Sugar Industry, which includes the following measures: Creation of buffer stock of 2 MT, Lifting the export limit, Providing export subsidy of Rs 1.35 per kg for sugar mills in coastal areas and Rs 1.45 per kg for sugar mills in the Northern region.

Sugar Stocks jumped by 15.7 % to 58.5% in the week March 23 to 30, following such announcements.

Maharashtra The Maharashtra govt has decided to waive purchase tax for Maharashtra Sugar mills this year, which will mean a subsidy of 254 crores for the sugar mills, the benefit will not be passed on to the farmers. The ostensible reason given is that there has been too much production this year. The state is expected to supply 8 MT to market and carry forward stock of 1.4 MT next year out of total availability of 9.4 MT of sugar. The state consumes 3.2 MT. This kind of subsidy is totally unjustifiable. This is clear misuse of state resources, when the state financial minister Jayant Patil many other ministers also are sugar barons.

An army of about 4.5 lakh migrants empty out of Marathawada region for cutting sugar cane from the fields in western Maharashtra. They have no stake in the 172 sugar mills, two thirds of which are owned or controlled by the politicians. They leave in inhuman conditions and move from one place to another.

Ethanol In response to public tenders on industry basis by the Oil Marketing Companies for supply of ethanol for

5% blending in Petrol in the notified 20 states and 4 UTs, 52 companies have come forward to supply total of 1061.04 million litres (ML) of ethanol over the next three years at Rs 21.5 per liter ex-factory. Belgaum based Shree Renuka Sugars has emerged as the largest supplier with 217 ML. Bajaj Hindustan group and Balarampur Chini group will supply 99 ML and 44 ML. (Financial Express 230307, 030407 Mint 270307, The Economic Times 030407, The Hindustan Times 040407)

AP looks at sugar cultivation by SRTS After success of rice cultivation through the System of Rice Intensification, the Andhra Pradesh Govt is hoping to expand this practice for cultivation of sugarcane. The govt is hoping to expand this practice through directorate of Sugar. Till date, about 1200 ha have been marked for this mode of cultivation, which is called Sugarcane

The Sugar industry in India is in unique position. It gets subsidies in many forms, it is the greatest consumer of water and also one of the worse polluter of water, but rarely is action taken against it. It gets subsidy when prices are low, when production is high or low and when it wants to export water. The subsidies generally do not reach the farmers and never to the labourers, politician-cum-owners pocket most of it. The industry is instrumental in export of millions of cubic meters of water, but no question is raised about it.

Renewed Intensification System (SRTS). SRI cultivation has proved beneficial, its advantages includes less usage of water, less expenditure, control of pests and insects, it is useful for inter-cropping system with more yield. A farmer and expert associated with this cultivation method, Alwarswamy has expressed that in the conventional

method, the seed requirement per ha is about 10 T as compared to just 1 T in this system. Looking at the trend, sugarcane is cultivated in about 0.21 M Ha in AP and about 0.11 M are still in the seedling stage. Over 40% water can be saved through this mode of cultivation as compared to conventional system. The average yield per ha is about 150 T, and at time with best practices, it is over 200 T. The saving per ha for sugarcane growers is close to Rs 10000. The seed cost is also considerably reduced. In the conventional method, the seed cost comes to Rs 12500 per ha as against Rs 1250 per ha in SRI cultivation. (THE FINANCIAL EXPRESS 271106)

Questionable subsidy to mills in Maharashtra The Maharashtra govt has decided to liberalise and reduce its intervention in the price policy of sugarcane. The State Govt has assured farmers a payment of Rs 900 per T as first installment for their produce, while indicating sugar factories themselves can decide on subsequent payments. The decision comes in the wake of a statewide stir by cane farmers in November month, in protest against insufficient remuneration for cane. The Swabhimani Shetkari Sanghatana has agreed to accept the price of Rs 1280 per T, while it had continued its agitation demanding Rs 2200 per T.

Meanwhile, the Supreme Court has upheld the ban on new sugar mills within 15 km radius of the existing sugar mills as per the Sugarcane (Control) Amendment) Order 2006. (THE INDIAN EXPRESS 241106)

WATER POLICY

Move to shift water to concurrent list The Union Water Resources Minister told Rajya Sabha on March 23, that "There is some movement to get the subject of water resources from the State List to the Concurrent List of the Seventh Schedule of the Constitution". The Minister said that he cannot say anything further on the subject. (The Asian Age 260307)

RIVER LINK NEWS

MP invited EOIs for Narmada Kshipra link Narmada Valley Development Authority, Govt of Madhya Pradesh, has invited expression of interest for preparing Detailed Project Report for the proposed River Link Project to transfer 3700 Million Cubic Meters of water from the Indira Sagar Reservoir on Narmada River to Kshipra basin in Malwa Region through 42 km long link involving 300 m lift. After a review of the EOIs to be submitted by April 24, '07, short listed parties will be invited to submit detailed proposals. (Financial Express 260307)

TN to study feasibility of linking state rivers The Tamil Nadu govt has decided to study feasibility and formulate schemes to link all the rivers in the state, since implementation of the NWDA Peninsular proposal will take time, PWD minister informed the assembly. (Financial Express 050407)

POWER SECTOR

PM Unhappy with Power Sector The Prime Minister is unhappy with the power sector performance. The distribution reforms are in shambles. On an average there has been less than 2% annual reduction in Aggregate Technical and Commercial losses, with current losses being around 34%. 75-80% of technical losses and almost the entire commercial loss occur at the distribution stage. The 11th Plan target of capacity addition of 68 869 MW plus "best effort" option of 11 545 MW is ambitious and possibly unnecessarily high, based on the assumption that energy generation requirements would grow at 9.5% per annum. The capacity addition in the just concluded 10th Plan has been far below the target. (The Economic Times 290307)

Power from Mundra UMPP too costly The price of Rs 2.26 per unit for the power from the proposed 4000 MW Mundra UMPP is too expensive considering that small (50-100 MW) captive thermal projects even currently are supplying power at Rs 2.5 to Rs 2.75 per unit, even with imported coal. The price of power to the consumer from Mundra UMPP is likely to be higher than this, considering any reasonable T&D expenses. These plants have to buy coal through intermediaries, transport it to the plants, and suffer the fuel inefficiencies compared to the super critical plants planned for UMPPs, and yet they are providing power at better rates. Thus, coastal UMPPs may not make commercial sense. (Mint 020407)

