

Dams, Rivers & People

SANDRP

VOL 2-ISSUE 7-8

Rs 15/-

AUG-SEP 2004

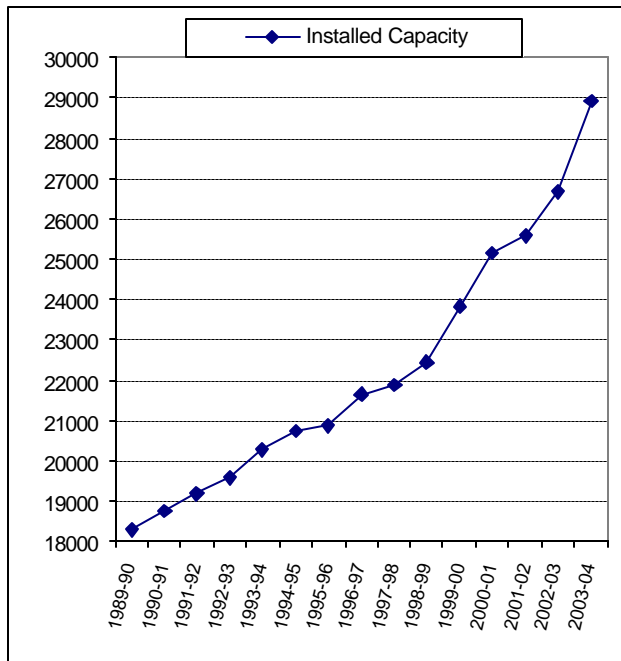
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CONTACT INFORMATION: Himanshu Thakkar, Bipin Chandra, Ganesh Gaud, South Asia Network on Dams, River and People, C/o 86-D, AD Block, Shalimar Bagh, Delhi 110 088. India. Ph: 2748 4654. Email: cwaterp@vsnl.com
Web: www.narmada.org/sandrp

DIMINISHING BENEFITS FROM LARGE HYDRO PROJECTS

In recent years there has been a big push for more hydropower projects, mostly big hydro projects. In fact, over the last ten years, hydropower installed capacity in India has gone up by over 8000 MW. Installed Hydropower capacity was 20833 MW in 1994-5, which has gone upto 28925.2 MW by March '04. (All figures are from the Central Electricity Authority of Gol.)



The main rationale given for pushing for more big hydro projects has been two fold: More Power Generation and More Peaking Power. Let us see what benefits this additional capacity has yielded. The Power Generation from Hydro projects in 1994-5 was 82712 Million Units. The Generation in 2003-4 was lower at 73775 MU, almost 9 000 MU lower than in '94-5.

This sounds surprising. In the second graph we have plotted the Power Generated per MW of Installed Hydro capacity for the last ten years and one can see the generally declining trend. The trend is more or less the same over the last 15 years. The MU generated per MW installed hydro capacity has been the lowest ever in the last four years when for the first time generation in a year has gone below 3 MU per MW. (If a MW of installed capacity were to run at full capacity throughout the year, it would produce 8.76 MU.)

What this clearly means is that the benefits from Large Hydro projects are declining.

It would be argued that per MW installed large hydro generation is likely to be dependent on rainfall in that year. Let us compare the rainfall figures with the hydropower generation for a few years.

➤ Though in 2003 the rainfall was 102% of normal, the power generated per MW Hydro installed capacity

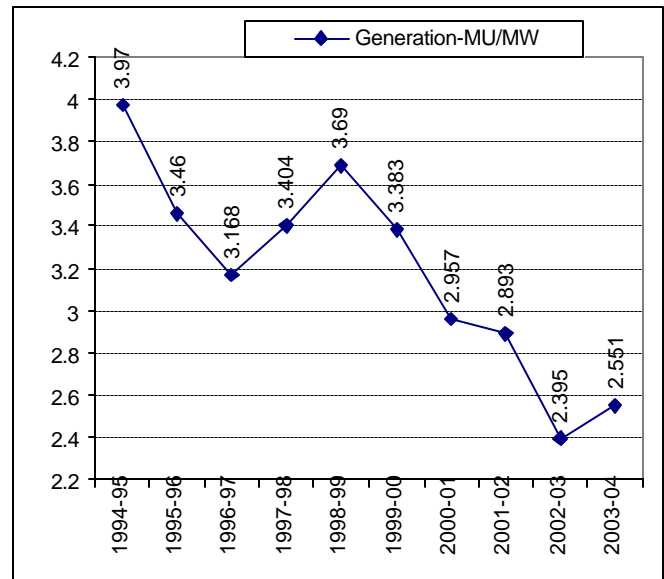
was LOWER than the figures for 1999, 2000 and 2001 when the rainfall was 96%, 92% and 92% of normal.

➤ Rainfall in 1992-93 was 93% of normal and in 1995-96 was normal and yet per MW hydro generation in 1992-93 was higher than that in '95-96.

➤ Rainfall in 1991-92 was 91% of normal and in 1993-94 it was normal, and yet per MW hydro generation in 1991-92 was higher than that in '93-94.

So the annual all India rainfall alone is not good enough indicator to explain the above trend. One is likely to see closer relationship between rainfall in specific areas with the hydro generation in those areas.

Climate change related predictions generally predict higher hydropower generation in short term, but this is not borne out by the trend we are seeing.



Several other explanations are possible for this trend. This kind of trend is possible if the new hydro capacities being added are more in the form of run of the river projects rather than storage based dams. Another possible explanation could be that the aging of dams and machines is reducing the generation. The silting of dams could be another possible reason for this trend. The increased installed capacity in a basin, beyond its hydrological capacity would also reduce the generation per MW installed capacity. This could be seen for example in Krishna basin in South India where due to the coming up of the World Bank funded Upper Krishna project in Karnataka, the generation at downstream Nagarjunsagar and Srisaillam projects is suffering. Similar situation prevails in Cauvery basin.

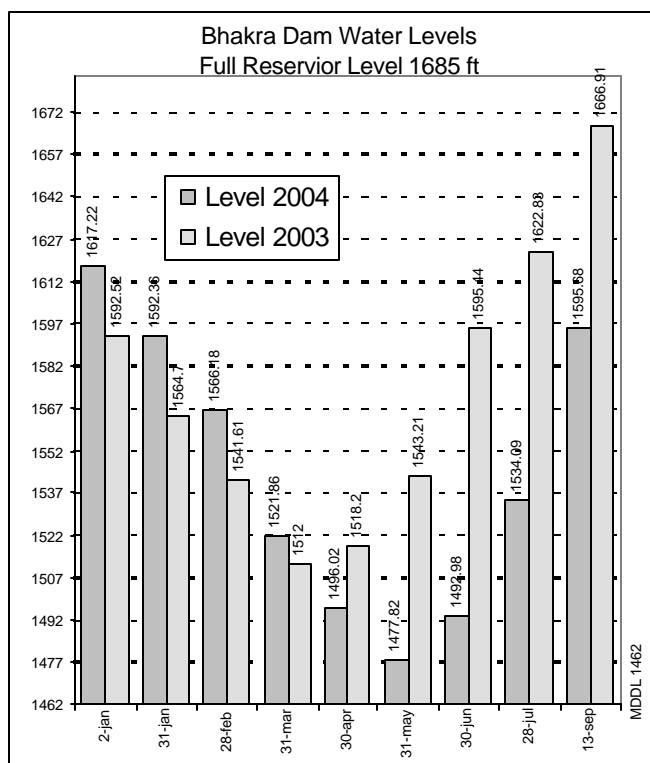
However, most important conclusion one can draw from this trend is that is that benefits from Large Hydro projects reduce with time. Clearly, Large Hydro Projects are not sustainable options.

SANDRP

BBMB made crisis in North India? Bhakra Level depleted last summer to generate extra power?

As screaming headlines (e.g. The Tribune, a leading newspaper of North India gave front page top headlines to this effect on Sept 12 and again on Sept 14, 2004) have been telling us, next few months in North India are going to be quite bad from the point of view of availability of water and Power. The newspapers tell us that this is due to low water storage in Bhakra Beas system managed by Bhakra Beas Management Board (BBMB). We are told that this is due to natural phenomena of low rainfall in the catchments of the dams.

There are many stories within this story. Over-dependence on Bhakra Beas Dams, steep decline of groundwater levels, destruction of local water systems, big demands and polluting rivers are some important stories within this story.



However, one question that is most relevant here to ask is, if this situation is entirely due to natural reasons as is made out to be. Let us look at a few facts.

- Last year's high water level at Bhakra dam reached on Sept 27, 2003 was the highest for last five years, 13 ft higher than the highest level reached in the previous year.
- And yet the lowest water level at Bhakra dam this year was lowest for nineteen years. 44 ft below the lowest level of previous year.
- Last year's high water level at Pong dam was over 26 ft higher than the corresponding level in previous year.

- And yet the lowest water level at Pong dam this year was lowest in sixteen years. Almost 14 ft below the lowest level in the previous year.

How did the water level at Bhakra Dam went down this year is revealed by the chart where side by side, the level of water at Bhakra dam on the same dates the previous year are also plotted to show the comparison. It is clear from the chart that though the year started with Bhakra level much higher than corresponding date last year, by April 15, the water level at Bhakra in 2004 was already lower than the figure the level on the same date last year. The gap thereafter kept increasing. By Sept 13, 2004, the gap had grown to over 71 ft, ringing the alarm bells as Bhakra filling period for this year comes to close by Sept 15.

This clearly shows that during the first four months of 2004, for some reason the level of water in Bhakra was allowed to go down much lower than it should have been.

Why are these levels so important? For one, the North India today is hugely dependent on these dams. The irrigation and hydropower generation of North India, particularly Punjab, Haryana and Rajasthan is significantly dependent on these dams today. Significant proportion of drinking water requirements of N India, including that of Delhi comes from Bhakra system. THEN, Why did the level go so low when we started with such high water levels in both Bhakra and Pong reservoirs? Why was the Bhakra and Pong levels allowed to go so low this year?

One possible reason could be seen if we look at the power generated at the Bhakra's 1250 MW installed capacity hydropower station during January to April 2004 and compare them with the figures of the previous year. We find the following figures:

Power Generation at Bhakra Dam

Power Generation, MU	2004	2003
January	413	359
February	352	240
March	386	289
April	246	208

Source of data for this article: www.cea.nic.in and www.bhakra.nic.in

What is clear from above table is that Power Generation at Bhakra was higher in 2004 compared to 2003 in all the first four months of Jan-April 2004 and simultaneously level of water in Bhakra was depleting, even below the 2003 level when at the beginning of 2004 the level of water in Bhakra was higher than what was found in 2003.

This trend is also reflected if we see the average outflows figures from Bhakra Dam for Jan-April 2004 and 2003 as seen in the table below.

Outflows from Bhakra Dam

Outflows, cusecs	2004	2003
January	17560	16474
February	16860	13331
March	19415	14876
April	14112	11914

We can clearly see that outflows from Bhakra dam has been higher in each of the four months of January to April in 2004 compared to the figures in 2003.

Pong Let us see what was happening at another big dam of the Bhakra Beas system, the Pong Dam. The lowest level of Pong dam was reached on July 3, 2004, at 1275.12 ft, the lowest level it reached for the last sixteen years. This is despite the fact that in the beginning of 2004, the Pong dam level was at 1341.13 ft, much higher compared to the level of 1316.62 on January 2, '03.

Why did this happen? Let us see at the generation figures for Pong Dam during January to April 2004 and compare with the figures for 2003.

POWER GENERATION AT PONG DAM

Power Generation, MU	2004	2003
January	120	39
February	78	32
March	146	67
April	73	47

We can see that generation during January to April 2004 has been more than double the generation during corresponding period in 2003. Let us now see the outflows from Pong Dam during the same period:

OUTFLOWS FROM PONG DAM

Outflows, Cusecs	2004	2003
January	9123	3018
February	6404	2945
March	12121	5341
April	6302	3952

Predictably, the outflows from Pong reservoir during January to April 2004 were much higher, mostly double the outflows in corresponding period during 2003. The result of these huge outflows is that the lowest level of water at Pong reservoir in 2004 was at 1275.12 ft, reached on July 3, 2004, which is the lowest for sixteen years. Consequently, the level of water at Pong on September 13, 2004 was 1342.37 ft, over 20 ft lower than the level on the same date last year.

Another obvious factor that decides the level of water in these reservoirs is inflows during these months. Here the inflows during January and February 2004 into both Bhakra and Pong reservoir were higher than the inflows during the previous year. It is true that inflows during March 2004 and April 2004 were lower than the inflows for corresponding months last year. But if that was the case, why did the outflows from these reservoirs continue to remain so high during those months. In fact SO HIGH that today there is a perception of impending crisis? The impact of those decisions is being felt now.

The Bhakra Water level is at its lowest for many years. This is inspite of the fact that releases from Bhakra during June, July and August 2004 were at the lowest level for a decade. It is true that rainfall in Bhakra-Pong catchment has been below normal this season. But had the water level in Bhakra and Pong not been allowed to go down so much during the first four months of this year, the water level today could have been much higher than what they are today.

BBMB (since Bhakra-Beas dams are managed by BBMB) and Union Govt (since BBMB is operating under the Union Ministry of Power) are clearly responsible for this. Why did they do this? Why were the outflows from these reservoirs so high during the early months of this year? And how did those releases continue to the point that we now face and impending crisis? The answer may lie in what happened between April 2004 and now - the elections!

The India Shining and Bharat Uday campaigns earlier in the year were specifically designed to provide a false sense of widely-shared prosperity, and hundreds of crores of taxpayer funds were spent on an overtly political campaign. In that scenario, state-controlled assets are an even more tempting asset; the BBMB and the Power Ministry were perhaps only too willing to provide a boost in power and water in the run-up to the elections, even if doing so put those resources at risk later. Transparency and accountability are generally weak at the agencies responsible for projects such as these. They are supposed to operate in the public interest and not in response to political considerations, but the typical state of operations - where things happen without scientific explanation or consideration - makes this virtually impossible.

Given our over-dependence on such large projects, to the exclusion and almost destruction of all other options, it is enormously vital that BBMB and other water management bodies function well. Their secrecy, or supplication to political objectives, might temporarily win them points with their political masters, but such actions would be plainly not in the nation's interest, not to forget unlawful as well.

Himanshu Thakkar (A slightly different version of this has been published at <http://www.indiatogether.org/2004/oct/env-flowpol.htm>)

The Changing nature of Bihar floods

Q: What in your opinion causes floods to recur in Bihar every year?

The floods are natural phenomena and inevitable part of the natural cycle. It should be remembered that flooded rivers do not carry only water, but also large amount of silt, particularly in the case of Himalayan Rivers. It is part of the geological flood plains building process that the floods and silt spread in the plains. The floods should be a boon for the flood plains, as the fertile silt would spread with the floods along the plains, making them agriculturally productive.

However, the nature of floods has been changing and annual average damages due to floods are increasing. The poorest are the hardest hit by the floods.

Q: Many Indian rivers are known to get flooded during monsoon. But in Bihar flooding always causes a huge amount of devastation and misery.

I am not sure if it is right to say "in Bihar flooding always causes a huge amount of devastation and misery". That was not always the case. Due to various human interventions, the nature of floods has been changing over the years and it seems now that annual average damages due to floods are increasing.

The nature of floods has been changing due to the embankments. The beds of the embanked rivers have been rising over the years due to deposition of silt. Thus their carrying capacity has been reducing. When the embankments ultimately give way, as they must due to rising riverbeds, due to improper designs and construction standards and due to inappropriateness of the interventions, they create more damages as the communities staying outside have been made to believe that they have been flood proofed and they become complacent. They also are ill prepared, as their earlier coping mechanisms are no longer available. Moreover, the suddenness and unexpectedness of the floods create more damages. When embankments break, they spread huge amounts of sand collected over the riverbed over the years onto surrounding fields. This is mostly sand and not the fertile silt that used to come with floods earlier, rendering the sand cast fields uncultivable.

The floods that come this way are also slow in receding as the river channels that are supposed to take away the floodwaters have higher bed levels and lower capacity. Moreover they are depending on the downstream river to drain before they can drain. The longer the floods remain, more damaging the floods become, it is well known.

Secondly, the deforestation & destruction of local water systems in the catchments have increased the frequency and intensity of floods in the plains. The

rainfall thus quickly ends up in the rivers and also brings greater amounts of silt due to greater erosion.

Thirdly, the inappropriate construction of roads, railway lines, canals and habitations in the flood plains have increased the drainage congestion. It is nobody's case that such interventions should not be done. However, while building these structures it is important to include appropriate drainage systems, which is usually not done in an attempt to cut costs. The increased congestion leads to greater chances and duration of floods and thus greater damages.

Q: Over the past several years, governments have taken many protective measures against floods, such as constructing embankments, barrages etc. But these clearly do not work too well. Why?

Embankments failed due to many reasons. Firstly, because Himalayan rivers carry a lot of silt along with water. Earlier when embankments were not built, that silt would be spread over large area, along with the floods. The water column height in such flooded areas was low because the floods were spreading over large areas. With the building of embankments the silt was trapped in the riverbeds and with the deposition of silt in the riverbed levels went up, reducing the carrying capacity of the entrapped river.

Secondly at many places the embankments failed as they were not appropriately designed or constructed keeping in view the probable flow rates of the water and silt in the rivers.

Thirdly, with the building of the embankments, the land of lakhs of people between the embankments was taken away. Indian state is known to heap injustices over such victims of 'developments'. This process has lead to impoverishment of lakhs of people in Bihar, as elsewhere. Over the years, with the reduction in capacity of the embanked river and destruction of first generation embankments, new embankments have been built farther away from the river to increase the capacity of the embanked river.

However, this has meant taking away of more lands from people without proper resettlement and rehabilitation. Such people have been known to stay on the embankments or near the embankments with having interests in seeing that their land that now is between the embankments open up as soon as possible. Many times they are forced to break the embankments at vulnerable places so that the embankments do not break where they are staying.

Fourthly, it may be recalled that many tributaries meet the river along its embanked portions. Now if the river is kept unembanked at such places, then the water of the embanked river would escape along such tributaries.