Ultra Mega Power Projects under cloud

The much hyped Ultra Mega Power Projects of the Govt of India have run into serious trouble with discrepancies noticed in the bid by the Globeleq-Lanco and the technical & financial credibility of the bidder. The govt has a lot to answer as to how such serious issues went unnoticed in the tendering and evaluation process. The bidder has made gross misrepresentation of facts. The Central Electricity Regulation Authority would have to step in to investigate how such a mess happened. Now attempts are being made to find an honorable exit for Globeleq Singapore so that the company is disqualified from future bidding, but that would be trying to cover the mess under the carpet. The role of Ernst and Young, the independent consultant has also come into question. Since the process of evaluation itself is under cloud, there questions about validity of the other mega project awarded along with Sasan Project, namely the Mundra project. Reliance Energy, the second lowest bidder with power cost of Rs 1.29 per unit compared to Lanco's Rs 1.19 per unit has been lobbying the govt about the violations of Lanco. The Finance Ministry has directed all future ultra mega power projects should be first approved by the Public Private Partnership Appraisal Committee. In the last days of March 07, Sasan Power Company has asked the bidders to explain the discrepancy between those claimed in the bidding document and those available from independent sources, about the annual turnover of the international partner Globeleq Singapore. Deepak Parekh led apex evaluation committee would also be meeting in the first week of April to take decision on the issue.

G Venkatesh Babu, managing director, Lanco Group was held with "unaccounted" cash of Rs 34 lakh at the Hyderabad airport recently. According to industry insiders, this could well be the hawala money - a practice followed by businessmen to pay kickbacks to "contacts" outside their home place. In which case, they say, this makes for the leftover cash, considering the money was inbound. (The Economic Times 290307, 020407 Indian Express, Rediff.com 300307)

Two Reliance Transmission projects stalled The project for constructing transmission line from the Koldam Hydro Project in HP, awarded to the Reliance Energy Ltd (in 2004-05) by Power Grid Corp, along with another transmission project in western India (awarded to Reliance in Nov '06) are has hit a road block as the finance ministry has said that all projects with capital cost of over Rs 100 crore must be appraised by the Public Private Partnership Appraisal Committee. (Financial Express 290307)

AP: No increase in tariff for the sixth year The Andhra Pradesh Electricity Regulation Commission has declared tariffs for 2007-08 and no increase in tariff has been suggested for any sector for the sixth consecutive year. The subsidy for free power to agriculture in 2007-08 will

be Rs 1047 crores, down from Rs 1357 crores in 2006-07. The agricultural consumers have been asked to put in place two demand size measures by March 31, 2008 or forgo free power: ISI marked pumps and plastic pipes. (The Hindu 220307)

AP to buy costly power The Andhra Pradesh Govt will begin purchase of electricity from the open market paying a record price of Rs 6.2 a unit on an average to meet the shortage, likely to be severe, during Rabi. Officials justify this and said, owing to gas shortage, closure of some power plants and restrictions on plant load factor and operation of hydro stations, the APTransco has been using only 50% of the State's installed capacity of 11182 MW. The Rabi demand is expected to reach 195 MU a day. The shortage is going to be higher as farmers sowed paddy instead of irrigated dry crops as advised by the Govt. To fulfill the demand the APTransco has accepted the bids from Jindal South-West, PTC and National Vidyut Vyapar Nigam Limited at Rs 5.95, Rs 6.46 and Rs 6.78 per unit. (THE HINDU 181106)

Revenue loss of Rs 9400 Cr in MP The Comptroller and Auditor General of India has indicted the Madhya Pradesh State Electricity Board for transmission and distribution loss far exceeding the acceptable level. "T and D loss of the Board ranged between 45.57 and 42.62 % during five years ended March, '05 as against the acceptable level of 15.5 %, resulting in loss of potential revenue to the tune of Rs 9,397.47 crore," said the CAG Report (Commercial) for the year ending March 31, '06. (Central Chronicle 310307)

Applications for Power Exchanges Following the CERC's publication of guidelines for grant of permission to operators wanting to set up and operate power exchanges, FTIL, promoters of India's leading multi commodity exchange has submitted a proposal. Power Trading Corp has shown an interest in taking a stake in such an exchange. CERC has not stipulated any cap on the number of exchanges that can be set up by prospective players. NCDEX and NTPC Vidyut Vyapar Nigam are other agencies who have expressed interest in setting up a power exchange. The proposed power exchange will provide a day ahead market and may also offer continuous trading in blocks of hours. Week ahead and three month ahead markets will also be introduced in due course. (The Economic Times 220307)

Power Minister advises for demand management The Union Power Minister has urged states to focus on capacity addition and demand management to eliminate power shortage in the country. He noted that in the 10th Plan there had been weakness in preparatory work, delays in decision making and imbalance in capacity addition. He also emphasized the need for attention to energy conservation. He said that the country faces a 7.5% energy shortage and 11% peaking shortage. (THE HINDUSTAN TIMES, THE TIMES OF INDIA 171106)

POWER OPTIONS

ERC on renewables Many state regulatory commissions have given orders on renewable energy purchases specifying special tariffs and minimum percentage of purchase. For example, the Maharashtra ERC has specified in its order in 2006 that at least 3% of the purchase must be from renewable sources in 2007, with 1% annual increase. (www.mercindia.org.in)

HP gets 50% extra for peaking power Under barter system with Delhi, the Himachal Pradesh govt provides 3 lakh units power during peaking hours and gets back 4.5 lakh units from Delhi during non peaking hours. This way, the state is able to get more out of power generated during peaking hours. (The Tribune 260307)

CFL & LED market in India The CFL market in India is now about 100 m units a year, and it grew by 40% in 2006, where as the market of LED (Light Emitting Diodes) is just about 1 m units per year, though they give comparable performance. Now Ministry of Power has decided to bring in an MNC to set up a plant in India.

- **Haryana plans to save 900 MW with CFLs** The Dakshin Haryana Bijli Vitaran Nigam plans to save 900 MW of power capacity through replacing 3 CFLs for each of the 18 lakh consumers. DHBVN plans to sell CFLs at concessional rates for this.

- **The First CFL village** Binaula, a small village of 98 households in Gurgaon district in Haryana has become the first village that uses only CFLs for lighting, thus reducing the electricity consumption by about 50%. (The Economic Times 290307, The Hindustan Times 300307, IANS 050407)

Tata BP Solar Plans Tata BP Solar India Ltd, the 51:49 joint venture between BP Solar and Tata respectively, plans to raise manufacturing capacity of solar cells by an additional 128 MW in next two years and will invest Rs 440 crores for the same. Since inception in 1991, the company has invested Rs 110 crores that produce solar PV cells annually to generate 50 MW power, including a 36 MW production line inaugurated on March 21. The plant is proposed to raise capacity to 300 MW ultimately, and will require total investment of Rs 1320 crores. Sales in India is growing at 25% per annum. (Mint 220307)

GIS used for locating SHP sites A team of consultants have developed a GIS based system for locating sites of small hydropower projects. This was used by the ministry of new and renewable energy's project in Nagaland. (The Financial Express 020407)

Tender of 25 SHPs in Jharkhand The Jharkhand Renewable Energy Development Agency (www.jreda.com) has invited tenders for carrying out detailed survey and investigation of the 25 identified small hydro power project sites ranging from 59 KW to 6.86 MW. The Pre feasibility of these projects were done by MECON or RITES. The work is to be completed in 14 months. (The Hindu 230307)

POLLUTED RIVERS**Restoring Daurala a follow up from Janhit**

The Janhit foundation has come out with a follow up report to its Sept '05 report *Daurala: Hell on Earth*. The new report is indicatively titled, *Restoring Daurala: Mitigating Industrial Pollution* and with an apt subtitle, *A paper on Corporate Responsibility*. As the title suggests, this is supposed to be a report about how actions by DCM group of industries in Daurala (Meerut district, Uttar Pradesh, East Kali river basin) have helped making a difference in the pollution situation in Daurala. Firstly, the efforts of Janhit Foundation must be appreciated in that they have not only followed up the initial study, but has also come out with a report back, saying what has been going on. The new study, while reporting improvements, raises a number of questions.

As any student of pollution issues in India would tell you, industries do not take corrective action to stop polluting the environment so easily. The hope that Janhit seems to have invested in DCM industries does not seem justified, looking at the situation at face value. The seemingly rather expensively produced report raises a number of other issues too. For example, the report seems to excuse (p 36) the industry in saying that contamination of raw materials may be responsible for the presence of heavy metals in the effluents. This cannot be an excuse for the factory to release unacceptable levels of heavy metals in the effluent. The contention of the report that presence of heavy metal contaminants in sugar & distillery plants is a national problem and DCM "should not be subject to individual criticism" is not a justifiable stand. The use of Shiram Institute for Industrial Research laboratory (belonging to the same DCM industrial house) for the test results used in the report would raise questions about the independence of the results. Janhit said this was because of paucity of funds to get the tests done at independent laboratory, but that won't take away the issue of independence. Also, contrary to what the report seems to indicate, the regulatory bodies do not mandate installation of specific pollution removal technology, but they specify the legally mandatory norms of the effluents. A Janhit report also need not give credit to or be a defense of the industry beyond what is justified.

As the report says, the restoration of Daurala is work in progress and we hope that contemplated steps are taken at the earliest. To achieve lasting impact, involvement of the community representatives in pollution control mechanism is a must, which, unfortunately, the report is nor recommending.

Yamuna case in SC The Supreme Court on March 21 pulled up the government for spending over Rs 1700 crores over the last 12 years and yet the deteriorating quality of Yamuna River water. The Sewage Treatment Plants are also not working at full capacity. Now the

Delhi govt, in place of the current plan of setting up 16 new STPs at the mouth of the drains reaching the Yamuna, is in favour of a new technique called interceptor sewage technology proposed by the Delhi Jal Board, costing Rs 3150 crores. The technology involves laying drainage lines to carry untreated sewage to the existing sewage treatment plants. The DJB, bypassing the SC appointed committee, has already called consultants to send proposals for setting up the new technique. This was opposed as a delaying measure by amicus curie lawyer Ranjit Kumar.

- On April 3, The SC appointed a committee of experts from CWC, CPCB, CGWB and Central Public Health and Environment Engineering Organisation with DJB chairman being member convener and asked the committee to report in four weeks about the comparative feasibility and financial viability of the two options. One is the Rs 4643 crore plan suggested by the Union Urban Development Ministry and the Rs 1860 crore interceptor scheme proposed by DJB.

- The Delhi High Court has asked *Yamuna Jiye Abhiyaan* to take their petition against construction of Global village & other constructions on the Yamuna flood plain to the Usha Mehra committee formed in Dec '05.

Serious Questions The court has been involved on this issue since 1994. It has set deadlines three times in the past: in 1999, 2003 and 2005 for authorities to ensure that the river water is able to meet the lowest potable standards but nothing tangible had been achieved despite spending Rs 1800 crores. The release of untreated effluents into the stream is in complete violation of section 24 of the water pollution act 24, it has been going on for years now, right in the knowledge of the courts. There is complete violation of the law, and court is unable to stop it for years now. This raises serious questions on the legal and institutional regime on pollution control in India.

Pollution is a Crime HC to Haryana On April 3, the Chief Justice of Punjab and Haryana High Court summoned the Chief Secretary and chairman of the Haryana Pollution Control Board and asked them to submit a status report on release of untreated effluents into the Yamuna by Haryana industries. This was following a CPCB petition that the Haryana govt and HPCB had taken no effective steps to ensure that pollutants are not discharged into Yamuna. The HC said told the Chief Secretary, "Pollution is a crime, all such industries which are creating it should be closed". (The Times of India, Indian Express 220307, 290307, 040407, 050407)

Hindon: Villages threaten to boycott polls On another note, over 400 villages of western UP have threatened to boycott polls if area candidates do not promise effective action to clean up the Hindon River polluted with effluents from chemical, sugar and paper mills. Hindon passes through seven assembly constituencies before its confluence with Yamuna in Greater Noida. (The Hindustan Times 030407)

PPCB advt on inaction on pollution of Budha Nullah

The Punjab Pollution Control Board has issued advertisement that the Punjab and Haryana High Court has directed the Board on January 29, 2007 "to stop henceforth, discharge of any untreated industrial effluent into Budha Nullah, directly or indirectly (through sewer/drain)". The notice goes on to "appeal" to all concerned to regularly operate effluent treatment plants, treat their effluent adequately, and stop discharge of untreated effluent and so on. This is another instance of advertisement of failure of the PPCB. Firstly, it was not the Board, but the court that took up the issue and directed the board to take action. Over two months after the order, while there is no evidence of any action by the Board, now the board wakes up to appeal to the defaulting industries! This notice also seems like an attempt to show that PPCB is doing something, rather it really doing something about the issue. (The Tribune 030407)

WATER SUPPLY BUSINESS**Cola firms asked to respond on pesticides report**

The Supreme Court on March 26 has asked the cola companies and the petitioner, Centre for Public Interest Litigation to file their replies to the NK Ganguly Committee (constituted by the Union Ministry of Health and Family Welfare) report on the issue of pesticides in the cold drinks in six weeks. The National Level Experts Group had recommended fixation of upper limit of 1 ppb for individual pesticides in colas. CPIL had asked for a ban on pesticides based on the report of the Centre for Science and Environment that the colas sold in India had dangerous levels of pesticide residues. On March 14, the Union Health Ministry had submitted an affidavit admitting pesticide residues in cola drinks. (Indian Express 270307)