And if the river is embanked at such points of confluence with tributaries than the tributaries cannot meet the river and would flood the area around such tributaries. Over the years, some of the tributaries are also embanked, but then there are so many tributaries and sub tributaries. It is impossible to embank every one of them, creating fresh hazards. Moreover it must be remembered that even where tributaries are embanked, the points where the tributaries meet the rivers would remain vulnerable.

Q: Political parties have raised the demand of a high dam in Nepal to do away with floods. Do you think this can work?

I do not think any large dams can flood proof Bihar or any river basin of Bihar. Firstly it must be remembered that Himalayan rivers bring with them large amounts of silt and this silt would also be stored behind such dams, rapidly reducing their capacities.

Secondly, none of such dams are likely to be built only for flood protection. More compelling reasons for building such dams is generation of hydropower. Now it should be noted that maximisation of hydropower production requires highest possible water level in dam at any point of time. However, for flood protection it is necessary that dams are kept as empty as possible in monsoon so that when floods come, the dam has the capacity to store the floodwaters and not transfer floods to downstream areas. So there is clear conflict between these two roles of the dams. Now Hydropower production leads to revenue generation, unlike flood protection. Dam engineers invariably chose to keep the water level high in the dam so that flood protection takes a back seat, as has been the experience over the years. The Dam Engineers have got away with such priorities as the information about the operation of the dams is state secret and people have no access to it to hold the engineers accountable for the floods in the downstream areas.

Similarly, when the downstream areas are flooded or likely to be flooded, flood protection objective demands that water is not released in downstream areas at such times. However, the dam operating engineers, in their quest to generate more hydropower, ignore such concerns and add to the floods in the downstream areas. Here again lack of transparency means that the dam engineers can never be nailed for such acts.

Fourthly, the nature of floods in the downstream regions changes with dams. The floods in such portions of rivers are more destructive due to release of sudden and large quantities of water in the downstream areas. This has been experienced in several dams in India including Bhakra, Hirakud, Damodar dams and also the Narmada Valley dams. The engineers operating such dams do not warn the downstream areas about the

quantity and timing of release of waters in the downstream areas.

Moreover, in Himalayan region, a flood proofing dam will need to have such huge storage capacity and such huge social, environmental and financial costs that they won't make economic sense. Moreover there would be very significant safety concerns about such dams, particularly in geologically fragile and tectonically active Himalayan region.

Q: Many speak of the river-linking project as the ultimate solution. Do you feel this project, that envisages transporting water from flooded rivers to drier areas, can work as a solution?

Riverlinking proposals are one of the most mindless proposals. Particularly when propagated as solutions to flood problems. Incidentally, it may be remembered that the proposals include one of transferring water from Brahmaputra basin to Ganga basin during monsoons. Why would Ganga basin, when itself flooded in monsoon, accept water from another basin? The riverlinking proposals have many fundamental pitfalls and are impractical. Believe it or not, but after 23 years of work and after spending hundreds of crores of rupees, the National Water Development Agency has not produced a single study that it is confident of putting in public domain.

Q: There are also some who feel coexisting with floods is the only way out. This group of people has advocated for removing embankments and other obstructions. What is your view on this?

I agree that acknowledging the inevitability of the floods and trying to adjust the life around it is the least problematic option. That does not mean status quo. It would involve a lot of things including putting in place flood warning systems, flood coping mechanisms, flood preparedness measures. It would also involve removing the embankments that are creating more harm than good. It would mean removing drainage congestions, making the existing infrastructure including roads, railway lines, canals, habitations more in line with the floods and drainage needs and putting in place stringent norms and confidence inspiring mechanisms in place to make future interventions less problem causing. It would involve being more careful about what is going on in the catchment, arresting and reversing deforestation, maintenance of local water system in the entire river basin and creating more of them, adopting appropriate cropping patterns, and so on.

Epilogue: DK Mishra, well known expert on Bihar flood issues says, "Only addition that I could suggest is that not an inch has been added to Bihar embankments in the past 14 years, ever since the present regime has taken over. They have lost 11 kms of length to erosion."
(From an Interview of SANDRP Coordinator by ActionAid)

The World Bank's incredibility Gap

Summary of Project Performance Assessment Report of the
WB's UP Sodic Lands Reclamation Project June 2004

The Sodic Lands Reclamation Project (1993-2001) was the first World Bank support for reclamation of sodic soils in India. The project was to be implemented over a 7-year period in 10 districts of UP with three objectives:

- (i) Develop models for environmental protection & improved agricultural production through large-scale reclamation of such lands;
- (ii) Strengthen local institutions to manage such schemes;
- (iii) Contribute to poverty alleviation.

The Operations Evaluation Dept of the World Bank has done an Assessment of the project. The project was highly praised by the Bank Management on several public platforms as an example of excellent Bank project. The Project Outcome was described as satisfactory by the Implementation Completion report, but the Project Performance Assessment Report grades it lower at moderately satisfactory. Shockingly, the ICR rated the project sustainability as likely, but PPAR's conclusion is unambiguous: Unlikely.

PPAR says, "Intensive irrigation and the package of agricultural inputs from the Green Revolution brought about a major increase in foodgrains production in the state between 1960-61 and 1995-96. Unfortunately, the expansion of the canal network was not accompanied by adequate soil and water management practices. Consequently, large tracts of agricultural land in the command areas of major canals became increasingly waterlogged, saline, and alkaline." Actual total project costs at US\$103.7 million were 29 % higher than appraisal estimates. This was because the area of land reclaimed was 52 % higher and the number of beneficiaries was nearly double the appraisal estimates.

WEAKNESSES The PPAR says that the project had several significant weaknesses.

- The project gave inadequate attention to several critical systemic issues, among others economic incentives for use and management of water, resources for operation and maintenance of drainage, that are essential to developing a long-term program for improving agricultural productivity in areas with high

concentration of sodic lands and deteriorating environment conditions.

- Since the improvement in the quality of soil has been marginal in several areas, and drainage and institutional issues related to soil fertility management haven't received enough attention, there is considerable risk that the reclaimed land will revert to its former state.
- Monitoring of environmental impact has not been adequate. The latest monitoring technology is available to the Remote Sensing Application Center, but the data being generated is not being used effectively.
- The implementation of the participatory process was given inadequate attention. Hence instead of putting the communities in a position of decision-making and control, the process appears to have created a sense of dependency.
- The project efficiency was rated modest after adjusting downwards the unduly optimistic assumptions about future crop yields and maintenance of drainage, which hadn't properly accounted for the risk that the reclaimed land could revert to its former state.

The assessment rates sustainability as unlikely for several reasons. The most serious threat to sustainability is continuing inadequate attention to drainage issues. Moreover, institutional constraints related to soil fertility management have not been addressed. These factors leave the reclaimed land at risk of resodification. Further, lack of coordination between govt depts undermines project achievements.

The performance of the project is marred by two factors. The first is the inattention to critical systemic issues in the project design. The other was policy issue like the frequent transfer of concerned officers.

Just two years ago the senior-most WB officials in charge of water resources were praising this project in most eloquent poetry. We have just seen that assessments by one of the Bank's own dept has shown the reality of their claims. This once again shows the increasing credibility gap between what the Bank officials claim and the reality.

SANDRP

Thirsty Warangal collects every drop of rain

People collected rainwater in tumblers as the rain gods answered the prayers of desperately thirsty Warangal on Sept 4 when it rained in all the 50 divisions of Warangal town whose citizens had been making do with a few pitchers of water once every 10 days. As soon as the clouds began dripping, townspeople put vessels of every description under their awnings to collect the precious liquid. The scene was the same in all localities—slum and posh—in the three sister towns of Warangal, Hanamkonda, and Kazipet. The rain brought a smile to every face and much relief to the town's municipal corp which had already tapped every well and puddle in town to supply water to the citizens. Municipal worker Venkataiah said he had never seen a more welcome rain. In the rural areas beyond town, cotton and chilly farmers heaved a sigh of relief: their crops would survive another fortnight. (The Times of India 050904)

Weakening the Environment Clearance Process

The recent simplification of environmental clearance process announced by the Ministry of Environment and Forests has further diluted the country's environmental regulation, one that is already considered toothless. The investment limit that necessities clearance has been raised from Rs 500 M to Rs 1 B for new projects. More projects will now stay out of the radar screen. Environmental Impact Assessment (EIA) is no longer required for pipeline projects. The simplification is aimed at facilitating industries and it will end up pushing people's participation to fringes of the process.

The Central govt originally posted the EIA notification as a draft notification in Jan 1993 for public comments in accordance with the Environment (Protection) Rules. However, when the final notification was issued a year later, it differed significantly from the draft. The original draft brought within its scope a wide variety of projects through the first two schedules; but the final notification made Central environmental clearance applicable to just 29 categories of projects listed in Schedule I. The authority of the States to grant clearance was completely done away with, with the result that many projects originally required to get clearance from the state were removed from the purview of the notification.

In May 1994 amendment inserted phrases such as if deemed necessary and subject to public interest in several places where the notification called for consultation with groups such as the Committee of Experts or affected populations/ environmental groups. It made access to documents like the summary of reports, Environmental Management Plan, the conditions subject to which clearance is given and compliance reports subject to public interest. Access to such documents was unconditional prior to this amendment, subverting transparency in the process.

The April 1997 amendment making Public Hearings mandatory did bring back to the public access to the Executive Summary of the project report. The June '02 amendment provided the concerned access to the EIA.

At present there is no provision within the notification by which the public can have access to the conditions on which clearance has been granted. One section of the EIA notification also deals with the conditions subject to which projects are exempted. The June '02 amendment raised the threshold limit for investment values to Rs 1 B for new projects and Rs 500 M for all expansions/modernisations. Also exempted in June '02 were modernisation projects in irrigation sector if additional command area is less than 10 000 ha or project cost is less than Rs 1 B.

Amendments have been made to this notification many times without issuing notice to the public asking for their comments stating that it was in public interest not to do

so. One fails to see how these amendments -- involving misplaced criteria for and limits of clearance exemption -- serve the public interest.

The EIA process is a tool of decision-making that provides a space for people's participation. People have the right to be involved in decisions that affect them and their environment. Public participation seeks to ensure that people have the opportunity to be notified, to express their opinions and to influence the decisions regarding projects, programmes, policies and regulation that affect them. Generally, the local communities are the ones that are adversely affected. The local people are more sensitive to the changes in environment than anyone else. The public participation can improve the quality of information for the EIA studies.

From the outset, the EIA process has lacked meaningful people's participation. At the stage when the affected communities are brought in, the EIA report has been prepared and NOC applied for to the Pollution Control Board. The decision regarding the project has already been made. The communities are not consulted during the assessment of alternatives, nor do the EIA agencies consult them in preparing the EIA. Even the monitoring of compliance by the central/ state agencies are found to be very negligent. Once the project is approved there are no proper checks and balances.

In Aug 01, a major weakening of the mandatory Public Hearing clause for environmental clearance happened. This amendment removed certain categories of projects from the purview of public hearings altogether including units in EPZ, SEZ & modernisation of irrigation projects.

The public hearing process suffers from many drawbacks. Most projects are located in the natural resource rich tribal/ rural areas. Due to the inherent social conditions in such areas significant objections to adverse impacts are often not strongly put forward or ignored. There is no legal compulsion on the developers provide evidence that the issues raised at a public hearing have been adequately responded.

Globally, moves are on to strengthen public participation in decision-making and the right to information as pillars of developmental process. The Uhus convention, adopted by EU in 1998, legislated principles like access to environmental information, public participation in environmental decision-making and access to justice. [The report of the World Commission on Dams is another example where detailed recommendations have been made on these issues.] This contrasts with the Indian govt's steps to curtail the public participation and withhold information.

Sunita Dubey (From an article that originally appeared at www.indiatogether.org in 0804, published with permission.)

Restoring sanity in water use

HIMANSHU THAKKAR

THERE are many indicators showing how crucial water is becoming with each passing day – daily headlines about impending drought, floods, impact of monsoon failure on the economy and rising frequency and intensity of inter-state water disputes. The new prime minister's first three visits to any state in India have all been around water related issues. The first visit to Andhra Pradesh was related to agriculture and farmer suicides and the visits to Assam and Bihar were to assess the damage due to floods. It is arguable as to how right the prophets of water wars are, but there is little doubt that in the future water related issues will acquire much greater salience. Govts could be made or fall on these issues. Even as the UPA (United Progressive Alliance) govt at the Centre is going about setting its priorities and programmes, let us see what it can realistically do to avoid the worst-case scenarios.

The outgoing govt had announced a new National Water Policy in 2002, but the way the document was formulated left a lot to be desired. It seems the previous govt could not understand the importance of that document. The non-seriousness was also evident when at the release function, Atal Behri Vajpayee, in his typical poetic fashion, quoting *Meghdootam*, talked about the virtues of rainwater harvesting when the policy document did not even acknowledge rainwater as a source. He then went on to declare a new scheme for rainwater harvesting, for which he said the govt would allocate several hundred crores, but that scheme is yet to be implemented.

There is a need to set up a participatory process for formulating a new national water policy that must include: transparency, accountability and participation in planning, decision-making and implementation, compute and prescribe minimum water flows in rivers, declare biodiversity rich stretches of rivers as sanctuaries, define conditions for decommissioning dams which are doing more harm than good, clearly define the process of environment impact assessments and public hearings.

Rivers are and can be a very important resource for society and the state. However, the manner in which rivers are treated by everyone – particularly as the states claim water resources development, management and water resources related information as a state monopoly – has led to rivers rapidly becoming endangered species. We need a policy that will allow rivers to exist in a healthy state, and define the extent to which society should tinker with them, what actions will or will not be allowed, which stretches of rivers are to be preserved for the well-being of society and how these objectives will be achieved. The policy must specify how river pollution (as also pollution

of all water bodies) should be controlled and, most crucial, what should be the role of communities.

Unfortunately, even after the passage of the Freedom of Information Bill, there is little by way of transparency in governance. The rules to implement the act are yet to be framed, and secrecy remains a central *mantra* in our culture of governance. To make freedom of information effective, there needs to be a credible grievance redressal and regulatory system in place at different levels so that those who do not follow the norms are punished and citizens know where to seek redressal. In the water resources sector, transparency is even more crucial as almost all information, including siltation rates and river flow data, water release data, and so on are treated as state secrets.

Fifty-seven years after independence and 13 years after the passage of the 73rd and 74th constitutional amendments devolving powers to local bodies on local issues and resources, panchayats and municipalities have little effective say. If the next Union govt wants to improve the lot of Bharat, it must ensure effective local control over local resources and delegate powers to take decisions on local issues.

The previous regime had made large dams and the river linking programme central to the govt's agenda of development. They paid the price as they seemed to have no idea about how to provide drinking water or how to alleviate and reduce impacts of drought and floods. If the new dispensation does not want to meet the same fate it should give top priority to local systems like rainwater harvesting, groundwater recharge, local water storage systems and watershed management, allow minimum flows in rivers, effectively control pollution and manage existing infrastructure to get optimum outputs and also implement demand side management measures.

Two-thirds of our people live in rural areas, most dependent on agriculture and related professions. Over 80% of the poor stay in rural areas. Every farmer would benefit from better management of water resources. Agriculture is by far the largest consumer of water and rain is the primary source of water for all farmers. When the monsoon fails, the importance of rains for the farmer, the economy and society gets highlighted. However, when formulating water resource policies, plans and strategy, this crucial fact is forgotten.

Rainwater will have to be brought to the centre of our water policies and programmes. Since the use of rainwater in agriculture differs in different agro-climatic situations, protection of existing local systems of water harvesting and creation of more such systems will have to be the focus of the water sector agenda, policies,

programmes and financial allocation. The local communities must have the right of taking decisions about development, management and use of such systems. Local water systems would also help generate more employment for the rural population, a crying need today.

Our water resources development is marked by an over-emphasis on mega projects. There are, of course, many fallouts of this approach. One that is less discussed is that most inter-state water disputes can be traced to big projects and long distance water transfers. By making planning and decision-making processes bottom up, the number and magnitudes of the inter-state water disputes can be minimised.

Another significant step would be to ensure that the cropping patterns adopted are appropriate to the hydro-climatic conditions in the region. This should be an important feature of agricultural planning. Also, the issue of a virtual export of water from the country, and from specific areas, should be made integral to the policy and programmes. India, according to one estimate, exported 161 billion cubic mts of water each year in the late 1990s. Can we afford to do so and simultaneously continue to cry for more water?

The finance minister, while presenting the recent budget did recognise the importance of local water systems when he said, 'Through the ages, Indian agriculture has been sustained by natural and man-made water bodies such as lakes, tanks, ponds and similar structures. It has been estimated that there are more than a million such structures and about 500,000 are used for irrigation. Many of them have fallen into disuse. Many of them have accumulated silt. Many require urgent repairs. I therefore propose to launch a massive scheme to repair, renovate and restore all the water bodies that are directly linked to agriculture.'

That sounds reasonable. He also announced the allocation of a billion rupees during the current financial year to take up this task on a pilot scale in a district each in the five zones of the country. However, finance is not the only constraint in the restoration of water bodies. The real constraint has been a total absence of role for the local communities in the planning, decision-making, development and management of water-related systems and issues. Second, though such pronouncements have often been made in the past, including by the former prime minister, nothing has happened on the ground.

Significantly, in the same budget, the finance minister announced an allocation of Rs 28 B for schemes under the Accelerated Irrigation Benefits Project, almost all of it for large projects. That hardly shows a clear priority in favour of decentralised systems.

The new govt at the centre has expressed skepticism on the proposals to Interlink Rivers, which is a good

sign. However, it should have unequivocally declared that the ILR scheme was being abandoned. In the absence of such a clear pronouncement, the forces behind this 'unscientific' proposal will continue to push for the project. The Supreme Court too continues to monitor the petition on the issue. In a sign of things to come, another PIL has been filed seeking from the Union govt an extension to the tenure of the ILR task force that expired on 30 June '04. The water resources bureaucracy will not allow the proposal to be quietly buried as they see huge opportunities in the ILR. In fact, Volume II of the Union budget has a provision of Rs 35 crore for the National Water Development Agency (a government of India society, it has been in existence for over 22 years with the sole aim of studying ILR, but after spending huge sums, has not produced a single report worthy of being placed in the public domain) to cover the agency's work, including the preparation of DPRs and expenditure on the task force. This waste of precious national resource has needs to be immediately stopped by closing down the NWDA.