Coke Booted from the Canada University Students at the University of Guelph in Canada have voted to remove Coca-Cola products from campus because of the company's unethical practices in India and Colombia. (India Resources PR 050407)

Coke moves capacity from Plachimada to Orissa The Coca Cola has moved about 10% of its bottling capacity at the controversial Plachimada plant in Kerala to Orissa, following stiff opposition from the people in Kerala. (The Economic Times 220307)

Groundwater to increase Delhi's water supply The Central Ground Water Board has proposed to install tube wells at Yamuna floodplains in Delhi for drinking water supply in the city. The CGWB has claimed that since the tube wells will be installed in the flood plains, it will not hasten the deteriorating groundwater level as the area will get automatically recharged during the monsoon months. It has sent the proposal to the Delhi Jal Board to generate 30 MGD water with the help of 100 tube wells. (THE HINDUSTAN TIMES 081106)

INTER STATE DISPUTES

South Africa Model to be studied The Administrative Reforms Commission has commissioned L C Jain, former member of Planning Commission, former Vice Chair of the World Commission on Dams and former High Commissioner to South Africa, to study the South Africa model with a view to find out if it could be used in India. (The Hindu 220307)

Kerala Committee on Mullaperiyar Kerala Govt has set up a committee to assess the environmental impact of raising the height of water behind the Mullaperiyar Dam from 136 to 142 ft. Tamil Nadu has objected to the formation of the committee. (Deccan Herald 210307)

"Review PAP agreement": Review Committee The Petition Committee of the Kerala Legislative Committee has expressed concern over the non review of the Parambikkulam Aliyar Project (PAP) treaty with Tamil Nadu since 1988, when the review was due. In its report submitted on March 29, the committee noted that Kerala seldom received the entire water due to it as per the agreement. The backlog in water release to Kerala has kept increasing from year to year and had reached a stage where the State would have to write off the old dues. The committee has recommended that the Water Resources Department should conduct a viability study immediately on the measures that could be adopted to ensure that the state received its share of 7.25 TMC ft due under the agreement. (The Hindu 300307)

Punjab to SC: Current supplies will be continued The Punjab Counsel assured the Supreme Court on March 28 that Section 5 of the Punjab Termination of Agreement Act of 2004 will be honoured, meaning that the current provisions of interstate water agreements would be continued. The court has fixed July 17 for hearing the case.

The next day, on March 29, the Punjab CM declared in the assembly that his govt would challenge the validity of Section 78 of the Punjab Reorganisation Act, 1966, which states: "...all rights and liabilities of the existing State of Punjab in relation to Bhakra Nangal Project and Beas Project shall, on the appointed day, be the rights and liabilities of the successor States in such proportion as may be fixed, and subject to such adjustments as may be made, by agreement entered into by the said States after consultation with the Central Government or, if no such agreement is entered into within two years of the appointed day, as the Central Government may by order determine..." The Punjab CM has also asked for examination of validity of the Rajiv-Longowal accord.

In 1979, when Badal was the CM, he had filed a petition in the Supreme Court challenging sections 78 and 80 of the PRA and also the award of river waters announced by the then Prime Minister Indira Gandhi in 1976. This application was withdrawn by Darbara Singh, the then Punjab CM in 1982. (The Tribune 290307, 300307)

GROUND WATER**PC wants GW in concurrent list?**

The Deputy Chairman of Planning Commission Montek Singh Ahluwalia has urged the Water Resource Ministry to build a consensus on levying cess on ground water extraction to address the problem of overuse and scarcity of ground water. The resources generated from the cess could be utilized for recharging ground water. The PC has set up an Expert Group headed by Kirit Parikh to give its report on a GW policy and feasibility of inclusion of groundwater on the concurrent list. Mr Ahluwalia called for a review of laws governing ownership of GW on private land. He said that at present the total per capita availability of GW is above the level of water stress but in 20 years it will become water stressed. The 9 % growth rate target and 10-11% growth in industry in the next five years will see further increase in GW exploitation.

➤ The focus of the 12th National Symposium on Hydrology, held at Delhi on 14-15 Nov '06, was "Groundwater Governance: Ownership of groundwater and its pricing". The Symposium recommended a slab system for water pricing structure, besides 23 other points, including the need for the proper assessment of groundwater resources at the macro and the micro level in each state and the revamping of all water related laws. The higher the consumption, more should be the price. The high water consuming industries should be preferably located in areas with high potential of GW. The governance and ownership and property rights issues in the GW sector have not been properly resolved, resulting in anomalies in water management. The regulations and management of GW has to reflect equity and protection of weaker section issues as also quality and environment concerns.

➤ **Opposition** The Punjab representative opposed the suggestion of Central control. He said that water is a state subject as per the constitution & that it included surface & GW. (THE HINDU 151106, THE TRIBUNE 161106)

HP plans to regulate GW The Himachal Pradesh Govt is drafting a bill for regulation of groundwater. Under the rules, scheduled to be introduced in 2007, the state will set up a Ground Water Authority (GWA) which will monitor and control the use of ground water. It will also notify critical areas where no withdrawals will be permitted or restrictions will be imposed on existing users. All contractors and drilling agencies engaged in the job of tubewell installation would have to get a registration from GWA. If the availability of the groundwater improved in a notified area, the authority could advise the govt to de-notify the area. The authority would take steps to ensure that exploitation of groundwater did not exceed the natural replenishment of the aquifers and wherever there was a mismatch, steps to ensure augmentation would be taken in addition to

regulation. The law will also make it mandatory for factories to create structures for artificial recharge of water, at least to an extent of 85% of the actual withdrawals. Royalty at the rate of Rs 1 per 10000 liter of water will be charged for the users, and 75% of this amount will be ploughed back to panchayats for water conservation. The bill had been earlier introduced in state assembly in Aug '05. However the state cabinet finally approved the Himachal Pradesh Ground Water (Regulation and Control of Development and Management) Rules, 2006 on Nov 7, '06. (THE INDIAN EXPRESS 171106, THE TRIBUNE 110805, <http://himachalpr.gov.in/cabinetdes.htm>)

GROUND WATER CONTAMINATION**Punjab PCB threatens action: Advt of its failure**

In a shocking advertisement in newspapers, the Punjab Pollution Control Board has said that it apprehends that certain units "are discharging their untreated effluents into the concealed bore holes within their premises which is causing irreparable damage to the ground water". The PCB has asked such units to stop such practices, failing which, the Board will take stern action against defaulters. Calling it an inhuman act, the Board has also offered reward for those who give information about such acts.

This is clearly an advertisement of failure of the PCB to control pollution and seems only like a valiant attempt to show that it is doing something about this serious problem, when in reality it does not seem to be doing anything. The Pollution Control Act provides the powers to the PCB to enter any premises suspected of creating pollution and take action against them, but the PCB does not seem interested in using those powers. In the past Haryana and some other PCBs also brought out such advertisements of their failure to act on polluting units. (The Tribune 310307)

Contamination in Karnataka GW A sample survey conducted by the Dept of Mines and Geology in Karnataka on the quality of groundwater in all districts has revealed high content of nitrate and fluoride in GW based drinking water sources. The study has found that 22.37% of the DW sources contained high nitrate content, 9.58% of the sources had high fluoride content and water in 8.05% of the sources was hard. The Fluoride content in DW from GW was very high in Kolar, Tumkur, Raichur and Bellary districts, the nitrate content was high in Tumkur, Mysore, Gulbarga, Bellary, Chitradurga and Belgaum districts. Udupi was the only district where not even a single source of drinking water contained either nitrate or fluoride, and water was also not hard. (THE HINDU 111106)

High fluoride level in Delhi GW According to Economic Survey of Delhi 2005-06, the fluoride content in the GW in the various areas in the city is much more than

permissible limit. The fluoride level in the areas like Green Park in south Delhi is almost 20 times more than the permissible limits. As per the National Standards, the upper limit for fluoride content in GW is 1 mg/liter. The survey found the fluoride level (mg/lt) at Green Park (19.33), Nazafgarh (8.7), Sahabad (7.36), Shahbad-JJ Colony (6.67), Narela (4.87), Rohini (4.35), Suraj Park (4.23), Lodhi Road (4.0), Okhla (3.0), Mohammadpur (2.5), Jangpura (2.44), Hari Nagar-Ashram (1.5), Srinivaspuri (1.38) and Sabzi Mandi (1.3). (THE INDIAN EXPRESS 221106)

Arsenic in Tripura GW The PWD minister of Tripura has disclosed that arsenic has been found in GW in some areas, posing a serious threat to the people. The arsenic has been found at Hrishyamukh and Santi Bazar in S Tripura district, Kamalpur and Salama in Dhalai district and Champaknagar in W Tripura district. The preliminary study has been conducted by the Lucknow based agency IRTC in vulnerable areas of the state, which confirmed the intensity of arsenic is not less than 0.05 mg. The Tripura Govt has already requested the Central Govt help in this regard. (ASSAM TRIBUNE 091106)

FLOODS

Nikki Tawi Flashfloods in Jammu *Nikki Tawi*, which literally means smaller Tawi, is one of the two streams that Tawi river bifurcates into near the Tawi bridge in Jammu city. Till about three decades ago, this stream used to carry 20% of the total Tawi River flows, but now carries about 60% of the flows, and this has added to the flashy behaviour of the river. The two streams again meet at Makwal border check post. About 25 border villages, including 12 of the 45 in the island between the two streams, face the erosion due to shifting nature of Nikki Tawi. The residents blame the Ranbir Canal and sand quarrying near the main Tawi bridge in Jammu as responsible for the increase in flow in the eastern tributary. (The Tribune 260307)

Hooghly Erosion Erosion of the Hooghly bank at Palta, in North 24-Parganas, is posing threat to filtered water supply to Kolkata. About half of the five km embankment on the eastern bank of river at Palta is on the verge of being eroded. The river has swallowed more than 12 bighas of land. If the embankment is not bolstered, the lifting jetties and underground intake well pump house, located on the riverfront, will be destroyed. The river will also swamp the Palta waterworks. There are three lifting jetties, about 2500 ft apart, on the bank of the river. A project to protect the embankment near the waterworks has been approved. The Palta waterworks designed and set up by the British engineers 138 years ago, continues to be mainstay of city's water supply. Of 5.5 M Kolkatans, more than 3.8 M get filtered water from Palta. The Palta waterworks started as a 6 MGD capacity plant, it now produces 20 MGD of treated water. (THE TELEGRAPH 161106)

TLBC breaches The Tungbhadra Left Bank Canal (TLBC) breached near the 69th mile on Oct 23, '06. The canal bank ht of 20 ft and width of 40 ft was washed away. The farmers say that it is because of the poor quality of work done last summer, when the release of the water was stopped in to the canal that the canal has breached. This is not the first time that the TLBC has breached. From 1964, when the left bank canal work was completed, till date it has breached at least 200 times. Many reports of the committees set up by the Govt to study the problems have been gathering dust. (DECCAN HERALD 241006)

Distributory breaches The cotton crop in more than 80 ha was inundated following, 60 ft breach in the Malikpura distributory at Abhohar district in Punjab on Nov 11, '06. The framers say the irrigation dept of the Punjab had not maintained the canals that had been lined at a cost of Rs 20 M. The dept officials said that trees grown on banks had been responsible for most of the breaches.

> Cotton crop over 30 ha was flooded with the water on Nov 1 following a breach in Behman distributory at Bhatinda district of Punjab. The farmers of the area rued that the canal was in a neglected state for long. (THE TRIBUNE 021106, 121106)

FISHERIES

Decline fish species in Yamuna The number of fish species in Yamuna has declined sharply. Till a few years ago, the Yamuna was home to 120 species of the fish, while now the number stands at 60. The Haryana Govt has envisaged a Rs 730 M project to improve the habitat in the Yamuna to provide safe breeding places for the fish. The project has been sent to Central Govt, which would forward it to the Japan development Bank for financial tie-up. The Haryana Fisheries Dept set up a record of sort this year when it attained the fish production of 16500 kg per Ha in a Haryana Raj Bhawan pond. The average production of fish in Haryana is 4575 kg per Ha and the national average production is 2260 kg per Ha. The total fish production in the state has gone up to 48200 T per year from 600 T per year in 1966. The Dept wants to increase the production to 55000 T by April '07. (THE TRIBUNE 061106)

Punjab policy on fish farming Some of the farmers in Punjab are interested to diversify from wheat paddy cycle to fish farming, but the state policy discourages them. The Central Govt has announced a subsidy of Rs 40000 per Ha for the farmers interested in fish farming. The Centre has provided Rs 1 M in Amritsar & Gurdaspur districts for subsidy to fish farmers. However, the amount has not been released to farmers as the state failed to provide the required matching grant of 25%. The income of the conventional farmers is not taxable. But the farmers carrying out the commercial fish farming or poultry are made to pay tax on industry's pattern. The farmers who take up fish farming or poultry are also made to pay commercial charges for tubewells. (THE TRIBUNE 161106)

Mega Water Projects in Baluchistan: Claims and the Reality

“Mega Projects”, or large civil-engineering based infrastructure projects such as dams, canals and ports, figure prominently in the federal govt’s vision for Balochistan’s development. Mega Projects are presented as the only way in which the grievances of Pakistan’s largest but least populated province could be compensated for decades of neglect.