The ILR proposals are justified on grounds of transferring water from a so-called 'surplus' basin to a so-called 'deficit' basin. First, there is no basis for such categorisation. A basin can be called deficit or surplus only after all the potential of schemes in the basin has been exhausted. But, there has been no attempt to assess the potential of local water systems of even a single basin or sub-basin in India, leave aside the question of realising its potential. Thus, there is no basis for declaring any basin as surplus or deficit. The basins that NWDA calls surplus contain areas that face drought and those that it has called deficit have faced floods in the monsoon.

There is a need to set up a task force to assess the potential of local water systems of some of the most water scarce basins like the Cauvery, Pennar or Krishna and prepare an action plan to realise the potential. Such a TF could also help reduce the inter-state problems in these basins. An important outcome of such an exercise would be to assess the cumulative storage capacity of such local systems across a basin or sub-basin. This is particularly critical, as an important argument used to push large projects is the need for storage (to store the water in monsoon and make the same available in non monsoon months), without of course ever assessing the storage potential through local systems and groundwater aquifers. The task force should also look into the total groundwater potential in these basins, including deep aquifers, groundwater aquifer size and groundwater recharge potential.

India has the largest irrigation infrastructure in the world, but it is in bad shape and the govt is unable to allocate adequate resources even for its upkeep and maintenance. That infrastructure is delivering sub-optimum benefits. According to the mid-term review of the 9th five year plan, 'With a 10% increase in the

present level of water use efficiency, it is estimated that an additional 14 M ha area can be brought under irrigation from existing irrigation capacities. This would require a very moderate investment.' It needs to be noted that even after a 10% increase, efficiency would remain far from optimal. At the rate irrigation capacities were enhanced in the ninth plan period, to add 14 m ha additional irrigation would take 21.5 years. And yet, little is being done to achieve that additional irrigation efficiency. The govt needs to ensure that the limited available resources are used for repair, maintenance and management of existing infrastructure to get optimum benefits. The World Bank, in its draft Country Assistance Strategy for 2005-8 has said, 'The highest returns of water resource management lie in rehabilitation and upgrading of existing infrastructure.'

Ever since the sixth five-year plan, every five-year plan talks of putting a stop to additional projects and focusing on completion of ongoing ones. The situation today is worse than in 1980 when the sixth plan started. This strategy of trying to finish the incomplete schemes is a self-defeating one when we cannot put a stop to new schemes and are unable to allocate resources even to maintain the existing infrastructure. There are at least 411 incomplete major and medium irrigation schemes that were started over 30 years ago. The AIBP was initiated in 1996-7 with a view to complete the 'last mile' projects. However, eight years and expenditure of tens of thousands of crores later, only 28 of the 411 schemes that we started with have been completed, that too only under the threat of stopping funds. Instead, hundreds of crores each year is being diverted from AIBP to projects like the Sardar Sarovar, which will not be completed for several decades according to the govt's own admission. This must come to a stop. Similar is the situation with respect to command area development projects.

We must undertake a credible review of incomplete projects with the aim of scrapping those projects where little physical infrastructure is in place. Where substantial physical infrastructure has been created, the review should examine if the projects can be redesigned to reduce investment requirements and achieve faster and optimal benefits. Such a review should also look at the option of reducing dam height, among others.

Even among existing projects, there is a need to assess the performance of select schemes to compute actual costs, benefits and impacts compared to the estimates made at the planning stage. The objective would be to learn lessons for future projects and to see what needs to be done to achieve optimal benefits. It may well turn out that some of the projects are doing more harm than good and it would be better to decommission them. The review exercise should look into the siltation of reservoirs and measures to arrest it as also assess the

extent and nature of water-logged and salinised areas and the measures required to solve the problem.

Groundwater is in many respects a unique resource, available to most of the areas and people. In fact, the drinking water needs of the rural population in India are satisfied by groundwater. Over half the irrigated areas and two thirds of production from irrigated areas comes from land irrigated by groundwater. And yet, that resource is going out of the hands of the people. The groundwater levels are falling almost everywhere. A very large portion of the remaining groundwater resource is getting polluted. We have little idea about the extent of groundwater pollution and its impact on the health of people who depend on groundwater for their daily needs assuming it to be pure. This is a silent tragedy waiting to become visible.

Under the circumstances what is required is to first make a basin-wise and district-wise assessment of groundwater potential, both state of use and quality. The Central Ground Water Board assessments are neither available to the local communities and decision-makers in good time, nor do they have any place in planning, decision-making or regulation. Second, the assessment should also include a survey of groundwater recharge potential and measures needed to achieve it. A main reason for the groundwater situation is the neglect and destruction of local water systems. Simultaneously we need to legislate that everyone with a groundwater extraction system should be responsible for recharge of groundwater to the extent of its use. Finally we need to ensure effective regulation of groundwater use. Communities should be placed at the centre of any regulatory mechanism.

As regard floods, the new government seems to have started on the wrong foot. While it is good to see the prime minister take prompt action in setting up a task force on flood related issues after a visit to Assam, his announcement that Lower Subansiri and Pagaladiya projects in the North East and Sapta Koshi project on the Bihar Nepal border will be expedited as these projects would help control floods shows an inability to go beyond bureaucratic briefs. The fact is that these projects will not help in flood control, but could lead to greater damage during floods. Instead the new government needs to:

- Review the efficacy of embankments and abandon those doing more harm than good;
- Review the dam operating instructions so that they do not lead to increasing food damage and make the operating instructions and information about operation of dams a public right;
- Ensure better catchment management of flood prone areas through creation and maintenance of local water systems, creating and managing hill areas with proper forest and vegetation cover, flood warning systems, flood preparedness systems and so on;

- Review drainage congestion in the basins and remove congestions that are easily done, while preparing a longer-term plan for those that cannot be immediately removed. Drainage congestion is due to a number of factors, including improperly designed canal systems, railway lines, roads, buildings and so on;
- Review the reports of the Flood Commission of 1980 and others to assess implementation of the recommendations.

Pollution is another important issue that has not received adequate attention. Pollution, in fact, takes away much more water from the available pool. While agriculture is also a source of pollution, industries and urban areas do the most damage. The Pollution Control Boards, in the absence of any transparency, accountability or local participation in their functioning and decisions, have turned into dens of corruption. Changes in the legal and institutional framework to ensure transparency and accountability, and for local communities to have right to access the sites and records of any pollution-generating organisation, are essential to prevent freshwater resources from being polluted.

Effective treatment of urban and industrial effluents can have far reaching impacts. It will stop pollution of freshwater resources, instil a sense of conservation in industry and urban centres, and create an asset in the form of recyclable water that was earlier a liability. The finance minister needs to focus on this rather than on expensive desalinisation projects.

A large number of big hydro projects are being proposed by the new government in the name of satisfying the power needs of the country. Hence, power issues are also related to the water sector agenda. A quick review of decision-making processes in the case of any big hydro project makes it clear that there was no attempt to show that the proposed project fits into the least cost (including social, environmental and economic costs) option for the justifiable (and prioritised) power needs of the state or basin where the new project is being proposed. This becomes all the more disturbing in view of the inefficient and sub-optimal use of the existing infrastructure, transmission and distribution losses, scope for conservation and demand side management and other generation options, including renewable options like small hydro, wind, solar, biomass and so on.

There have been many instances (e.g. in the case of Tarun Bharat Sangh) when communities have faced legal action from governments when they have tried to create local water systems for their own needs. There are many acts in the statute books that have been used to discourage communities from setting up local water systems. The state canal and drainage acts are an example. A commission is required to review the

existing laws and regulations to remove impediments in the way of community-driven processes and efforts.

The previous Union government had announced a National Relief and Rehabilitation policy, expectedly without adequate public consultation, in fact ignoring the experience of displacement and resettlement over the past 57 years. The policy also ignored the earlier draft acts and processes. It seems to have been a hurriedly put together policy to satisfy some conditionality of the multilateral agencies. Even the most ardent supporter of big dams would agree that there are no success stories in resettling displaced communities in a just way, even as the number of those displaced by large dam related projects alone has gone above 35 M.

What the new government can do is to set up a time bound process of formulating a National R&R law (as different from policy. Policy is not mandatory and cannot be used in a court of law by the affected) through a participatory process. Unfortunately, the new government has begun on the wrong foot by not taking any action even as tens of thousands faced submergence and displacement without legally mandatory resettlement due to the Indira Sagar Project on Narmada River in Madhya Pradesh and the Sardar Sarovar Project in Gujarat. In both projects the Centre has a substantial role to play: a central government organisation, NHPC, holds a 51% stake in Indira Sagar and in the case of SSP, the height of the dam cannot be increased without the consent of the Centre.

As a confidence building measure, the govt should set up a task force to assess the outstanding social and environmental issues of large dam projects already completed with a view to addressing these issues. It should also stop construction of all such projects till mandatory resettlement has been completed at least six months prior to submergence. It may be a good idea to make it mandatory that before taking up or sanctioning any new displacement generating activity in any river basin, the state will ensure that all the outstanding social and environmental issues of the earlier projects in that basin have been satisfactorily addressed.

The UN has set Millennium Development Goals, a number of them are related to water: halving the number of poor, number of people without access to water supply, number of people without access to safe sanitation by 2015. Unfortunately such goals have low credibility given the earlier performance of various agencies. If we are to achieve the MDGs in a real sense, then the agenda set out above will have to be a part of the Common Minimum Programme.

(A somewhat different version of this article was published in Seminar, Sept '04)

RIVER LINK NEWS

Progress on Feasibility reports Minister of State for Water Resources said in Rajyasabha that feasibility reports of eleven ILR projects out of 30 identified links have been completed. He said that surveys and investigations for feasibility reports of another 19 links have been undertaken and are scheduled to be completed by Dec '05. (UNI 090804)

Sharda-Yamuna link Problems

According to a study by Research Foundation for Science, Technology and Ecology, the proposed Sharda-Yamuna river link project, would trigger water wars between the states instead of uniting them. The RFSTE study said that it would divert waters from the irrigated areas of the Sharda canal, affecting a million acres of the fertile Doab and Ganga basin. The Sharda-Yamuna canal would cause massive deforestation in the most important forest zones of the Himalayan foothills, including the Corbett National Park and Chila Sanctuary. These diversions of the river courses across Bihar, Uttar Pradesh, Haryana, Rajasthan, Gujarat and Uttaranchal would create conflicts since the people deprived of irrigation from the Sharda and the Ganga waters would resist the Sharda-Yamuna links. For this link, two dams, Purnagiri dam and Pancheshwar dam, in Uttaranchal would be required. Big dams in Gandak and Ghaghra would also be required. For the construction of 384-km long canal, at least 23 625 people from Purnagiri dam area and over 45 000 people from Pancheshwar dam area would be displaced. This link will cross 95 railway tracks and roads, 12 rivers and several local streams in its proposed route. (BUSINESS LINE, HINDUSTAN 130804)

Govt 'not to scrap' ILR The Union Govt informed the Supreme Court on Aug 30 that the Govt is not in principle going back on the ILR. Reports of various committees are being considered. Once the consideration of the reports is complete, the matter will be placed before the Cabinet. Meanwhile, Joint Commissioner (Basin Management) in the Ministry of Water resources, in an affidavit filed in the Court, said that the Govt was envisaging a "comprehensive assessment" of the feasibility of the project and any legislation by the Centre on the issue would depend on the outcome of such an assessment. (THE TRIBUNE 310804)

Parliamentary Committee for selective ILR The Parliamentary Standing Committee on Water Resources has recommended in its first report that the Govt make earnest efforts to get going the inter-linking of northern and southern rivers under the Inter-Linking of Rivers programme in a definite time schedule which, "in their considered view," would save the nation from the ravages of chronic droughts and floods. The panel has recommended that allocation for the water

resources ministry be stepped up in consonance with the commitment of the Govt to give priority to water management. It asked the Ministry to quickly complete the study of the National Council of Applied Economic research for assessing the "Economic Impact of ILR Programs" assigned to it by the ILR Task Force. (THE HINDU, THE HINDUSTAN TIMES 240804)

Mini ILR plans Some villagers in Kodinar block in Gujarat have planned a scheme, prepared by experts from the Ambuja Cement Foundation, to irrigate 10 000 Ha and prevent ingress of seawater in to agricultural land. The scheme involves linking of three seasonal streams through channels running parallel to the coast and saving rainwater in reservoirs, which later can be used for irrigation. According to the proposals, Singhora, Somvat and Goma Rivers, which originates in the Gir forest and flow in to the Arabian Sea, would be inter-linked. According to the Senior Project Manager of ACF, the 13.5 km 'spreading channel', which would link the three seasonal rivers, would create a surface storage capacity of nearly 800 M cubic feet in addition to recharging groundwater and reversing the increasing trend of salt water ingress. The project is claimed to benefit 16 villages and cover nearly 20% of the land in Kodinar block. (BUSINESS LINE 180804)

Kerala resists TN's 'clandestine attempts'

Kerala Water Resources Minister declared the state did not have a drop of excess water to "donate" to other states and Kerala wanted water to remain a state subject. Describing the assumption that Kerala was a water surplus state as wrong, he said Tamil Nadu's "clandestine attempts to divert water from Kerala rivers to Tamil Nadu would be opposed." The "misinterpretation" done by Tamil Nadu of the water pacts entered with Kerala would be resisted effectively, he said. Kerala was monitoring the ongoing construction work relating to the Pampa-Achankovil-Vaippar project and was planning to post permanent observers at Kerala's border with Tamil Nadu, he added. Steps would be taken on a war footing to build check dams across all the rivers of Kerala and the state would also take strong measures in a time-bound manner to protect and preserve its ground water resources. (Keralanext.com 180904)

Kalisindh dam site changed The site for the proposed dam on Kalisindh River in Shajapur dist in Madhya Pradesh has been changed. Earlier it was proposed near Ranjitpur village now it would be constructed near Samaskhedi village in Dewas dist and the name of the dam would be Kalisindh Project. One of the main reasons for change of place was the submergence of 64 villages and according to new survey it is claimed that 23 villages would be affected. The estimated cost of the project proposed by the Water Resources Dept is Rs 3 B. (DANIK BHASKAR 150804)

WHY WATERS OF THE BRAHMAPUTRA-GANGA-MEGHNA (BGM) RIVER BASIN CAN NEVER BE TRANSFERRED TO SOUTH INDIA?

R. Jagadishwara Rao, Former Professor of Geology, S.V. University, Tirupati, AP

While resolving the conflict between Karnataka and Tamil Nadu in sharing Cauvery waters during the 2002, the Supreme Court in a bid to stop such recurrences suggested the Indian govt to interlink India's rivers to transfer surplus waters of the Brahmaputra-Ganga-Meghna (BGM) river basin to water-deficient basins in the south within a time frame. The govt in turn constituted a task force to work out the modalities. This decision has led to the apprehension that such river linking would further aggravate the water problems faced by the people living within the basin belonging to India, China, Nepal, Bhutan and Bangladesh besides possible prevention of the annual flood and associated sedimentation necessary to protect the very ecosystem of the deltaic plains of Bengal and Sundarbans (Khalequzzaman, 2003).

Inadequacy of water in the Ganga River To maintain a minimum flow of 1100 m³/s in the Hoogly River and thereby make Kolkata an all-weather port, India has built Farakka barrage across the Ganga river in 1974. While failing to fulfil the objective, this barrage had led to water stress to some people of Bangladesh living on subsistence agriculture and fishing during lean season. This necessitated a Indo-Bangla treaty in 1996 to restore the lean-season flow of the Padma River.

Although the accord helped Bangladesh to get more Ganga water, the very purpose of constructing the barrage to make Kolkata an all-weather port was defeated. There was no consensus on the proposal of India to solve the problem through the Brahmaputra-Farakka link passing through Bangladesh and that of Bangladesh to augment water supplies at the Farakka barrage through construction of upstream reservoirs. Indian govt hopes to solve the problem by importing Brahmaputra water into Ganga through a canal along the "goose neck" of India passing through Assam and W Bengal. When a relatively minor issue of maintaining enough river flow to keep Kolkata an all-weather port couldn't be achieved so far through flows within the Ganga river, how can anybody believe that Ganga water could ever be transferred to S India?

Inadequacy of water in the Brahmaputra River The Brahmaputra river basin has the highest mean annual surface water flow of 585.6 km³/year (MOWR, 1999). By taking into account the mean annual surface runoff, the annual per capita water of the basin is the highest at over 16,000 m³ (Thakkar, '03). Despite such high surface runoff, the mean utilisable surface runoff of the basin is 24 km³/year (MOWR, 1999), accounting for hardly 4% of the annual surface water flow. On this basis, the basin ranks seventh next to Ganga, Godavari, Krishna, Mahanadi, Indus and Narmada. This low utilisable surface runoff of the basin is due to its

steep slope and high temporal variability of rainfall and surface runoff, which makes the basin to experience unusually high intensity of floods and droughts. By taking into account the mean utilisable surface runoff rather than the mean annual surface water flow, the annual per capita water of the basin is hardly 680 m³. As per this, the basin ranks below Narmada, Mahanadi, Brahmani, Godavari, Tapi, Krishna, west flowing minor rivers of S India, Pennar and Ganga basins (Rao, '04).

The live storage of reservoirs created in the basin is 1.1 km³ (Thakkar, 2003), accounting for less than 0.2% of the annual surface water flow and less than 5% of the utilisable surface runoff. On this basis, the basin ranks twelfth next to Ganga, Krishna, Godavari, Indus, Mahanadi, Tapi, Cauvery, Narmada, Brahmani, Mahi and Sabarmati basins. Absence of cultivable land close to the reservoirs has led to letting reservoir water downstream more for power generation than irrigation.