The aim of this paper is to examine govt claims about the financial outlay on Mega Projects in Balochistan and its supposed benefits for the people of the province. The paper questions some of the “headline” claims of the federal govt, and raises points for further investigation for technocrats, politicians, and development experts in Pakistan.

Mirani Dam The Mirani Dam project in District Kech just north of Gwadar is nearing completion at a total cost of Rs 5.8 billion. Officially, the Mirani Dam project is an irrigation project on the Dasht River. The Dasht River brings water from Nihang River and floodwater to irrigate lands of Dasht river basin in the flat terrain of Kech area. According to the design of Mirani Dam, it will be linked with two rivers to irrigate 33,200 acres.

It is useful to understand the irrigation system in the Dasht valley before the construction of the Mirani Dam. Like many other parts of Balochistan province, land was brought under crop through the construction of terraces or “bunds”. In the Dasht valley the bunds diverted river flow and flood water into fields, irrigating successive fields along a slope. The agrarian economy, therefore, was concentrated around the riverbed.

The concept of storing water upstream for irrigation using canals is alien to these regions. The Mirani Dam, therefore, will potentially require a complete overhaul of the traditional system of water distribution, and even the demarcation of property rights in land. It is not clear if the requisite institutional preparations have been made. What is striking, however, is that many local people in the Dasht valley fear that the Mirani Dam is not actually

for irrigation purposes at all. They point to the free flowing Dasht River – along with occasional flash floods – as their traditional agrarian lifeline. The construction of the dam has stopped the river flow. A commonly expressed fear is that the dam is simply a storage for the supply of fresh water to Gwadar port and associated commercial, residential and industrial users. The Mirani

Dam project design itself makes no mention of any non-irrigation use. Some other confidential official documents, however, do mention the supply of around 1.5 million gallons a day from Mirani and Akra Kaur dams to Gwadar. The fact that some property developers have begun to

advertise this claim adds weight to the suspicions of the Dasht valley residents.

Kachhi Canal Project The largest single project under construction in Balochistan is the Kachhi Canal project with an allocation of Rs 31 billion. Kachhi Canal is supposed to irrigate 712 750 acres in Dera Bugti, Nasirabad, Bolan, & Jhal Magsi Districts of Balochistan. The capacity of this canal is 6,000 cusecs. It has a total discharge of 2.021 MAF (million acre feet) of which 0.452 MAF is perennial and 1.57 MAF is flood flow.

The canal takes off from Indus River at Taunsa Barrage in the Dera Ghazi Khan District of Punjab. The total length of the canal is 500 km, of which 300 km is in Punjab and the remainder in Balochistan. The 300 km of the canal in Punjab is going to be lined, in order to prevent water losses to non-beneficiary areas. The 200 km in Balochistan will be unlined. The route of the

canal in Punjab passes through existing canals, such as the Dera Ghazi Khan Canal. Water will need to be lifted by pumps in order to cross the existing Dera Ghazi Khan Canal. The Kachhi Canal will enter Balochistan close to the Sui and run in a westerly direction towards Kachhi district. The govt has made much of the fact that the Kachhi canal passes through Punjab: “Punjab has been gracious to provide land for its 350 km stretch that will pass through the province. This is all for your benefit and

What is striking, however, is that many local people in the Dasht valley fear that the Mirani Dam is not actually for irrigation purposes at all. A commonly expressed fear is that the dam is simply a storage for the supply of fresh water to Gwadar port and associated commercial, residential and industrial users.

The fact that the canal runs for 300 km in Punjab before entering its command area, and the fact that those 300 km need to be lined, is clearly responsible for its high overall cost. Here it is pertinent to ask whether it might have been possible for Kachhi to take off from Guddu Barrage rather than Taunsa. Guddu is barely a distance of 20 km from Sui, whereas Taunsa is located 300 km away.

prosperity of your area.” (President’s address at inauguration ceremony of Mirani Dam on Nov 16, 06)

The fact that the canal runs for 300 km in Punjab before entering its command area, and the fact that those 300 km need to be lined, is clearly responsible for its high overall cost. What is interesting to note, however, is that the point at which the Kachhi Canal is supposed to enter Balochistan is literally a few kilometers (under 5 km) away from the route of the existing Pat Feeder Canal. The Pat Feeder Canal, constructed in 1969, takes off from the Guddu Barrage on the Indus in Sindh. It has a capacity of 3,180 cusecs and irrigates 352 000 acres in Nasirabad and Jaffarabad districts of Balochistan. There is an existing project for the re-modelling of the Pat Feeder Canal at the cost of Rs 2.2 billion. Here it is pertinent to ask whether it might have been possible for Kachhi to take off from Guddu Barrage rather than Taunsa. Guddu is barely a distance of 20 km from Sui, whereas Taunsa is located 300 km away.

Besides canal construction, a major component of the Kachhi Canal project is the re-modelling and capacity expansion for Taunsa Barrage, as well as other civil works on existing canals taking off from Taunsa. In principal, it might have been possible to re-model Guddu Barrage and to expand the capacity of Pat Feeder upto Sui, so that it might have acted as a feeder for the Kachhi Canal. In fact, it is remarkable that there has been virtually no public discussion of this aspect of the Kachhi Canal design.

Given the mistrust that has built up over the decades between provinces over matters of water distribution, it is of some political consequence that the Kachhi Canal off-take was chosen in Taunsa in the place the possibly cheaper option of Guddu. It would clearly be a matter of concern for Sindh if the expanded capacity at Taunsa Barrage were used as a pretext by the upper riparian to store more water than its legal entitlement. The fact that Kachhi takes off from Taunsa rather than Guddu increases the overall volume of water over which the upper riparian exercises control.

While Sindh has been vocal in its opposition to other irrigation projects on the Indus, it has not raised any objection to Kachhi Canal. This is because it is felt that Balochistan needs to be provided its fair share of water resources, and there is a measure of mutual political

sympathy between “nationalists” of the two provinces. This fact has already been used as an argument in the favour of the Greater Thal Canal, which is designed to be a flood canal, but which Sindh suspects of a being a perennial. The proponents of Thal Canal have argued that Sindh ought to object to Kachhi Canal too on the same grounds as it uses against Thal Canal, because Kachhi Canal is also designed primarily as a flood canal.