Net Area Irrigated in the Brahmaputra basin From the authentic data available for 1993-4 on the India-side of the basin (except Nagaland for which details are not available), 40% is kept fallow, 51% rain-dependent and 9% irrigated mostly for one crop a year. Of the net area irrigated, 68% is irrigated by minor irrigation projects, 18% by canals of major irrigation projects and 14% by groundwater. Contrary to this, over 95% of the net area of over 4 M ha of Punjab is irrigated, of which groundwater accounts for nearly two-thirds and canals one-third (MOWR, 2001). From the inability to provide appreciable irrigation within the basin even 57 years after independence, it is clear that the rivers in the basin cannot be tamed for that purpose. When this being the case, how can anybody believe that the Brahmaputra water could ever be transferred to the Ganga River?

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PROCEEDINGS OF THE NATIONAL SEMINAR ON INTERLINKING OF RIVERS IN INDIA: MYTHS AND REALITY

The seminar was held under the auspices of Environmental Engineering Division of the Institution of Engineers (India), W Bengal Centre, on Sept 8-9, 04. It was strongly felt that there should be a national debate over the issue among all sections of society. The distinguished academicians, engineers, geologists, geographers, activists and Govt officials participated and over 200 delegates were present in the auditorium.

The seminar was inaugurated by Sri Ganesh Mondal, the W Bengal Minister for Irrigation and Waterways Directorate, and keynote address was delivered by Prof J Bandyopadhyay of Indian Institute of Management. Both of them were very critical about the project. The Hon'ble Minister declined to participate in the concept that inter-basin transfer of water can solve the problem of flood and drought rather, he opined it can lead to water-war among the States. He also denied that 'there is excess water in the Ganga basin'.

Prof Bandyopadhyay concluded that there is hardly any rationale to incur such monumental expenditure while there are other viable alternatives to combat the challenges. He emphasised that there is hardly any justification for the mega project to ensure future food security or the supply of drinking water to the drought prone areas. There are farmer-centred, eco-friendly and cost effective options to combat the twin challenges. The replacement of drought resistant crops by water-intensive crops in low rainfall areas may be suicidal. Biswatosh Sarkar, WB Secretary for Irrigation and Waterways Dept narrated briefly about the four links affecting the State and observed that substantial chunk of habitation and tea gardens will be disturbed putting serious strain on the State's economy and environment.

Medha Patkar of the National Alliance of People's Movement addressed a special session of the Seminar. While questioning the dktat from the Chief Justice as well as the Hon'ble President of India, she explained that without completion of all impact assessment and with no clearance from the sanctioning authorities, ILR can only be a concept. The unprecedentedly expensive project will bring in foreign investment leading to corporatisation and privatisation of water. The common villagers do not get benefit from large projects in spite of their sacrifice, since distribution of benefits is largely unequal in large dams and such projects. The decentralised use of water with other resources would have gone a long way if the community were granted the first right to those resources. She asserted that if there were no shift in the paradigm pursued today, the only alternative would be struggle and reconstruction. As regards hydropower she demanded that first the reduction of T and D losses should be achieved.

The technical sessions were addressed by eminent scholars like Samar Bagchi, Dr Kalyan Bandyopadhyay, Prof Manas Bandyopadhyay, Dr Kalyan Rudra, Subrata Sinha and Rajkapur Sharma. The speakers were unanimous that altering the delicate hydrological balance set would surely impair the ecological security and consequences may be disastrous. The Brahmaputra-Ganga-Subarnarekha link would intercept all south-flowing and east-flowing rivers of W Bengal and there by invite the problem of drainage congestion. This may also impair the existing balance between sweet and saline water regime in the delta. The project was conceived on a myth that Ganga-Brahmaputra basin carries excess water that flows into the sea and thus 'wasted'. This contravenes the basic ecological principles.

The project does not take into account the ecological security and the delicate hydrological balance of the Ganga-Brahmaputra delta. Nor any heed was paid to the demand of huge population living in largest delta of the World. Even the question of Indo-Bangladesh relationship over the sharing of water of Ganga, Brahmaputra and Teesta was ignored. Since 54 rivers are trans-boundary in nature and flows into Bangladesh from W Bengal, the Govt of India should cohere with our neighboring State on the issue of water management. We may here refer to the Principle 2 of Rio declaration adopted in 1992. "States have, in accordance with the Charter of the UN and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction."

The diversion of sweet water from Ganga-Brahmaputra basin may allow the saline water wedge to ingress further inland causing a serious ecological imbalance in the delta. Since there would be reduction of flow in one river and increase in another, the environment of the riparian areas will go through vigorous change.

In view of the opinion expressed by experts this Institute strongly feels the paradigm of water management should not be guided by reductionist vision of arithmetical hydrology. All technical details of the project or concept should be available in the public domain so that there may be more debate over the issue before it is accepted or rejected. The water plan should not be dictated by any apex body, rather it should emerge out of consensus among echelons of the society.

Kalyan Rudra and Anik Raychaudhury

Bangladesh A workshop organised by the Bangladesh People's Initiative against India's ILR resolved to put up a people to people, people to govts and regional opinion bulwark against it. According to a presentation, "If only rice output goes down by a MT or 4%, then 45000 persons will lose their employment every year, and subsequently the income loss will be nearly Tk 8 B". The damage will be compounded by the losses in fish, forestry, industry and transport. Adding losses in other sectors will possibly make the figure Tk 30 B a year. The GDP will be reduced by 1.5%. The impacts of the ILR will result in lower surface water flow that will inhibit the recharging of groundwater and wetlands and create unbearable water crisis. Salinity rise will lead to shrimp and power output loss. Mangrove output will be reduced. "Subsequently costlier irrigation will lower crop output, which will reduce food production.

□ A two-day consultation on ILR called for the creation of a South Asian network of people for water to prevent large intervention on rivers that risk the integrity of river basins on which life, livelihood, culture and civilization depend. The consultation attended by experts and activists from India, Nepal, Bangladesh and Pakistan also called for the development of a people's database on the rivers of the region to deal with the problems of secrecy that shroud mega projects like river linking. ILR was not only scientifically untenable and environmentally unviable but also would not achieve the objectives for which it was intended. The speakers raised alarm about the dangers of interfering with the Himalayan ecosystem about which knowledge gaps were aplenty and underlined the need for civil society groups to build pressure on their national govts and national leaders to work on a regional plane for equitable water sharing. Reaz Rahman, foreign affairs adviser to the Prime Minister said implementation of the project would violate the 30-year old Indo-Bangla water treaty. The experts stressed on a common regional position to devise a strategy for fair and justifiable utilisation of common water. Former Water Resources minister of Nepal, Dipak Gyawali said there were no discussions regarding the sustainable and fair utilization of trans-boundary water. Referring to the situation in Bihar, Gyawali said, no dams can control flood, they rather create disasters like erosion and water logging and bring miseries for the people. Former federal secretary of water and power ministry of Pakistan Syed Shahid Hussain said fair, equitable and sustainable management of trans-boundary water is a regional issue, "whether you solve it bilaterally or multilaterally". He said the govts in this region do not consider the civil society concerns seriously. (NEWAGE 090704, 220804, The New Nation 220804)

DAMS

Tehri The water level at Tehri dam had reached 653 m on July 30, leading to drowning of 200-year old Tehri town even as people who had not got proper compensation continued to stay there. Their homes also drowned. While the project authorities and the state Govt had declared the old town unsafe, over 100 people were still staying there in the hope of better rehabilitation package. The submergence of Tehri town has been firmed after closing the T-1 tunnel this year, in violation of the Supreme Court orders.

➤ **False data on R&R** MATU, working on Tehri issue, has alleged that the submergence of July 29 in Tehri was created for frightening the oustees. The MATU said that the claim by the Rehabilitation Directorate on rehabilitation of all oustees of Tehri was a false and the Directorate has misguided to the Central Committee, constituted for Tehri Rehabilitation. About 50 families of Tehri has refused to move out saying that they have not received any compensation.

➤ **Inquiry** The Union Govt has ordered a high-level inquiry by Central Water Commission, following the collapse of a tunnel and killing 29 labourers. The former Water Resources Secretary, Mr M S Reddy, will head the inquiry and team will include a member each from the CWC and CEA. All the deceased and injured were working for Jaiprakash Associates, the main contractor.

➤ **Blame on each other** Sources in JP Industries said that the accident at the Construction Site of the tunnel happened because of geological instability in the region. The accident happened as huge mass of rock came down where the vertical shaft was being constructed. While the Director of Geological Survey of India, Dr P C Nawani claimed, "What collapsed was the massive rock material of the underlined portion between 704 and 678 m of the shaft a. The rock fall was probably triggered by the rain water percolation that lubricated the rocks and made them move down." The most vulnerable area where poor rocks were found is between 690-630 m above the MSL. Monitoring and quality control are the responsibility of the Tehri Hydro Development Corp and contractors the J P Associates.

➤ **Experts and NGOs question** Experts and NGOs questioned the functioning of the committee constituted by the Supreme Court to monitor rehabilitation and environmental compliance for Tehri dam. They said that the accident at the Tehri dam at Uttaranchal requires that filling of the Tehri reservoir be stopped and all the ongoing HEPs in the Himalayan region be reviewed.

'Tehri would be last big dam in Uttaranchal'

The Uttaranchal Chief Minister announced that the 60 B Tehri project would be the last project of its kind in the state. (THE INDIAN EXPRESS, THE HINDU 310704, SAHARA SAMAY 070804, BUSINESS LINE 040804, THE HINDU 040804, 060804, THE TIMES OF INDIA 050804, 060804, RASHTRIYA SAHARA 080804)

Koshi High Dam DPR An Indo-Nepal joint office has been set up in Biratnagar in Nepal to carry out the feasibility study on Koshi high dam. That office would prepare the DPR within 33 months. In 1997, a joint technical team comprising experts from both sides agreed to, among other things, carry out the feasibility study of developing: a) the Koshi Dam (whose height could go anywhere between 269 to 335 m); b) Sun-Koshi Dam in Okhaldhunga district and; c) the Koshi Canal Waterway (which would be 165 km long) linking Nepal with Kolkata port in India. India has already allocated Rs 290 M for the study. But there are valid reasons for the Nepali – and Indian – public to be sceptical. First, Nepali and Indian officials have been talking about harnessing the Koshi Rivers – just like the Mahakali and the Karnali – for decades. Second and more important, in 1996, the two neighbors entered into an agreement to develop the Mahakali-Pancheshwor Multipurpose Project and prepare its DPR within six months. Eight years later, the joint team of experts is still “working on” the DPR. Now the proponents of Koshi high dam argue that the only way to tame the Koshi – which is called the ‘Sorrow of Bihar’ by the pro-Dam lobby – is to dam it near Chatara in Nepal. They also argue that the project would also reap “tremendous” economic benefits to Nepal; the Sun-Koshi Kamala diversion would irrigate 300 000 Ha in E Terai, besides generating electricity. The opponents, however, contend that it is not at all feasible to develop a high dam of that size in an area full of seismic fault zones. The issue of displacement is another story altogether. From Koshi multipurpose project, officials argue, Bihar stands to reap “tremendous flood control and other economic benefits”. That’s not true, say other experts. “Bihar is flooded every year not because of monsoon rains in Nepal,” says renowned water expert Ajay Dixit. “Rather, it is the mismanagement of the natural drainage systems there that’s causing the problems.”

➤ Five offices would be set up at different places in Nepal. The Indian Govt will submit DPR to Nepal Govt within 30 months. The estimated cost of the project is Rs 211.5 B and the total cost would be spent by India. Earlier, the Bihar Govt had rejected the proposal in 1954 because of the dam site comes under earthquake zone. The Centre and the Bihar Govt have also discussed the proposed Koshi-Gandak river link. The Union Ministry has directed to prepare new DPR for Koshi-Gandak flood control scheme. (*HINDUSTAN* 210704, *SAHARA SAMAY* 240704, *KATHMANDU POST* 170804)

Court directs Govt to desilt dam The Madras High Court has directed the State Govt to begin the initial work for desilting the Orathupalayam dam in Erode dist. A Division Bench of Justice V S Sirpurkar and Justice A K Rajan gave the direction passing an interim order on the writ petition from K K Subramanian, Lakshmi and S Selvakumar. The petitioners were praying for a direction to the authorities concerned to take action to clean the Noyyal river within a time frame by relocating the

industries set up within the prohibited area as per a Govt order dated March 30, 1989, of the Environment and Forest Dept and to pay compensation to the petitioners for the loss sustained on account of pollution. (*THE INDIAN EXPRESS* 200704)

Proposal to raise Rajasthan dam height The Irrigation Dept has sent a proposal for raising the height of Sei dam from current 8.25 to 10.93 m. The Sei dam had been constructed in 1977 on the Jawai River in Kotda tehsil of Udaipur dist. The dam is the feeder dam of Jawai dam and situated at 30 km upstream. The reservoir capacity at present is 1106 M cubic ft. (*RAJASTHAN PATRIKA* 080704)

Jurala Dam: 700 families submerged, no R&R When Andhra Pradesh Govt built the Jurala Priyadarshini Irrigation Project across the Krishna, its backwaters threatened at least 700 families residing at mini islands including 194 families of Kurvakhurda, 210 of Kurvakala, 94 of Mangigadde, 9 of Agrahar islands and 340 families of Burdipad village. The Krishna flows around these mini islands and islands are within the territorial jurisdiction of Raichur district of Karnataka. The AP Govt came in to agreement with the Karnataka Govt to rehabilitate the families. 900 Ha belonging to 700 families were acquired. The AP Govt also released Rs 70 M for the rehabilitation of these oustees. Once the relief was released, the Jurala project authorities started storing the Krishna waters in the reservoir. Instead of shifting the oustees to safer location immediately, the Karnataka Govt decided to divert the funds released by AP Govt towards other projects. And now the oustees have lost their lands without rehabilitation. (*THE NEW INDIAN EXPRESS* 050704)

Climate change: India faces rough ride Global climate change is likely to result in severe droughts and floods in India, with major impacts on human health and food supplies, according to India’s report to the UN Framework Convention on Climate Change. Released by India’s Environment Minister, the report predicts that rainfall patterns are also set to change. Western and central areas could have up to 15 more dry days each year, while the N and NE are predicted to have 5 - 10 more rainy days. Most major river basins are likely to become considerably drier. In coastal areas, the key climate-related risks include more frequent tropical cyclones and rise in sea level that will submerge mangrove forests and increase the salinity of wetlands. If sea levels were to rise by 1 m, over 7 M people could be displaced and over 5000 square km of land and 4 000 km of roads could be lost.

Earlier this year, scientists at the Pune-based Indian Institute of Tropical Meteorology used two models and predicted that the global warming could have serious consequences for crop growth and weather patterns. The global model predicts a 10% increase in monsoon rainfall over the next century. (www.mg.co.za 090704)

NE DAMS NHPC's Loktak continues to damage The long term submergence of agricultural lands by the high water level maintained by the Ithai Barrage [of the Loktak Project] has rendered useless the agricultural lands and there has been no crop production for a long time, according to villagers living in the peripheral areas of Loktak lake. The villages thus affected are Ithai, Khordak, Nongmaikhong, Kumbi, Thanga Part-I, Salam, Heisnam, Chingkha, Shamukon, Oinam, Karang, Ngaram, Khunsen, Moirangthem, Tongbram, Ithing Khunjao, Keibul Lamjao, Chingmei, Chandpur, Moirang Khunou, Thoiya, Kikilbon and Moirang. Other upland areas also affected are Thamnapokpi, Naransein, Sunusiphai, Phubala, Thinungei, Ningthoukhong, Toupokpi, Upokpi, Kha-Potsangbam, Nachou, Kwasiphai, Khoijuman, Toubul, Ngaikhong, Ngakchoupokpi, Ngaikhong Khunou, Keinou, Musnam Khunou, Oinam Isok, Noarem, Soibam and Nambol. These places used to cultivate the Taothabi variety of rice and a Ha paddy field could produce around 100 bags of paddy in those days prior to the commissioning of the Loktak HEP. In earlier days with the arrival of the monsoon, the villagers in lake's peripheral areas caught local fish species like Ukabi, Pengba, Nganoi and Ngakra that used to enter into ponds and rivers from the lake but today these fish are hardly available. (The Poknapham 110704)

NE Students warn against large dams Members of the Takam Mising Porin Kebang, the All Mising Students Union in Assam, urged the people of the State to become aware of the perils involved in massive constructions on the region's rivers, and on hilly terrain across its borders. The students' body exposed two major constructions, which once completed would threaten the existence of a large number of population spread across Assam. Referring to the recent flash floods witnessed in several parts of lower Assam, spokesperson Ranoj Pegu described it as the effect of Kurichi dam. He said that people of the State ought to learn from this disaster and raise a strong voice against the dam on the Subansiri river. He said that the people are not yet aware of the threats that the 116 m high dam would possess for the people in the low-lying areas. The proposed dam would be located in a seismic zone, and once it is breached, or water is suddenly released to ensure the protection of the dam, it would have a devastating effect on the downstream areas. The student body reiterated their demand to abandon the construction of large dams in the Northeast, and instead approved the setting up of smaller, more manageable dams so that major disasters could be avoided. Another dangerous situation is being created by the construction of the Bogibeel bridge over the Brahmaputra. The unprecedented flood experienced in Dhemaji district in recent times has been caused by the large-scale transfer of rocks from the riverbeds of several tributaries of the Brahmaputra to meet requirements of the Bogibeel bridge. As a result, the

water of the rivers now has a faster flow rate and inundate larger tracts of land. The reduction in the width of the river near the site of the Bogibeel bridge also has the potential to endanger life and property, especially on the north bank of the river. (The Assam Tribune 130704)

Concern over Dams in NE In a 3-day consultation people and experts fighting against indiscriminate construction of dams in the north-east have expressed concern at the state govts' turning a blind eye to the people's sufferings and imbalance in ecology. The "second consultation on dams in the north-east" was organised by the Manipur-based Citizen's Concern for Dams and Development. About 50 participants from six states in the North East, including affected people from Loktak, Mapithel dam and Tipaimukh (Manipur), Gumti (Tripura), Pagladiya (Assam) projects attended the Consultation. Participants included representatives from proposed projects in Lower Subansiri, Siang, Teesta and Bhairavi. The speakers said that the state govts in the region were in 'connivance' with corporate houses and power generating agencies like NHPC and NEEPCO without considering the people's problems. The meeting expressed concern that the implementing agencies were using dubious and undemocratic methods of push through their proposed projects. The sub-title of the meeting, called "Understanding Dams Proliferation in Northeast India", remained the main theme of the meet. Dr Smitu Kothari opined that dams being constructed in the northeast were all based on false data due to absence of required data and other information. Dr. Kothari said that since 1947, over 20 M people, mainly tribals, have been displaced by the dam projects and only about 1% of these affected people have been adequately resettled. Dams are always planned on the tribal area where the land is owned by clans and individuals living there for centuries, but not possessing the title documents, he said adding that the govt has found it convenient to fool and cheat these people. The union govt has identified 168 sites in the northeast as potential sites for dams. The participants were concerned about the plight of the affected indigenous people. Citing the plight of displaced people, an affected person from Tripura revealed that 26 000 displaced people of Gumti project, which was commissioned in 1973, were yet to be adequately compensated or rehabilitated. The meeting expressed serious concern that a range of international financial agencies like the World Bank, Asian Development Bank, JBIC (Japan), etc, are involved in these projects with inadequate studies and almost no consultation with local communities and the civil society of the Northeast.

➤ Birendra, who was a student of class 7 when the Gumti Dam was built in the remote Raima and Saima valley in Tripura, recalled how in 1973, 10 000 families were given a week's time to move out of their homes where they had been living for ages. He said even elephants were used to force the people out. Once called the paddy pocket of Tripura, these fertile valleys

were converted into a reservoir. The Project is now generating only 4 MW power against the 10 MW project capacity. He added that the people of the area were now demanding their land back and decommissioning of the Gumti Dam.

➤ Participants from Manipur stated how the NHPC's Loktak dam has resulted in annual floods along a 40 km stretch in the Imphal valley. Over 60 000 Ha of paddy fields get submerged every year due to the NHPC taking no step to flush out the flood waters, Ramananda said. He added that activists of the area were demanding decommissioning of the dam.

➤ Participants from Ukhrul, where the Mapithel multi purpose dam on the Thoubal river is under construction, revealed that the entire project was planned without consulting the people of the area resulting in the best and most fertile area of the district being submerged in flood waters. He added that help of army was also taken to push the project through and as result the farmers had to move to other areas, becoming refugees in their own land.

➤ Dr. Carlo and others of the Arunachal Human Rights groups spoke of the ambitious power plans being proposed for their state by the NHPC and NEEPCO. While 3 mega dams have been sanctioned, 28 others have been proposed. They said that MoUs have been signed without consent of the people in all the dam areas. They feared that these dams would affect the demographic pattern of the state. They said there are only 0.7 M Arunachalis, but the Chakma population was growing rapidly. The Chakmas themselves were displaced from the Chittagong Hill Tracts of Bangladesh when a dam was built there decades ago. We will fight tooth and nail against all these dams they warned. (NORTH EAST TIMES, MEGHALAYA GUARDIAN 230804, ASSAM TRIBUNE 240804)

Ranganadi project brings woes A study (rapid appraisal as part of a detail research study, of the project "to find out whether the flow diversion scheme of the NEEPCO really augur ill for the two valleys") conducted by the group Aranyak, pointed to the Ranganadi Project of the NEEPCO as one of the major sources of the woes for the NE people. The project will dry up a part of Lakhimpur District in Assam in the lean season and will simultaneously accentuate the flood havoc for the entire District. The phase-I of the 405 MW Project constructed in the Lower Subansiri District of Arunachal Pradesh envisaged diverting the flow of the Ranganadi through an 8.5 km long tunnel, and was commissioned in 2001. The phase-II of the Project proposes a 112-m high rock fill storage dam. It is being built on the Ranganadi near the 51 km post of the Kimin-Ziro Road at Yazali, 10 km upstream of the phase-I diversion dam site. This is to provide a reservoir and discharge will be used to generate 30 MW power. The Ranganadi has an estimated water discharge capacity of 1800-1900 cumecs in summer and 170-180 cumecs in winter. It falls at Subansiri, a major

Brahmaputra tributary in the north bank, at Ranganadi Mukh. The Dikrong also meets the Subansiri at Dikrong Mukh. These two rivers flow through Lakhimpur District of Assam. The Aranyak study found that the Dikrong bed had gone up by 2.5 m compared to its bed level in 1972. The trend of such a rise in the river's bed level was accelerated since 1992 at an alarmingly high rate. This phenomenon has been attributed to the two factors of tectonic forces and anthropogenic activities, the study said. "The Dikrong River has an average annual flow of 60 - 70 cumecs. This flow rises to 1200 - 1500 cumecs during the floods. Addition of another 160 cumecs to the river is sure to increase its flood level in coming years which will inevitably lead to bank topping and inundation of more areas on its two banks in the plains section between Harmoti and Badati," said the study. "In fact, no hydrological (or otherwise) investigation was done on the Dikrong River and its basin. Interestingly, the amount of water to be diverted from the Ranganadi and released to the Dikrong was also never mentioned in the DPR. It was only at the time of commissioning of the project in early 2001 when public demand for information on water transfer scheme peaked that NEEPCO divulged some information on the scheme." The study said that implementing such projects without the prior knowledge of the people and concealing crucial information from them was an outright denial of citizens' basic human and environmental right. Significantly, the findings of the study the NEEPCO conducted through the Central Water and Power Research Station after tremendous public pressure were also not made public. The villagers of Solmari, Meragaon and Dikronghat have reported water level going up and down between evening and early morning 3-4 days a week since March 2001. In the dry season, the sandbars are found to be submerged in the night and completely wet in the morning. In the absence of rainfall for days, the only plausible explanation for this is that of the NEEPCO releasing water from the Hoz powerhouse in the evening and night for power generation. Consider these facts against the backdrop of the Dikrong water level remaining only 1 - 1.5 feet below the bank top even during the winter these days at Meragaon, Solmari, Dikronghat and Sisapathar etc. The report said that the river Ranganadi would braid more and flow in multiple channels in the following flood seasons and in the process would engulf and inundate vast areas on its banks making floods more disastrous. Moreover, the drastic reduction in the flow in the lean season will have very serious implications for the forest and wetland ecosystems as well as livelihoods of local communities. (ASSAM TRIBUNE 220804)

Big Dams could spell Disaster: Assam Minister The Assam Govt has raised serious questions over the long term effect of big dams that are coming up on the upper stream of the Brahmaputra. The Govt acknowledged serious doubts and chose the floor of the assembly to

stretch a line between power generation and ecological disaster. The State Power Minister, Mr Pradut Bardaloi said that big dams could spell ecological disaster downstream in the Brahmaputra basin and before the dams were constructed key factors to protect the environment must be ensured. The state has called for a proper assessment of the advantages and demerits for Assam, of such large projects in Arunachal Pradesh. The govt's concern about these projects comes in the wake of the impact of excess waters from dams in Subansiri, Siyang, Kameng and other rivers, as well as the upper reaches of the Brahmaputra in Arunachal Pradesh, contributing towards the terrible floods this year in Assam. The Assam Minister has said that the Central and State govts must learn their lessons from the devastating floods in Assam this year and adequate care should be taken before granting permission for construction of big dams for in the northeast. He pointed out that the State faced unprecedented floods mainly because of dam breach in Bhutan and because of the overtopping of the Kopili HEP. He said that the Kaziranga National Park would be the worst affected in such a scenario, while the farmers of the valley would also suffer if the wetlands dry up because of construction of the dams. Bordoloi pointed out that this year the districts of Morigaon and Nagaon suffered the worst ever floods due to overtopping of the Kopili dam and in 1985, large parts of Nepal witnessed devastation due to glacial lake outburst floods, which washed away several dams. He further pointed out that the north-east is in zone V of the seismic map, i.e. the region is prone to severe earthquakes and one must thoroughly examine whether the dams to be constructed in the region would be able to withstand a severe earthquake. Bordoloi alleged that though the Ministry of Environment and Forest had constituted an expert committee for giving environmental clearance for the dams including the NHPC's Lower Subansiri, no one from the region was included in the committee. The problems of the region cannot be appreciated properly by people from outside the region, he added. (BUSINESS LINE 040804, THE ASSAM TRIBUNE 090804)

Doubts over NE Dams The Experts from Brahmaputra Board stated that the flood havoc in the Assam, particularly in the Brahmaputra valley may become more severe in the coming years. The NHPC has been given the sole right to construct dams in the upper reaches of Subansiri and the Dehang rivers for power generation. The NHPC had not kept any provision of flood cushions in its dams on the Subansiri and the Dehang. The BB officials claimed that the BB had flood cushion provisions in its proposed dams, which were multi-purpose ones. The Dehang contributes around 37.4% towards the Brahmaputra run-off at Pandu, while the Subansiri has a contribution of 10.66%. Thus both the rivers together have a contribution of around 48%. For the effective flood moderation in the Brahmaputra valley, flood moderation in these two tributaries is a

must, the BB sources said. The Part-I of the Master Plan prepared by the BB had recommended that construction of major storage projects in the Dehang, Subansiri, Debang and the Lohit sub-basins is necessary. The Debang contributes 7.65% to the run-off of the Brahmaputra, while the Lohit has a contribution of 9.5%. The Board prepared DPRs on Dehang and the Subansiri in 1983-84 and proposed to take up construction of these projects. The proposed Dehang Dam Project of the Brahmaputra Board had a flood storage capacity of 8 500 MCM. It had a proposed gross reservoir capacity of 47 000 MCM. The Subansiri Dam Project proposed by the BB had 2 500 MCM of flood storage capacity, while the proposed total storage capacity of the Dam was 14 000 MCM. The Board proposed 20 000 MW capacity in its Dehang Project and 4,800 MW in its Subansiri Dam. There were some objections from the Arunachal Pradesh Govt to the Board's proposals due to submergence of vast tracts of areas in Arunachal Pradesh. The Board then in 1994, started preparing the DPR for the alternative proposals with the concurrence of the Arunachal Pradesh Govt, for the two rivers with a provision of three dams on each of the rivers. In 1999 the NHPC entered the scene with a proposal to have 6 500 MW capacity in the three projects of Subansiri. The NHPC proposed to generate 14 500 MW in the three projects of Dehang: Upper dam at Yinkiong in Arunachal Pradesh (11 000 MW), Dehang Middle at Roing in Arunachal Pradesh (2 000 MW) and at Dehang Lower at Rotung in Arunachal Pradesh (1 500 MW). Due to the intervention from Centre, the NHPC was given the go ahead in March 2000. The total generating capacity of the six projects of the NHPC is 3 800 MW less than what the BB had proposed. On the other hand, as the NHPC dams are meant only for power generation, these do not have the provision for flood moderation. The Brahmaputra Board proposals had the provision to lower 1.41 m of water level at Dibrugarh in case of 100-year flood with the Dehang and Subansiri projects. At Gumi near Guwahati, the Dehang project of BB would have been able to lower the water level by 0.7 m and together with the Subansiri project, the lowering of the water levels would have been possible up to 0.98 m. For the 25-year return period of the floods, the Dehang project would have been able to lower water levels up to 0.82 m at Dibrugarh and at Gumi it would have been able to lower the water levels up to 0.64 m. Despite all this the Prime Minister had during his recent visit to the State, said that the Govt of India was committed to complete the Subansiri Lower and the Pagladiya Projects as these two projects had significant roles in solving the flood problem of Assam. The Assam Forest Dept has also issued the No Objection Certificate (NOC) to the Gerukamukh Project. But, the Supreme Court in a recent order stated, "There would be no construction of dam upstream of the Subansiri River in future." (ASSAM TRIBUNE 010804)

Can Pagladiya Dam Control Floods?

The Assamese are upset not so much at the terrible floods and the havoc they are wreaking everywhere, including Guwahati city, as at the govt's apathy, the failure of its relief programme and its lack of preparedness and planning.

As most people know, relief provision has become a big racket involving crores. People have learnt to expect floods, and to great extent, to live with them: they know floods can't be prevented or contained. But what they do expect is a warning from the state about the imminence and severity of floods, and some plans for timely evacuation. This alone could reduce loss to life by almost 100 % and damage to property by up to 80 % at a modest cost.

Instead, the govt spends billions on "flood control" -- a massive scam which consists of building barrages and dams that will be washed away in no time, or which swollen rivers bypass or which will add to the woes of the people by releasing water in flooded downstream.

One such project is a dam being built on the Pagladiya River, a tributary of the Brahmaputra. This is a "multipurpose" affair, meant to establish "flood control" over 40 000 ha, irrigate 54 000 ha and have a token 3 MW power generation installed capacity. Three years ago, the project was meant to cost Rs 5.43 B. Its estimated cost has more than doubled to Rs 11.36 B -- although it's not even half-complete. The cost meter is running -- and fast. The Pagladiya project came in for sharp criticism last year in the Parliamentary Standing Committee on Agriculture.

I was on an Environment Ministry "Expert Committee" on river valley projects in 1996-98. The Pagladiya dam was referred to us. "Pagladiya" literally means "mad river" because it changes its course wildly, drastically and suddenly. This is the result largely of seismic factors that cause mountainous masses of earth to shift position, creating landslides, huge silt flows and floods. The effect is compounded by deforestation and other man-made factors.

A minority within the committee, including me, opposed the project because no dam could possibly address the root-cause of the floods or the river's "migration" (shifting of its bed) by kilometres at a time. A three km-long dam would be useless, for instance, on a river that changes course by 30 km in 4 years!

The project, we argued, is doubly irrational because in the name of "irrigation", it would create waterlogging in places. Half the power it might generate in a good year would be used to pump out the accumulated water from "irrigation" -- to prevent floods!

The project was approved under pressure from the Centre and irrigation lobbies. Today, the same "mad river" is creating havoc through floods and by depositing coarse silt on fertile paddy fields -- causing local shortages of food. The Pagladiya, reports The Hindu, has turned Namati village (population 8 000) in Assam's Nalbari district "into an island. Three villagers, including two women, [have] died of diarrhoea due to lack of safe drinking water. The district administration has now installed four tube-wells". The irony of drilling tube-wells amidst floods should be self-evident!

At any rate, continues the report, the large amount of sand the river carries "gets deposited on the bed, raising its level. As a result, it easily breaches the banks, causing catastrophic damage. This year, too, [the] Pagladiya changed its course and converged with another river, Buradiya", no less!

Praful Bidwai (Rediff News, 190804)

Additional Information on Pagladiya Dam According to the Pagladiya Baandh Prakalpar Khatigrasta Alekar Sangram Samiti, the project will result in the loss of ancestral homes of 33 villages, in order to benefit 37 villages in the southern part of National Highway 31. The Samiti has recommended that three check dams be built instead of this single dam. (The Sentinel 080402)

Several groups like the All Bodo Students' Union, Bodoland Demand Legislative Party, All Rabha Students' Union and the All Bodo Employees Federation have held demonstrations seeking a halt to the dam as it may create a serious flood problem in the tribal dominated Tamulpur Revenue Circles. (The Assam Tribune 011101)

According to the All Bodo Students Union, 27 villages of Tamulpur and Mushalpur Revenue Circle would be submerged by the project. They say that the survey for the dam was made in 1968 and since then the environmental scenario in the area had undergone drastic changes making the construction of the dam irrelevant in the present context. The ABSU stressed that instead of going in for a big dam, the Central Govt should explore the possibility of setting up small dams in the tributaries in Nalbari district which would also help the irrigation.

The apprehensions that the implementation of the dam in the present form would completely submerge 70,000 bighas of agricultural land and displace 27 villages continue to exist. (Business Line 190101) (From the Kalpavriksh-SANDRP Dossier on NE Dams, forthcoming)

HYDRO PROJECTS

Bhakra Residents demand 20% Pandoh water The Citizens' Council Mandi has launched a campaign against the Beas Sutlej Link project being run by the Bhakra Beas Management Board, demanding 12% free power and release 20% water from the Pandoh reservoir into the Beas, that flows through Mandi. The CCM has launched a signature campaign to submit a petition to the Chief Justice of the Himachal Pradesh High Court. The CCM said the town had got nothing but silt and pollution from the BSL project since it was commissioned in 1977. The dam had stopped water in the river downstream from the dam. The aquatic life in the downstream region has been destroyed soon after the BSL project was commissioned in 1977, said the CCM. From Pandoh to Mandi town along the Beas and from the dredgers site of the BSL tunnel along the Suketi khud, tributary of the Beas that joins it at Mandi, mounds of silt litter the riverbanks. The CCM informed that the BBMB was earning Rs 19 B as revenue from the project, but neither Mandi nor the state got anything from it despite the project being located in the state. The BBMB officials said the HP PCB had filed a case against the BBMB and it was pending in the HP High Court. As per the court order, the silt was being ejected only in the monsoon, claimed BBMB. 5% of the water is being released into the river, claimed Chief Engineer of the BSL. (THE TRIBUNE 060704)

HEPs asked to ensure downstream flows According to the direction passed by the Chief Minister of Himachal Pradesh in a meeting held with the authorities of the Sutlej Jal Vidyut Nigam, all the hydropower executing agencies will be required to ensure that at least 10% of the total river water keeps flowing downstream for the survival of aquatic life, for water supply and irrigation schemes for the benefit of the people living in adjoining areas. It had been noticed that a majority of the HEPs had diverted complete river water for power generation leaving no water for downstream requirements. (DAILY EXCELSIOR 180704)

Project Cost overruns Of the 116 core sector projects with a cost above Rs 1 B cleared in the past decade, only nine have been completed. Due to the cost and time overruns, the costs of these projects have escalated by Rs 85.72 B. A pointer is the Dulhasti HEP in J & K. The project was to be completed in Nov 1990 initially at an estimated cost of Rs 1.835 B. The anticipated cost now is Rs 42.279 B. The revised deadline for the project (March 2001) has also lapsed. The Nathpa Jhakri HEP in Himachal Pradesh was to be completed by April 1996 at an estimated cost of Rs 16.78 B. Delays mean that the cost now is Rs 86.566 B.