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Setting aside the political arguments about these canals the question still remains as to whether or not Guddu might have been a much cheaper option than Taunsa for the Kachhi Canal. If this indeed were the case, then the choice of Taunsa would suggest that a large part of the amount being spent on Kachhi Canal is not for the benefit of Balochistan, but other economic and political interests – such as the upper riparian, large landowners along canal route, or even the construction industry. These questions will remain speculative, but they are important to raise given the high economic cost and loud propaganda claims surrounding the Kachhi Canal project.

This canal is going to increase the acreage of irrigated land in the one region of Balochistan that is already endowed relatively good agriculture compared to other arid and semi-arid parts of the province. There are, moreover, questions about the choice of the point of take-off – Taunsa Barrage instead of Guddu Barrage – that suggest that it might have been possible to provide additional irrigated acreage to Balochistan at lower cost.

These technical questions are important for Balochistan and the rest of Pakistan. It is important to cut through the propaganda and to ask hard questions about the actual benefits of various projects and alternative ways of pursuing economic development. The present paper does not provide answers to these technical questions, but has provided sufficient material to suggest

These technical questions are important for Balochistan and the rest of Pakistan. It is important to cut through the propaganda and to ask hard questions about the actual benefits of various projects and alternative ways of pursuing economic development.

that there is a case to be answered.

(Edited from *Mega Projects in Balochistan* dated March 2007 by Azmat Budhani and Hussain Bux Mallah)

World Bank to fund Basha Dam A high-level World Bank delegation led by Chief Water Specialist for South Asia David Grey has made it clear to the govt that funding will not be made available for the proposed Diamer-Basha Dam till concerns over the possible environmental and social impacts of the project are addressed fully. (The Post 200307)

THE NEPAL PAGE

Minister against privatizing water utility Minister for Physical Planning and Works Hisila Yami said that privatization of water utility is like selling one's own mother; and added that Kathmandu Valley's existing water sources will suffice in meeting the demands of its residents. The newly inducted minister said this during her meeting with representatives from Water and Energy Users' Federation. The govt has already decided to contract out Kathmandu Valley's water supply management to UK firm Severn Trent Water and impose an incremental water tariff structure that will favor the rich more than the poor. (Kathmandu Post 050407)

Small hydro In the Hydropower Invest Mart 2006, 12 parties have agreed to invest Rs 5.5 billion to generate 45 MW. Some 20 Independent Power Producers, 12 banks, eight insurance companies, 20 contractors, 60 potential investors and consultants are participating in the Mart. Mart was jointly organised by the Confederation of Nepalese Industries, Small Hydropower Promotion Project-GTZ and Winrock International. Five small HEPs — Hadi Khola, Nyadi Khola, Hewa Khola, Mailung Khola and Madi Khola were showcased at the mart as an avenue for investment. (THE KATHMANDU POST 220806, THE HIMALAYAN TIMES 240806)

ADB offers \$ 45 m for West Seti The Asian Development Bank has made a proposal to the govt to loan up to US \$ 45 million for 15 % equity participation in the 750 MW West Seti HEP. This arrangement is being mulled to win the trust of Chinese investors. The project is being financed on a 75/25 debt/equity ratio, with most of the debt contribution sought from Chinese financial institutions, including Export Import Bank of China and Bank of China. The govt will be free to withdraw its participation any time it wishes, by selling its equity share. ADB will itself have separate equity participation of 20 %, in the US \$ 1.2 billion project. The project will have 25-30 % equity participation from Australia's Snowy Mountain Engineering Corp. China National Machinery and Equipment Import and Export Corp will build the project with some Indian agencies. SMEC has an agreement for providing 10 % royalty to the Nepal govt, in the form of 75 MW of peaking power from the storage project. Nepalese financial institutions will be investing in the project through power bonds. A company is being registered in Hong Kong to run the project. SMEC, which obtained the license for the project in 1994, has a PPA with PTC India at around five cents per unit. The project site lies in Doti district in far-western Nepal. The project's construction is estimated to take 5.5 years. (Kantipur.com 260307)

EPF funds for Upper Tomakoshi NEA has sent a draft Memorandum of Understanding to Employees Provident Fund seeking the latter's written commitment to be the lead investor in the proposed US \$ 392 million 309 MW Upper Tamakoshi HEP, by funding Rs 15 B. "We are

providing corporate guarantee to EPF's fund with our assets as collateral," NEA deputy MD said. Of the fund expected from EPF, a part is proposed to be loan while the rest is proposed to be convertible debenture. (The Kathmandu Post 230307)

NEA loss The Nepal Electricity Authority has incurred a cumulative loss of Rs 7 billion by 2006. The state power monopoly started incurring heavy financial losses after 2002 when privately-built power plants such as Khimti, Bhotekoshi and Chilime were connected to the national grid under the PPAs. In 2006 alone, the NEA has suffered a loss of Rs 2.47 billion. NEA MD Karki blamed the exorbitant PPA with independent power producers, high interest rate of loans taken from the govt (10.25%), pilferage of electricity, technical and non-technical losses (24.70%) and non-adjustment of electricity tariff for the past five years for the NEA's loss. He said the NEA had to pay Rs 1.75 billion to the three private power plants last year to purchase "flood energy" they produced. The NEA has been bearing losses of Rs 3.13 to Rs 3.24 for every unit of electricity purchased from the three IPPs. The NEA is also bearing a loss of Rs 2.6 for every unit of energy purchased from India. Karki said, "Despite the losses, the NEA will go on as it is a govt entity and has good relations with IFIs." (THE HIMALAYAN TIMES 180806)

Himal Energy Acquires More BKPC Shares Himal International Energy Private Limited (HIEPL) has acquired another 10 % shares in Bhote Koshi Power Company from International Finance Corp. Following the deal, HIEPL, along with its sister concern - Himal International Power Corp, now owns 95 % equity in BKPC. The remaining 5% shares are owned by Montgomery Watson Harza, an American engineering company. Bhote Koshi Power Project, a 36 MW run-of-the-river HEP in Sindhupalchowk district, was commissioned in Jan '01 with a total investment of US\$ 98 million. BKPC is selling power to NEA, under a power purchase agreement. (The Kathmandu Post 280307)

NEA permitted to Buy Power from India The Nepal govt has permitted the NEA to buy power from the Power Trading Corp India from the purniya-Kataiya route. The NEA will pay Indian Rs 4.4 per unit. (The Himalayan Times 230307)