➤ **Larji** The 126 MW Larji HEP in HP is facing huge escalation in cost and time. Over Rs 8.75 B have been spent on the project as against the estimated cost of Rs 6.67 B, yet major electromechanical works and certain

civil works remain to be completed. The final cost would be over Rs 10 B and per megawatt cost would be over Rs 80 M, highest for any big hydro in the state so far. The project is already two years behind schedule. According to the revised schedule, the project would be commissioned by June 2005. The cost of power will be Rs 3.5 per unit. (THE TRIBUNE 050704, THE HINDUSTAN TIMES 170704)

Workers agitate at Kol Dam Over 35 persons were injured as the police resorted to lathi charge on July 27 at the Kol Dam site in Sundernagar of Himachal Pradesh. The workers had been agitating for higher wages for the last two weeks. (THE TRIBUNE 280704)

CEA plans The Central electricity Authority has prepared pre feasibility reports of 147 HEPs in 16 states with total capacity of 40427 MW. The results of the PFR have indicated that 68 HEPs, with an aggregate capacity of 26819 MW, have tariff below Rs 2.50 per unit, which could be taken up on priority basis. The CEA has undertaken preparation of PFRs in 162 HEPs with total installed capacity of 50560 MW, to be completed in 11th-12th plans. (FINANCIAL EXPRESS 050704)

Kishanganga HEP gets CEA clearance The CEA has given techno economic clearance for the controversial 330 MW Kishanganga HEP in J & K. The CEA had earlier raised several objections to its technical feasibility. The project was awaiting technical clearance from the CEA since 2000. The project had been stalled since 1996 due to objections filed by the Defence Ministry, the environmentalists and for lack of funds. Defence Ministry had said that it would submerge the vast tracts of the strategic locations and in case the reservoir is breached, it will completely wash away military deployments right from Gurez to Bandipora. The local Dard-Shena population is opposed to the project, which in the first phase alone will inundate 25 villages, six summer high altitude habitats for shepherds, and eight camping sites. Six years ago, the govt had issued notices to around 10,000 people in seven villages- Badwan, Wampora, Khundeyal, Fakirpora, Dawar, Mastan Khopri, and Markot. By the end of the project approximately 25,000 Dard Shin populations will be forced to flee the Gurez Valley. The project envisages 103 m high dam over the Kishenganga (Neelam) River. From this reservoir water will flow through a channel and a 27 km tunnel dug south through the N Kashmir mountain range. The water channel will entirely change the course of river Neelam by around 100 kms, which will finally join the Wullar Lake and the river Jhelum near northern township of Bandipur. (KASHMIR TIMES 190604)

Uttaranchal HEPs get CEA clearance The CEA has granted techno-economic clearance to NTPC's 600 (150 MW X 4) MW Loharinag Pala HEP on river Bhagirathi in Uttarkashi dist in Uttaranchal, envisaging an investment of Rs 24.178 B. (BUSINESS LINE 190804)

Allain Duhangan: IFC Board approves Even as affected people protest Ombudsman accepts affected people's complaint about IFC policy violations

Even as people to be affected by the proposed 192 MW Allain Duhangan HEP in Beas Valley in Kulu District in Himachal Pradesh sent protest letters to the management and board of executive directors of the International Finance Corp (private sector arm of the World Bank), the IFC Board on Oct 12, 04 approved funding to the controversial project. The IFC management made many false claims and even lied to get the board to approve the project. It may be recalled that the Environmental and Social Impact Assessment of the project is fundamentally inadequate and biased, surveys have not been completed, impact assessment of several project components are yet to be done and base line social surveys are yet to be done. The demand was also that a decisive public hearing should be held after an acceptable ESIA is available. The affected people, supporting organisations and numerous IFC appointed independent observers have expressed and supported these concerns in various communications to IFC. However, in typical World Bank fashion, the IFC went ahead and approved the project without fulfilling its own policies and norms.

Ashish Kothari of Kalpavriksha (in April 04 IFC had asked KV to conduct meetings in the affected villages), in a letter to IFC on Aug 27 and Sept 22, 'It would be

People boycott public hearing on PALA-MANERI Dam: Demand all the documents in Hindi and fresh public hearing

At 11 am on Sept 3, 04, the authorities were waiting at Bhatwari Tahsil Ground, Distt. Uttarkashi, (Bhagirathi Valley) Uttaranchal for Public Hearing for the 4 X 104 MW PALA-MANERI HEP. Affected villagers presented two letters one for the 4 X 150 MW LOHARINAG-PALA HEP and another for PALA-MANERI HEP. In both of the letters the affected villagers raised mainly on three issues: that they were not aware about the process of Public Hearing, that Gram Panchayats were neither informed (no notice) nor provided the documents and that they did not know about the EIA, EMP or the project impacts.

The affected people demanded that Environment Impact Assessment Report, Environment Management Plan and all other documents in complete, should be provided in Hindi at village level. A process should start to explain to the affected villagers about the documents in simple Hindi. Next Public Hearing should be held after a month after this process is completed.

After submitting these letters to Chairperson of the PH, they demanded that hearing should be postponed till their demands are met as current hearing was in violation of the EIA norms. They asked comments of chairperson, but the chairperson, instead began the PH.

unfortunate if after facilitating a process on public hearing, getting numerous pleas from the affected villagers and local NGOs, and getting independent and specific inputs and recommendations from organizations like Kalpavriksha, IFC was to go ahead with funding the project without implementing the recommendations."

In the meantime, the affected people have filed an official complaint with the Compliance Advisor Ombudsman office of the IFC about the violations in the project and CAO office has accepted the complaint after assessment and has started investigating the issues. The IFC Board was informed about the complaint and it being accepted by the CAO office. Instead of waiting for a few weeks for CAO office to complete its investigations, the IFC management decided to push the project through the Board and the Board decided to approve the project.

If at the end of the investigations, if CAO office were to reach a conclusion that IFC has indeed violated its own norms in project approval process, then what would be the meaning of such a conclusion when project implementation would have started?

Thus "public hearing" was held without the affected villagers. One of the panel member also boycotted PH and left the stage. Mr R Sreedhar, Mr RK Mukerji, Mr A Ranjan from Uttaranchal Jan Jagriti Sangh and Vimalbhai from Matu were present under protest as observers.

Mr Sreedhar said that after an earthquake he initiated the process of rehabilitating a village named PANGI, govt. assured him that new place of village Pangi will not be affected by any dam project. But now Powerhouse is proposed on Pangi land. He was assured by the project promoters that the land survey is going on and his concerns will be taken care of.

I raised a point that I did not get documents from different designated departments. The process of PH is not complete according to the requirements of MOEF notification. Four of us also submitted a letter to the chairperson in support of villagers with same demands.

In the so-called PH only panel members and the project authorities participated. Outside, villagers held protest demonstration. The representative of Uttaranchal PCB claimed that the "public hearing" has been completed. People would fight this injustice. (Matu)

NEEPCO to pull out of Turial HEP

After investing over Rs 2 B in the 60 MW Turial HEP in Mizoram, the NEEPCO is now planning to close down the project following a deadlock on compensation to displaced tribal villagers. NEEPCO has borrowed from the Japan Bank of International Cooperation for the HEP. NEEPCO had an agreement with the Mizoram Govt for paying about Rs 80.5 M to the displaced in two instalments, but later power ministry turned down the proposal. When NEEPCO refused to pay the second instalment, angry villagers stopped work at the project site on June 8 '04. (THE ASIAN AGE 110804)

HP approves HEPs The HP cabinet has approved proposals for five HEPs with 249.5 MW installed capacity. The Sal-I (6.1 MW) & Suil (13 MW) would be executed by the SEB, while Tidgon (100 MW), Sorang (60 MW), both in Kinnaur dist, and Budhil (70 MW), would be in private sector. (BUSINESS STANDARD 030804)

HP approves Rampur HEP R&R The Himachal Cabinet approved the Agreement and Resettlement and Rehabilitation Scheme for 439 MW Rampur HEP to be executed between the state (30% equity) and the Sutlej Jal Vidyut Nigam. (THE HINDU 300804)

Jaypee financial plans The Jaypee group is considering public offers for its Baspa-II and Vishnuprayag HEPs to raise around Rs 8 B for its 1000 MW Karcham Wangtoo HEP in Himachal Pradesh. As per Jaypee Associates, the KWP is expected to achieve financial closure shortly, since the promoters, Jaypee Karcham Hydro Corp Ltd have proposed the new fund infusion formula. While the 300 MW Baspa HEP in Himachal Pradesh is already operational, the 400 MW Vishnuprayag HEP in Uttaranchal is to start generation shortly. As per CEA, the KWP is to cost Rs 53.45 B in addition to a foreign exchange component of \$117.44 M. The CEA figure for the Vishnuprayag cost is Rs 15 B. (BUSINESS STANDARD 090804)

Bhilwara plans The LNJ Bhilwara Group has decided to offload up to 49% stake in Malana Power to a foreign partner. The Group will acquire 90% stake in Allain Duhangan HEP, while the remaining 10% will be offloaded to the International Finance Corp, said the chairman. He said the Rs 9.22 B ADP will be funded with 65% debt. Of the total Rs 5.85 B debt, IFC will contribute Rs 1.84 B, in addition to the 10% equity stake. The remaining debt will be taken from domestic financial institutions and banks. [IDBI and Punjab & Sind Bank are likely candidates.] (BUSINESS LINE 250804)

Malana Power Insurance cover ICICI Lombard General Insurance has renewed the hydrology risk cover for the Malana Power Company for coverage of about Rs 100 M. The premium has been increased by 50 – 60%. (POWER LINE 0704)

Chhattisgarh HEP gets CEA clearance The CEA has accorded techno-economic clearance to the 60 (20 MW X 3) MW Mantar HEP in Bastar dist, Chhattisgarh. The Rs 3.134 B project to be implemented by SEB envisages construction of a semi underground powerhouse. (BUSINESS STANDARD 250804)

World Bank aid for big hydro The World Bank Country director Michael Carter has said the proposal to fund projects in the Northeast was at a preliminary stage and the final decision would be taken after deliberations. He said the Centre had already approached the WB in this regard. A high-level source in NEEPCO said the involvement of the WB would be a welcome development, but "acceptance of the terms and conditions would depend on the rate of interest and the moratorium period". The official added, "If the terms are similar to the Kathalguri project in Assam, which the Japan Bank of International Co-operation is funding, we will welcome it. But then the procedures associated with the World Bank and the Asian Development Bank are generally complicated and time-consuming." Critics said several projects in which the bank is involved across the world have resulted in disasters with a large number of people uprooted without adequate rehabilitation. In India, the Bank has been involved in projects like the Sardar Sarovar, Upper Krishna, Nathpa Jhakri in Himachal Pradesh and others, all of them have become embroiled in controversies. Carter, however, claimed that only projects with a "low social and environment cost" would be taken up for consideration. Being part of the eastern Himalayas, a portion of the Northeast, including Arunachal Pradesh, figures in the list of 21 bio-diversity hotspots in the world. [We learn that WB is considering USD 400 M funding for the 1000 MW Middle Siang HEP in Arunachal Pradesh.] (THE TELEGRAPH 050804)

Hydropower in India Among the first ten countries with hydropower potential, India ranks fourth with a technically feasible potential of 660 BU per annum. China tops the list with 1,251 BU per year. Among the top ten hydropower generating countries, India ranks 9th with an annual generation of 70 BU. China ranks 5th with 140 BU and Canada tops the list with 310 BU. The installed capacity of hydro projects in operation is 28 925.2 MW (as on March 31, 2004) and the 10th Plan envisages a capacity addition of 14 393 MW. The govt is making all out efforts to raise the share of hydro in the installed capacity from 25% to 40% over the next 10 - 12 years. Much of the untapped hydro potential lies in the Himalayas, and the conditions for exploitation are often extremely challenging, especially in the context of ecology and seismology. During 2003-4, hydropower commissioning was higher than thermal at 2 590 MW. Construction of big dams adversely affects the hydrology, physical, biological and social environment. Large-scale dam construction has failed sufficiently when taken into account the social and environmental costs incurred in its wake. (PIB PR 060804)

NHPC NEWS

Large-scale embezzlements?

All J&K Federation of Trade Unions has demanded an immediate probe into the functioning of the NHPC. The president of the FTU has said that there seems to be a planned strategy to keep the pot boiling. Also on the face of it, financial mismanagement, malfunctioning, nepotism, and favouritism prevalent in the Corp has put the Govt and people to a huge financial loss and will prove detrimental to the interests of the consumers, he elaborated. He said that just 300 MW had been added in the 10th plan against a target of 4300 MW with a budget of Rs 320 B, causing huge financial losses.

➤ The FTU president said that the NHPC Board approved an incentive package of about Rs 800 M for early commissioning of Chamera II HEP with certain milestone fixed for the contractor. It's a matter of probe as to whether milestones fixed for the contractor were achieved and incentive was paid to the contractor as per these milestones.

➤ Work on the Dulhasti Project was delayed for more than three years. "Unfortunately, the contractor working on the Project was granted work on the other project of the Corp. Was any penalty levied against the contractor for the delay in the Dulhasti Project due to which Govt has been suffering a loss of Rs 50 M per day?" The delay had escalated its cost from Rs 12.6 B to Rs 42 B.

➤ Teesta Project was awarded to second lowest tenderer in gross violation of the CVC norms. "The lowest tenderer has been allowed to withdraw his offer and encash Rs 40 M bank guarantee in violation of Govt instructions and contract provisions," he added.

➤ There was avoidable expenditure to the tune of Rs 6.5 M on capital maintenance of unit numbers of 1, 2 and 5 of Salal Project. "Capital maintenance of units of stage I and II commissioned in 1987 and 1993-94 respectively was carried out smoothly by the Corp as it had the required infrastructure and technical support. But in 2003, this job was handed over to a private agency on the pretext that there was limited number of skilled and unskilled manpower. The grounds given are not true," he emphasised.

➤ He alleged that only 25% locals were absorbed in the Corp while rest 75% employees were non-State subjects. (DAILY EXCELSIOR 010804)

Violations in Lower Subansiri

The 2000 MW Lower Subansiri project has been controversial from the early stages of planning itself for various reasons: procedural violations in the environmental public hearing held at Gerukamukh, Assam and poor environmental and social assessments. Construction activity started at the project site over two years before the necessary clearances were obtained and that too on illegally occupied forestland! This issue was brought up then by the

North-east Regional office of the MoEF and subsequently at the public hearing. Another issue, which repeatedly came up at this stage and was taken up proactively by the Assam Forest Dept was the extensive illegal collection of boulders from the Subansiri river by NHPC. Clearly, environmental and forest clearances were treated as a formality, or at best a "necessary evil". NHPC has been critical of the delays in the environment and forest clearance processes. What is not understood is that the delay is due to the compromises and shortcuts made by the project authorities. The Environment Impact Assessment report submitted by NHPC was grossly inadequate to aid environmental decision-making, and required fresh studies to be commissioned. An expert committee of the Indian Board for Wildlife noted in Sept 02: "The EIA and project documents reveal several shortcomings in the analysis of the project's impacts on biodiversity. Before taking a decision of such magnitude, it is essential that we are provided with accurate, detailed, scientific information from reputed sources." The EIA report is also silent on the range of downstream impacts of the project in the Subansiri valley due to alteration in the water flow regime. The Mishing tribe and other communities in the valley depend on fisheries and deep-water rice cultivation in the beels (wetlands), whose ecology is closely linked with that of the Subansiri River. The project received Stage-I clearance under the Forest Conservation Act, 1980, in June 2003. This is will be followed up with Stage-II clearance after project authorities comply with conditions of the Stage-I clearance. The environmental clearance under the Environment Impact Assessment Notification, 1994, was granted in July 2003 by the MoEF. In late 2003, a case filed in the Supreme Court highlighted some anomalies in the clearance granted to the project by MoEF and in April 2004, the Supreme Court specified some additional conditions for grant of clearance to the project. An established elephant corridor exists downstream of the dam site at Gerukamukh and the project site office and ancillary constructions have already disturbed this. To add to the problem, NHPC erected a long fence in the surrounding Subansiri Reserved Forests in late 2003 to "protect" its site from elephants! This act was not only illegal but it blocked the path taken by the elephants and increased the possibility of man-elephant conflict in surrounding areas. The fence was only removed by May 2004 after the Assam Forest Department had served the company a notice. In May 2004, a huge pile of muck and debris which had been dumped in the river instead of the prescribed area as noted in the case of Teesta V in Sikkim. This despite the following Supreme Court condition for the project: "Under no circumstances, the excavated material will be dumped either in the river or any other part of the National Park/Sanctuary or the surrounding forests." (THE STATESMAN 030704)

Chamera I affected still not resettled The ousted families of Chamera I HEP have filed objections against names of two dead persons added in the list and four persons who have already been given employment. On the issue of providing financial package of Rs 0.3 M to each of the 192 ousted families, the dist administration has again a draft list of 192 oustees. Besides this, another draft list of left-out 114 more persons, whose 1 - 9 bighas land was acquired for the project, has also been prepared. The official sources said that after hearing objections and claims of persons concerned the final list of 192 identified families would be prepared. (THE TRIBUNE 260704)

Parbati HEP: Labourers trapped inside tunnel Over 20 workers had been trapped inside a tunnel being excavated for the Parbati HEP near Barsiani village after slush blocked the mouth of the tunnel due to cloudburst in the higher reaches of the area, 70 km from Kullu on Aug 7 '04. The mishap took place when workers were working in the night shift inside the zero adit head race tunnel at Plugu. A cloudburst brought down tonnes of slush and boulders in the Jiwa nullah, blocking the mouth of tunnel, it is claimed. So far, 1100 m of tunnel has been made from the Plugu side and work from the adit-I is under way as part of the 800 MW Parbati-II HEP, being executed by the NHPC. A day later, the trapped workers mounted the blower pipe, an oxygen supply line and hammered their way through the narrow blower pipe filled with silt and debris. The NHPC & Patel Eng, engaged in the construction of the project on contract, ignored the safety of their workers and machinery despite timely flood warning.

➤ **PCB stalls work** Construction work on the HEP has come to a standstill with the Pollution Control Board staying work in certain areas where mud was not being dumped properly. A high-powered committee of the PCB had recently visited the project sites and inspected the work. The project work is in progress at Bershaini, Garsa and Sainj in Kullu valley. Muck from the tunnels was being dumped near the river or nullah beds, polluting the river water besides diverting its course. This had also resulted in an increase in silt in the Pandoh Dam and machines had to be pressed into service to dredge the reservoir. After the Aug incident, the state govt had asked the PCB to inquire the whole incident. It is learnt that the inquiry had brought to light certain violations by the construction companies, prompting the PCB to act against them. Kullu Deputy Commissioner confirmed that the PCB has imposed a ban on the dumping of the mud until further orders. (THE TRIBUNE 090804, THE HINDUSTAN TIMES 260904)

Arunachal Pradesh The Arunachal Pradesh is supposed to have about 50328 MW HEP potential, which is over 20% of HEP potential of India and about 85% of HEP potential in all the seven states of NER. The projects envisaged by the NHPC here are:

➤ **Subansiri Lower HEP (2000 MW)** The project is located near N Lakimpur on Assam - Arunachal

Pradesh border involving construction of 116 m high concrete dam and surface powerhouse for an annual generation of 7421 MU. The project is scheduled to be completed by Sept 2010. The project has still to fulfill the Supreme Court conditions and yet to get forest clearance.

➤ **Subansiri Middle (1600 MW)** The project is located 3.5 km from Tamen in Lower Subansiri Dist of Arunachal Pradesh. The project is a storage scheme to also enable moderation of floods in Kamala River, tributary of Subansiri. Two alternatives proposed for the scheme in the Feasibility Report envisage construction of a 195/220 m high concrete dam and an underground Powerhouse. It will generate 4875/5739 MU in 90% dependable year. As per the Supreme Court conditions, the project cannot be developed.

➤ **Subansiri Upper (2000 MW)** The project is located near Menga, about 25 km upstream from Daporijo in Upper Subansiri Dist. Two alternatives proposed for the scheme in the Feasibility Report envisage construction of 230/260 m high concrete dam and an underground powerhouse. It will generate 6581/7569 MU in 90% dependable year. As per the Supreme Court conditions, the project cannot be developed.

➤ **Siang Lower (1600 MW)** is located near village Rottung, 50 km from Passighat town, headquarter of E Siang Dist. Stage-I of project (power house at the left bank) will operate alone four years after its construction (1-7 years). After four years (7-11 years) the stage-I and II (powerhouse at Right Bank) will operate together.

➤ **Siang Middle (1000 MW)** the project is located 12 km upstream of village Kaying in W Siang Dist on the upper reaches of the river Siyom, tributary of river Siang. It envisages a 188 m high concrete face rockfill dam and an underground powerhouse to generate 3641 MU in a 90% dependable year. It is to be completed in 6 years from date of investment sanction.

➤ **Siang Upper (11000 MW)** The project, located in upper Siang dist includes a 257 m high concrete dam and an underground powerhouse.

➤ **Dibang Multipurpose project (3000 MW)** It is located at Muni, 60 km from Roing and includes 250 m high concrete faced rockfill dam, 4 km long headrace tunnel. The average generation shall be 15487 MU after a provision of flood cushion of 10 m below FRL during the monsoon. (BUSINESS STANDARD 0704)

NHPC-PGCIL agreement PGCIL-NHPC have entered into an agreement with the REC for projects to electrify villages under the Accelerated RE Programme. (POWER LINE 0704)

NHPC to raise Rs 12 B from global markets NHPC is planning to raise Rs 12 B from the international markets through export credit agencies for its Rs 70 B 2000 MW Subansiri HEP. ABN Amro has been appointed for this. The HEP will have a debt-equity ratio of 70:30. For the balance debt NHPC has tied up a line of credit of Rs 65 B with LIC & other banks. (FINANCIAL EXPRESS 190604)

NEWS FROM NARMADA VALLEY

SARDAR SAROVAR **NBA satyagraha** The NBA has announced an indefinite satyagraha on 12 July near the state secretariat to highlighting Maharashtra Govt's neglect in resettling Sardar Sarovar Dam oustees. 33 villages were affected by the SSP in Maharashtra and two-thirds of the affected families who were awaiting rehabilitation were not even declared as project affected. So far 1500 families had been resettled, though about 400 families were yet to receive land. About 3000 families await rehabilitation and of this, only 568 families were recognised as project affected. The state did not take a tough stand on the question of rehabilitation and about 1500-2000 families would face submergence. On 14 July NBA called off its satyagraha after the Maharashtra Govt promised to set right within 45 days the rehabilitation problems. (THE HINDU 130704, 150704)

SC directive The Supreme Court has directed the villagers of Madhya Pradesh affected by increase in the height of the Sardar Sarovar Dam from 95 m to 110.64 m to approach the Grievance Redressal Authority for their rehabilitation. A three-judge Bench passed the order on an application that submitted that the state govt had rejected the villagers' claims for allotment of cultivable lands even as they faced the threat of losing their land due to submergence. (THE HINDU 240704)

Police brutality On 6 - 7 July '04, hundreds of adivasis and farmers from over 100 villages of Badwani, Dhar, Jhabua districts who are affected by the SSP agitated in front of the offices of Jhabua District collector, NCA and NVDA. As the NCA officials did not come to dialogue with the people in the beginning, the agitators demanded that they be given the permission to enter and discuss their problems with the officials. During this process an adivasi youth activist of Andolan, Kailash Avasiya who is a resident of Bhilkeda village was pulled by policemen and started beating him with lathis and pulled his hand by keeping a leg on his chest, and broke his arms. The govt has failed to complete the lists and also in providing land based rehabilitation to the Bills and Bhillas who inherit the land for generations. Till today Govt is not able to buy private land for Jalshindi village even after the order of Supreme Court. Several people expressed their concerns to the Jhabua Collector. The District collector has agreed to visit the villages and to check with the list with the help of the gram sabhas, following up with the officers regarding purchase of private land. (NBA PR 090704)

SSP illegal Submergence Due to heavy rains in Madhya Pradesh as well as release of water from upstream Bargi dam, the reservoir level of the 110.64 m high Sardar Sarovar Dam reached a height of 116.95 m on 27 Aug. This caused the destruction of several acres of standing crops as well as several homes in many villages of Alirajpur taluka (Jhabua district of M.P.) and

Akrani and Akkalkuva talukas in Maharashtra. 13 houses were affected in Jhandana, 3 in Kakrana, 2 in Jalsindhi, 1 in Sugat, 5 in Anjanwara, 2 in Bhitada and in Badwani district 4 houses in Dhajara and 4 in Kuli. In addition crops were submerged in Kharya Badal, Dhajara, Ghongsa, Kuli (Badwani district) and in Jhandana, Anjanwara, Bhitada, Kakrana, Sugat, Sakarja, Nadi Sirkhedi, Bada Amba, Doobkheda, Akaddia, Chilakda (Alirajpur). On the Maharashtra side, hundreds of hectares of crops were destroyed and several homes submerged in Manibeli, Dhankhedi, Gaman, Domkhedi, Badal, Danel, Chimalkhedi, Bamni and other villages. There are nearly 10,000 families in Madhya Pradesh affected at 110.64 m. They are still waiting for rehabilitation as mandated by the Supreme Court verdict and the Narmada Tribunal. (NBA PR 310804)

Disaster due to the SSP Main Canal breach

At least seven villages in Pavi-Jetpur and Sankheda talukas of Vadodara district in Gujarat were inundated as the flooded Narmada main canal breached at two places near Bodeli, rendering over 300 of villagers homeless. The eastern side of the main canal actually breached at two places in early morning on 3 Aug, caving in nearly 50 m near Bhorda and Moti Uni villages in Pav Jetpur Taluka due to pressure from the flood waters from Heran river. The floodwaters which are designed to flow under the canal to the western side, started impounding on the eastern side due to silt blockage in the passage under the canal. It submerged flourishing villages like Bhorda, Mota uni, Rajbodeli, Moradongri, Chundheli, Panej causing loss of crores of rupees due to destruction of standing crops of cotton, maize and paddy while destroying many houses. It is due to the Canal that flooding occurred in these areas. On the night of Aug 10, yet another breach occurred in the Narmada Main Canal near Kadi, sending water into ten villages in Viramgam and Dholka Talukas of Ahmedabad District and forcing evacuation of 2000 people on tractors during the night. The flooding was the result of a burst check dam on the canal after heavy rains. (UNI 020804, NBA PR 070804, 120804)

SSNNL dragged to court Investors in the Rs 90 B deep-discount bonds of the Sardar Sarovar Narmada Nigam Ltd have alleged that SSNNL has changed the trustee to the debt issue, without informing the bondholders and filed a petition in the Delhi High Court. The SSNNL had issued deep discount bonds of Rs 3600 each in 1993, to mature in Jan 2014 with a maturity value of Rs 111000 per bond. SSNNL had planned to prepay investors for the outstanding bonds. The move would have saved the undertaking over Rs 60 B, though this would have led to investors suffering huge losses, since many investors have picked up the bonds from the secondary market at price over Rs 40000, which was way above the redemption price of Rs 25000. (THE ECONOMIC TIMES 050804)

NARMADA SAGAR 60 villages submerged On 7 Aug the MP Minister for PWD said that 135 families are still to leave Harsud town. He said that water has already entered 60 villages. (THE HINDU 080804)

Myth and Facts about NSP R&R

Myth: MP Govt says displaced families will “improve, or regain, their previous standard of living within a reasonable time”. MP finance Minister announces on July 12 that rehabilitation of Harsud “pending for years, has been completed in six months”. NHPC claims the dam will take care of the state’s power needs. Narmada Control Authority says 211 villages will be submerged.

Reality: on June 30, '04 MP Water Resources Minister admits only 1450 families of Harsud's have left. The rest refused to move. Legal norms violated. Project displaced should have been rehabilitated six months before submergence. Compensation package began only in April 2004. Banks have refused to honour some cheques. No rehabilitation plans. Rapid Action Force deployed. Forced eviction. The new township is a vast expanse of barren land, completely underdeveloped, without basic amenities. No water, no electricity, no schools, no health services, no roads, and no jobs. On June 29, Jabalpur High Court orders MP Govt to provide basic facilities by July 5. Not a single house has been built so far, State Industry Minister admits. Power will be even more expensive than Enron's Electricity in Dabhol. NHPC says power at the factory gate will be Rs 4.59 per unit. 249 villages affected, 38 have been designated 'encroachers', not eligible for compensation. Farmers have received exactly half the price: those with 2.5 Ha will get paid for 1.25 Ha. Small farmers have been wiped out. (TEHELKA 070804)

No monitoring NSP was approved by the Ministry of Environment and Forest and Planning Commission, subject to the conditions of the Narmada Water Dispute Tribunal Award. The NWDTA, compliance with which is supposed to be monitored by the Narmada Control Authority, requires that rehabilitation be done at least six months prior to submergence. The project developer Narmada Hydroelectric Development Corp with its duties over construction, impact assessment and compensation has proved criminal and corrupt in all the roles. The decision to raise the height of NSP to 245 m a year ahead of schedule without resettling the affected people indicates the ruthlessness. The monitoring authorities are not in picture, as the NCA has been kept out of rehabilitation monitoring to give a free hand to the dam builders. 22000 population of Harsud was 'asked' to leave without completing the land acquisition process. Village after village goes under water without rehabilitation. Unfortunately, the judiciary has failed to stand up to protect these citizens. In addition to the human toll, 40000 Ha of forest with rare flora and fauna have been clear-felled for NSP and compensatory afforestation is a joke. (THE HINDUSTAN TIMES 030804)

SNIPPETS FROM SCENE: Post SSP Gujarat

SSP fails to provide planned benefits A few months ago, before raising the Sardar Sarovar Dam height to 110.64 m, the Gujarat govt was doing propaganda that the Narmada dam would be able to irrigate lakhs of hectares. In over 13 000 of the 18 000 villages, the farmers apprehend a crop loss to the tune of Rs 80 B. The Narmada waters have failed to provide much relief to the areas they were meant for. Though the dam releases 8 000 cusecs water into the Narmada main canal, it does not reach the command area. On July 26, 7 732 cusecs of water were released into the canal. Of this, 3 835 cusecs went to the Mahi main canal to provide irrigation waters in the Mahi and Shedhi command areas – 70 000 ha in central Gujarat. Another 1 188 cusecs were released into the Sabarmati river, helping keep the 10 km-long stretch filled with water and irrigating 16 000 ha in the Fatewadi area. And 450 cusecs were released beyond Kadi to fill up Thol lake and the checkdams in Mehsana district and to irrigate some areas. These areas are not part of the Narmada command. Of the 23 000 km long distributaries planned to take water to the Narmada command work for just 3 500 km has been done. As for the 38,000 km-long channels that would take water to the fields, "there has been negligible progress". (THE TIMES OF INDIA 280704)

ISSUES ABOUT RIVERS

River Vasishta dying slow death Starting from Aroonothumali, Vasishta joins the Thumbal river 10 km downstream at Periakrishnapuram, and Swethanadhi at Attur and flows into Villupuram dist at Vellar before opening in to the Bay of Bengal near port Nova near Cuddalore (Salem dist) in Tamil Nadu. The river used to feed 2356 Ha of ayacuts mostly of perennial crops in Attur taluk. Following the construction of two dams at Annaimaduv across Vasishta and at Kariakovil across the Thumbal – in the 1980s, an additional 3000 Ha new ayacut was created. But the very construction of the earthen dams have spelt doom for the river and its ayacutdars. Even when the dams were proposed farmers in the region unsuccessfully sought the High Court's intervention. The govt had given an undertaking before the HC that action would be taken to prevent illegal sand quarrying and water extraction from the river bed. Both continue. Seven large lakes in the area have gone dry and are heavily silted. Due to the failure of monsoon over the last four years, the storage in the two dams is below the sluice levels and no water has been released. The riverbed has gone so dry that even the rainfed flow in the river gets absorbed in to the subsoil almost immediately. During the summer showers in May '04, Vasishta basin received 976.4 mm rainfall against an average of 925 mm. But there was no improvement in the storage or in the water table. Several hundred acres of arecanut, over 0.2 M coconut trees and thousands of Palm trees have wilted. (THE INDIAN EXPRESS 300604)

Project debris flowing into Pong The Rs 336.2 M Sidhatha Irrigation Project authorities of Govt of HP are dumping silt and debris in the Dehar khud which flows into the Pong Dam reservoir. This is affecting the aquatic life of the khud, filling up pools in the riverbed and also making approach to the river for the locals difficult. The Sidhatha project is expected to irrigate 3 150 Ha and generate 2 MW power. The BBMB authorities of the Pong Dam are also silent over the flowing of silt in to the reservoir. (THE TRIBUNE 200704)

BBMB violates Forest Conservation Act The BBMB in continuing to dump the silt from the Beas Sutlej Link to Suketi Khud (silt from the dredging operations in the Sundernagar balancing reservoir) is violating the Forest Conservation Act of 1980 according to HP Forest dept. But BBMB claims that the 1980 act does not apply to the project as it started operation in 1977. The silt flows into the Beas after covering 24 km of khud passing through the Balh valley and destroying the fertile land in the valley. BBMB claims that it has been doing desilting mainly in the monsoon and the throwing of mud is allowed under the Punjab reorganisation Act, 1966. Conservator of Forests, Mandi has in a letter on Sept 26, 2004 written to the Chief Engineer, BBMB that the Khad was in forest area as per Supreme Court orders and Forest Conservation Act has an overriding effect on all other acts.

➤ The BBMB authorities are trying to mislead the HP forest Dept on the dumping of "silt in to the Suketi Khud" as the Board has been using a state High Court order of May 25 '04 as a face-saving device, which is not applicable in the matter. The order pertained to "illegal mining and not throwing of silt into the Suketi Khud". The BBMB has been throwing silt from the BSL project into the Suketi Khud for the past over two decades in violation of the Forest Conservation Act, 1980. This has destroyed thousands of Ha of agricultural land in the Balh valley, the most fertile valley of HP, besides aquatic life in the 24 km long stretch of the Suketi khud and 6 km long Lohara khud. (THE TRIBUNE 130704, 270904)

SC forms Yamuna panel The Supreme Court has constituted a committee, headed by the Union Urban Development Secretary to suggest an action plan for improving the quality of the water of Yamuna during the hearing on the issue taken cognisance by the court five years ago. The Bench said, "it is necessary to undertake such an exercise as there has been no improvement in the quality of the river water in the past five years, notwithstanding the facts that over Rs 4 B had been spent under the Yamuna Action Plan". The committee will comprise representatives not below the rank of joint secretary from the Union Env. & Forest Ministry, Delhi Govt, Delhi Jal Board, NDMC, Delhi Cantonment Board, DDA, the DSIDC and the UP Govt.

➤ **Yamuna water unfit for any purpose** The CAG of India in its latest report said that due to untreated

sewage flowing in to the river Yamuna, the water is not suitable for any purpose by the time it leaves Delhi, becoming unfit even for bathing. The report said, "against sewage generation of 652 MGD, the Delhi Jal Board had a sewage treatment capacity of 512.60 MGD at the 15 functional plants. Only 355.76 MGD was treated during 2002-3. Thus, 296.24 MGD of sewage or about 45% of total sewage generation was flowing into the river Yamuna untreated, resulting in the deterioration in the quality of water in the river." The treatment capacity was now proposed to be raised to 735 MGD by '05. The DJB failed to implement various projects, which led to the escalation of pollution levels in the river. Out of the loans and grants of Rs 3.264 B released during 1998-9 to 2002-3 by the Delhi Govt, the DJB could utilise only Rs 1.859 B. Failure of the board to execute works was attributed to deficient planning and physical achievements fell short by 57%. It was revealed that the sewerage systems was not functioning properly, with 18 out of 24 main trunk sewers either not functioning at all or were operational partially. (THE HINDU, THE STATESMAN 050804)

Temple construction would affect Yamuna A PIL have been filed in Supreme Court on the issue of Akshardham Temple, which is under construction on the Yamuna bank in Delhi. The PIL said, "the construction of the huge temple and ashram covering an area of 20 Ha of the riverbed and surrounding areas would prevent the recharge of underground water and in addition would pollute the river by discharge of huge quantity of waste water." DDA had allotted 23 Ha of the riverbed land to the Swaminarayan sect in two phases. In Sept 1999, DDA changed the Master Plan to show the land as "public and semi public" from the initial classification of "agricultural and water body". DDA's move to change the land use and allot it came despite the fact that when Akshardham project was first referred to the DUAC in 1997, the Commission had clearly said that a change in land use could adversely affect the ecology of the watershed and the underground aquifer. The Delhi Minister of State for Environment and Forest said that according to the DDA, the permission was granted after the environment impact assessment study by NEERI and after obtaining a no objection certificate from the Yamuna Standing Committee of the Central Water Commission. (THE TIMES OF INDIA 100804, THE TRIBUNE 240804)

GAP has only gaps Despite spending Rs 4.62 B Ganga Action Plan-1 and Rs 8.09 B GAP-2 for cleaning Ganga, the pollution levels are as terrifying as before. The Sankat Mochan Foundation, the Asia Foundation and the USAID jointly highlighted this. "The Ganga Action Plan was launched by the Govt in Varanasi in 1986. Over Rs 500 M has been spent on the project in Varanasi alone, but pollution levels in the Ganga are as high as ever. Till 1993, the Govt said that the project had been successful. But then we started doing water testing and it was clear the sewage was still flowing in

to the river", said Dr Veer Bhadra Mishra, President of the Sankat Mochan Foundation. 90% of pollution to the Ganga is caused by sewage generation while only 5 - 6 % is due to bathing and other activities.