ILFS-NEA JV Underway Nepal Electricity Authority has completed all the procedures for setting up joint venture Company with Indian Company Infrastructure Leasing and Finance Services (ILFS) to initiate the construction work of transmission line between India and Nepal, which will ease power exchange between two countries. NEA will own 50 % share while 26 % share will be held by ILFS. NEA and ILFS have signed a pact for constructing 220 KV transmission line between Nepal and India. In the first phase, the transmission line of Butwal-Gorakhpur and Duhabi-Purniya will be constructed. The transmission lines to be constructed in the second phase include Dhalkebar-Mujjafarpur and Anarmani-Silgadhi. (Annapurna Daily, 310307)

BANGLADESH

Electricity import from India The Bangladesh govt will explore the possibility of importing electricity from India to resolve the persisting power crisis in the country. According to the plan Bangladesh will purchase 300 MW of electricity from hydropower in Meghalaya. ADB has expressed its keen interest to invest in the project. The USA-based Nexant Company, Power Grid Corp of India, Bangladesh Power Development Board and Power Grid Company jointly would undertake the feasibility studies. This electricity might be connected to the national grid from Meghalaya either from Tamabil of Sylhet or Netrokona or Sunamganj or Sherpur districts. The power division has suggested the USAID to initiate a regional electricity interconnection deal instead of bilateral agreement involving all the countries of the SAARC. (THE NEW NATION-BD 010806, FINANCIAL EXPRESS-BD 020806)

WB funds sought for waterways Bangladesh is seeking US\$300 million in loans from the World Bank to develop its inland waterways. "Rivers are the gift of nature, but we fail to reap benefits from them for they are often polluted and silted," said Sunil Kanti Bose, chairman of Bangladesh Inland Water Transport Authority. Xian Zhu, country director of the World Bank said the bank was "committed to support Bangladesh govt's efforts" in this sector. The WB had so far offered US\$51 million to develop the sector. (Reuters 280207)

WORLD DAMS

France recognizes the right to water France has published a new law on water and the aquatic environment whose first article stipulates that each individual, for his food and his hygiene, has the right to reach drinking water under conditions economically acceptable by all. (FAN bulletin 030407)

Trouble for Mekong River Commission? A recent review of the working of the Mekong River Commission (MRC) was highly critical of the commission. It concluded that unless the commission becomes more effective water governance body that can take on the brewing trans-boundary conflicts in the basin, donors "need to think about a short term exit strategy". The Australian Mekong Resource Centre was hired to do the review. However, the assessment has come under some cloud as the official of Danida that commissioned the review, joined the research team, taking leave from his office. (Development Today, 061206)

Flooded Biomass affects water quality after reservoir impounding One of the Hydropower Industry's mainstream journals; HRW has accepted that the decomposition of vegetation flooded during creation of reservoir can lead to the emission of greenhouse gases, including Carbon dioxide and methane. Some of these gases can decrease water quality in the reservoir and in the downstream river. An article in the Nov '06 issue of the journal about a study over twelve years of

eight dams in five countries says that under anaerobic water conditions, production of methane is favored over carbon dioxide. The study concludes that the development of HEPs in tropical zones should take into account the complexity and fragility of these ecosystems, including the greenhouse gas emissions. The main effect of this phenomenon on water quality is oxygen depletion at the bottom of a new reservoir and in the river downstream of the turbines, as the methane consumes oxygen that is dissolved in the water. The lower level of oxygen at the bottom of the reservoir can last many years, as it was found that at Petit Saut dam, the effect lasted for ten years. The study makes it clear that since generally the downstream water comes from lower layers of oxygen loaded with reducing elements like methane and hydrogen sulfide, it captures oxygen in the downstream river, and the effect can last over long stretch, upto 50 kms as found at Petit Saut. Residence time (the time required for complete change of water in a reservoir) is an important parameter. The water from reservoirs with higher residence time have higher reducing gas concentrations, and thus lower oxygen content and poorer quality water in the downstream area. The research indicated that to have better quality water in the downstream area, a number of methods can be employed, including having variable height intake (as water from higher level in the reservoirs have less reducing gases) and building an oxygenating weir just downstream of the tail race level.

Dam removal to cost California US\$67M The US state of California is to spend US\$67M to tear down five small dams along Battle Creek, a tributary to the Sacramento River. The state Department of Fish and Game has announced the funding as the final piece of a two-decade long effort to make it easier for salmon and steelhead fish to migrate upstream to their spawning beds. Eight dams along Battle Creek, built in the early 1900s, diverted water to power houses that generate electricity for 15M Pacific Gas & Electric customers from Eureka to Bakersfield. PG&E said the utility will replace the lost power with other sources but will keep three dams in operation. Removing five dams and adding fish ladders to the other three will open 68km of spawning and rearing habitat to wild salmon and steelhead. But critics say the project doesn't go far enough because the best fish habitat sits above the dams that will be left in operation. (International Water Power & Dam Construction 020407)

Klamath dam removal The California Energy Commission says that removing the Klamath dams and enabling equivalent power capacity to be sourced from elsewhere would be about US\$114M less expensive than re-licensing the HEP and installing fish ladders. PacifiCorp is the owner of the 169 MW Klamath hydro scheme. The scheme is currently under re-licensing review with the Federal Energy Regulatory Commission. Both sides have submitted their case. (International Water Power & Dam Construction 280307)

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REVEALING QUOTES

"Perhaps hydropower is not as green as we thought. A lot of these tropical hydropower schemes would have been made by simply flooding a forest. There would have been a lot of trees and plants, and you need to think about what happens to all that carbon."

Prof Mice Acreman, UK Centre for Ecology and Hydrology (The Hindu 290307)

"But strangely, there is no subsidy for organic manure...(People displaced by the Upper Krishna Project) spent the cash and now they are steeped in poverty again. They didn't use the houses because they were built on graveyards and they could not use the land because it lacked irrigation facilities."

Amar Nath HK, Senior economist, NIPFP, (The Mint 020407)

Only that they (biofuels) are a formula for environmental and humanitarian disaster. In 2004 I warned, on these pages, that biofuels would set up a competition for food between cars and people. The people would necessarily lose: those who can afford to drive are richer than those who are in danger of starvation. It would also lead to the destruction of rainforests and other important habitats... these effects are happening already.

George Manibot (The Guardian 270307)

"Like the sinking of *Titanic*, catastrophes are not democratic. A much higher fraction of passengers from the cheaper decks were lost. We'll see the same phenomenon with global warming."

Henry I Miller, Stanford University (The Times of India 020407)

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