➤ **Cancer linked to Ganga basin pollution** As per a study from Banaras Hindu University, the water of rivers in Ganga basin contaminated by heavy metal is the main reason for gall bladder cancer, which is widespread in the alluvial plains of Uttar Pradesh and W Bihar. Ganga water contains concentration of cadmium and other carcinogenic heavy metals that are much above the permissible limits set by WHO. During the study, the researchers examined bile of 96 patients facing either the problem of gall bladder stones or cancer. (DOWN TO EARTH 150704, THE HINDU 280804, THE TRIBUNE 290804)

SAND MINING RIVERBEDS

Cauvery Illicit sand mining on the Cauvery riverbed continues unabated in some of the villages in Tiruchi dist, with powerful local mafia groups involving agricultural labourers in the activity. Officially, sand mining is currently carried out only in about 10 reaches in the Cauvery riverbed in the dist through PWD. Though the PWD authorities periodically impound lorries transporting sand illegally, truckers manage to get away, paying a fine of just about Rs 25000 imposed by the revenue authorities.

➤ **Citizens' panel demands ban** According to a report by citizens committee on sand mining in the Amaravathi and Cauvery river basins in Karur district in Tamil Nadu, sand mining has caused heavy ecological damage to basins. The study suggested that local bodies should be given power to stop sand mining in their areas if they found that sand mining would affect the aquatic fauna and create imbalance in river ecology. The committee said that though private sand mining was taken over by the PWD the situation had not improved as the subcontractors of the dept continued to plunder the riverbeds with the connivance of officials. Subcontractors were indulging in indiscriminate mining though the court had issued orders that mining should be done only in certain specified areas. In the absence of proper monitoring by the dept no one was aware how much sand had been removed from the riverbeds. If the present situation continued, major rivers in the state would be rendered dead. (THE HINDU 100804, 190804)

Kerala The Kerala Govt is considering stern steps to stop sand mining, including a ban for all the major rivers. Steps had been taken to fully utilise the River Management Fund of Rs 410 M in all districts except Idukki. He said the Govt planned to make construction of check dams top priority. 63 permanent check dams and 44 temporary check dams had been sanctioned. The Thrithala check dams would be completed by 2006. The Govt was ready to consider the idea using purified sea sand as an alternative to river sand for construction purpose. (THE HINDU 070704)

LAKES, GLACIERS, WETLANDS, MOUNTAINS

Draft action plan highlights benefit of wetlands The draft National Wetland Conservation and Sustainable Use Action Plan has recommended to assess service value of wetland ecosystem and ban on conversion of wetland areas and use of pesticides in the vicinity of wetlands. The director of Salim Ali Centre for Ornithology and Natural History, Coimbatore that prepared the draft said that the draft action plan that had been submitted to the Ministry of Environment and Forest once accepted, would be a step towards giving statutory provisions to the very concept of protecting ecologically fragile wetlands. Mangroves are part of the wetland ecosystem. Though the programme on wetland conservation was initiated on 1987, the deterioration of wetland areas over the last 10 years was an alarming 38%. The major thrust of the draft action plan was to somehow protect wetland from further degradation. (THE HINDU 050704)

Assam Wetlands turning wastelands As per a survey by Assam remote Sensing Application Centre and Space Application Centre (Ahmedabad), a third of the wetlands in Assam are shrinking. Assam has 4632 wetlands out of which 2969 are located in the Brahmaputra valley. The total area covered by the wetlands is around 0.1 M Ha (1.29% of the total geographical area). Survey reveals that the wetlands include swamp & marsh (43 433.5 Ha), water logged (2 336.5 Ha), lake & ponds (15 494 Ha), ox-bow (15 460.6 Ha) and reservoir (2 662.5 Ha). The wetlands in Assam have virtually turned in to the wastelands. 1350 inland wetlands are suffering due to aquatic weeds. The other reasons are extensive soil erosion and inflow of silt, disposal of domestic sewage and industrial effluents. The Ramsar Convention on Wetlands declared Deeper Beel as nationally important. (SAHARA TIME 240704)

J&K lake project approved The Centre has approved a Rs 2.695 B project for the conservation of the Dal Nagin lake. Rs 1.025 B financial assistance has been provided by the Planning Commission. The fund will be used on activities like dredging, de-weeding, catchment area treatment, solid waste management, sewage pumping stations and Eco generation. (BUSINESS STANDARD 210804)

J&K Wular plan The CM has instructed the Environment and Ecology Dept to begin work on the Rs 1.8 B plan on conservation of Wular lake. The mapping of the lake is over and work will begin on its demarcation and conservation. Under the plan, the Govt has said the eviction of the encroachments will also be taken up. The Govt has identified, through a survey that around 6000 kanals of this freshwater lake has been encroached. Officials say a large part of the lake has been encroached upon by the govt itself, as many of its offices are located around it. (THE INDIAN EXPRESS 260804)

WATER SECTOR

National water mission The Prime Minister has approved the setting up of a National Water Mission to look at the problem of water in coordinated manner. PMO sources said the mission would coordinate new investments in drinking water and irrigation projects. The Ministry of Water Resources will be the nodal agency along with the Planning Commission. (THE HINDUSTAN TIMES 280704)

WATER PRIVATISATION

Central Govt pushes privatisation The NDA govt had put together detailed legal, policy, regulatory and financial guidelines for the privatisation of Water Supply and Sanitation. Prepared by Ministry of Urban Development, the document claims that joint ventures with qualified national and international private firms will help accelerate development of indigenous capacity. While urban reform is a state subject, intent was to facilitate reform process by providing overall framework for central support. The framework accommodates all forms of private sector participation, with a caveat that all PSPs be designed with a clear obligation to improve service to urban sector. The ministry of Urban Development & Poverty Alleviation has requested extra Rs 150 M in addition to the existing Rs 1.5 B for the current year, increase from Rs 1.4 B last year and contributes entirely to the Centrally Sponsored Accelerated Urban Water Supply Programme. The scheme extends support to the state govts and local bodies for providing drinking water facilities in small towns with population less than 20000 and was initiated from 1993-4. As per 1991 census, there were 2151 such small towns in India. (THE ECONOMIC TIMES 020704)

INTER STATE DISPUTES

Rajasthan's right to Ravi-Beas water Rashtriya Jal biradari has challenged the Punjab Govt's argument that Rajasthan and Haryana do not form the part of the Indus basin. "From the Aravallis to Baluchistan is one geographical unit. 0.5 M sq km of Rajasthan falls under the Indus basin area," noted Dr N S Rathore of the Mohan Lal Sukhadia University. He said the Rajasthan Districts of Sriganganagar, Jhunjhunu, Hanumangarh, Churu, Jodhpur, Nagaur, Bikaner and Jaisalmer formed part of the Indus Basin. (THE HINDU 280704)

Pak MPs want Indus treaty renegotiation Pakistan ruling coalition's MPs have asked the Govt to buy water from India to tide over the acute crisis in Punjab and wanted the 1960 Indus Water Treaty to be renegotiated with India to get water from the Sutlej. Coalition members moved a motion in the National Assembly saying that parts of Punjab province were facing severe water shortage. The Coalition members said that the Govt should negotiate the purchase of water to save 50 M people in S Punjab. (THE INDIAN EXPRESS 290704)

Bhutan hikes water tax for India The water tax being paid to the Royal Govt of Bhutan by the Indian people of the Indo-Bhutan bordering villages for the use of waters flowing down from the Hutan hills through different rivers is set to be increased by 25% from next year. "Though the Bhutan govt is forcing the Indian people to pay such illegal tax, the Indian Govt has taken no steps against Bhutan," alleged the local MLA of Tamulpur LAC, Biswajeet Daimary. Similar is the fate of people of the entire Indo Bhutan border from Bhairabkunda to Kachugaon. People have been paying this water tax to the Royal Govt of Bhutan after signing an agreement in 1956 with the State's Forest Dept. The people of the area have been annually paying tax of over Rs 20000 for each bundh. Farmers of three border villages formed a committee and demanded the Bhutanese Authority to review its decision. (ASSAM TRIBUNE 270704)

IRRIGATION

UNION BUDGET 2004-5: AIBP restructuring The Accelerated Irrigation Benefit Programme introduced in 1996-7, is being restructured to give priority to last mile projects to be completed by March '05. Other projects, which can be completed by March 2006, will also be taken up in the current year. Rs 28 B have been allocated for the AIBP this year. The programme was allotted Rs 146.7 B since 1996-7, yet out of 178 large and medium irrigation projects only 28 were completed.

➤ **Scheme to renovate water bodies** The Govt will launch a scheme to repair, renovate and restore water bodies. Under the 2004-5 budget, pilot projects in five districts are to be launched at an estimated cost of Rs 1 B. It has been estimated that there are over a million such structures and 500000 are used for irrigation. Funds for the pilot projects will be drawn from different existing programmes. Once the pilot project is successful, the govt will launch the National Project.

➤ **Water harvesting for SC & ST** The Govt will launch a Rs 1 B nationwide water harvesting scheme for schedule castes and tribes to cover 100 000 irrigation units at an average cost of Rs 20 000. NABARD will lend and no margin money will be charged. The Govt will provide 50% capital subsidy. (BUSINESS STANDARD 090704, DOWN TO EARTH 310704)

Funds for watercourses The Haryana Command Area Development Authority has more than doubled the annual plan allocation from Rs 300 M to Rs 660.90 M for the enhanced target for completing watercourses. 437 watercourses would be completed during 2004-5 by lining about 3.6 M running feet. (THE HINDU 180704)

Pending projects in Punjab, Haryana As per the Ministry of Water resources, 180 irrigation projects have been pending in different stages across the country including three projects from Haryana and eight from Punjab. The Punjab Irrigation and Drainage project, a major irrigation project submitted in 1998, is still under the first stage of appraisal. Punjab had also submitted

proposal for a medium irrigation projects – raising of the lining/ banks of the Sirhind feeder canal in 2001 amounting Rs 130 M at the initial stage and Rs 490 M rehabilitation of channels of the first Patiala feeder and Kota branches. (THE TRIBUNE 140704)

Shah Nahar Project Uncertain The Shah Nahar Project on the foothills of Kangra dist has been facing bleak prospects following the Punjab Govt's Termination of Agreement Bill 2004, under which all interstate agreements relating to Ravi and Beas have been cancelled. The cost of the project is being borne by Himachal Pradesh (Rs 548.3 M) and Punjab (Rs 884.9 M). The agreement was signed on Aug 4, '83, following an agitation by farmers and residents living in the border areas. The agitation began when the Punjab Govt constructed the Shah Nahar Barrage for diverting the water of the Beas. There was resentment among affected farmers of HP residing on the Punjab border as their fertile land turned barren following the construction of the barrage. The project was approved in 1997 and estimated to cost Rs 1.433 B, which has now gone up to Rs 2.038 B. Punjab had released only Rs 295 M after five years. The project was to provide irrigation to 37000 ha in 92 villages. (THE TRIBUNE 310704)

Gurgaon Canal Project fails The much-hyped Gurgaon Canal project, which was taken up to irrigate S Haryana and border areas of Rajasthan, failed to achieve the project objectives. The Rs 600 M - 89.9 km long canal, had been built to utilise Haryana and Rajasthan's share of 2250 cusecs of water from Ravi-Beas and Yamuna rivers. While the total capacity is 2240 cusecs, the availability at the head of the canal varied 100 - 600 cusecs and that too only during the monsoon. The drains in Delhi are releasing polluted discharge into the canal, which makes the canal water totally unfit for drinking or irrigation. As per the latest report only 61 villages out of total 503 villages of Mewat area in Haryana had good quality water. As a result the average irrigation achieved during the past five years was 21.74% of the total cultivable area of 0.145 M Ha. The Project was conceived in 1954 and the work was taken up in 1960-1. (THE TRIBUNE 260704)

AP The Andhra Pradesh Govt has decided to appoint a firm to evaluate the quality of works of various irrigation projects to be executed by private companies. The State had also constituted a technical evaluation Committee to evaluate the bids submitted by the firms pre-qualified to take up the engineering procurement contracts. Out of 26 firms, which responded to the pre-qualification tenders invited by the Govt, nine firms were selected. The State Govt had decided to complete 26 pending irrigation projects in five years at a cost of Rs 260 B. The Irrigation Dept had issued tender notices for 22 packages of works, worth Rs 40.2 B, pertaining to various irrigation projects. In addition, packages were ready for 28 medium projects, to be completed in two years. (BUSINESS LINE 270804)

Yellampalli The Andhra Pradesh Govt has sanctioned the Rs 9 B Yellampalli-I project on the Godavari near Mancherial to benefit the upland areas of Adilabad, Karimnagar, Medak and Warangal districts. It will involve construction of barrage and pumping 6.5 tmcft for the NTPC's Ramagundam TPS. The NTPC has been asked to pay Rs 1.6 B. (THE HINDU 170704)

NABARD fund for TN The Tamil Nadu Govt will implement the Rs 982.9 M new minor irrigation and tank modernisation schemes during 2004-5 with the assistance of NABARD to benefit over 58 000 Ha. The schemes will include 19 new minor irrigation schemes at a cost of Rs 324.8 M to benefit 9497 Ha in 11 districts, rehabilitation and modernisation of 157 minor irrigation tanks spread over 17 districts at a cost of Rs 484.2 M to benefit 17 220 Ha and rehabilitation and modernisation of the Cauvery basin area in Thanjavur district at a cost of Rs 173.8 M to benefit 31 600 Ha. (THE INDIAN EXPRESS 280704)

NABARD funds for Chhattisgarh The NABARD will sanction Rs 80 B for various irrigation projects in the country under Rural Infrastructure Development Fund in 2004-5. The NABARD has allocated Rs 2.53 B to Chhattisgarh and requested it to submit proposals for the same. Till date NABARD has sanctioned Rs 11.0043 B to the state for several projects up to March 2004, in which 324 irrigation projects were to develop 54 774 Ha additional Irrigation. (DESHBANDHU 170704)

Small projects under AIBP The Centre has decided to include small irrigation projects under Accelerated Irrigation Benefit Programme. The Water Resources Dept has prepared the required draft for this. The AIBP had been started from 1996-7 and major and medium projects were included so far. (RASHTRIYA SAHARA 130804)

Choked UP canals cause drought Over 80% of the 99 966 km long canal system in Uttar Pradesh is choked. The blockage is one of the main reasons for causing drought-like conditions each year. The govt has released Rs 280 M for the desilting and cleaning of main canals and minors. All district magistrates have been directed to mop up additional resources to raise Rs 477.5 M required. In the past, some serious efforts were made to take the canal water to tails of 38 000 kms of minors but political interference and officials of irrigation dept created bottlenecks. As per a GO dated July 21 '04, the govt has issued guidelines to irrigation dept officials. Length of canals/ minors in the state would be remapped. (THE TIMES OF INDIA 310804)

NABARD funds for MP The NABARD has sanctioned Rs 185.6 M for 15 irrigation projects in MP under RIDF-10. Indore, Khargone, Mandsaur, Rajgarh, Sihore, Sajapur, Vidisha and Ashoknagar districts would be benefited and about 25000 Ha could be irrigated from these projects. (DANIK BHASKAR 130804)

WATER OPTIONS

Haryana Plan for barren land The Faridabad district authorities in Haryana has proposed a Rs 51.2 M - 5-year scheme to develop barren land and conserve water resources. The scheme launched in 2001-02 is to be completed in 2005-06. This scheme would cover 24 villages and be able to provide employment to the local residents during the period. 14 villages had been given to the land conservation dept and the remaining 10 villages to forest dept. (THE TRIBUNE 030704)

Kandi project The Akhnoor sub-division of Jammu Dist area was once known for growing only maize and wheat and facing severe drought like situation following massive degradation of forest and green cover in lower Shivalik ranges. Now the areas coming under the Integrated Watershed Development Project, also known as 'Kandi Project', launched in the area in 1999, has become fertile enough to grow all kinds of crops. Check dams/ earthen dams, wells, ponds, Bowalies etc constructed and upgraded by village development committees have provided better irrigation to the farmers. The earthen run off dams, vegetative check dams have been constructed with 10% contribution of the people. The water in small nullahs was now being utilised through micro-check dams and earthen dams. Most of the land in this subdivision is dotted with loose Shivalik hills, posing threat to agriculture land due to unabated siltation and land erosion due to flash floods in nullahs. (DAILY EXCELSIOR 190704)

Uttaranchal project for 9200 villages The Uttaranchal Govt and Union Finance Ministry have signed a treaty for Decentralized Watershed Development Project for 9200 villages in Uttaranchal over 7 years. The project aims to maximise the potential of natural resources and also envisages an increase in the income of habitants in selected watersheds. The project plans to do so through socially inclusive and institutionally and environmentally sustainable approaches. The Watershed Management Development Directorate will implement the project. Uttaranchal is to get \$69.6 M from the World Bank for this Project as IDA credit. (BUSINESS STANDARD, THE HINDU 310704)

Women bring change in Bundelkhand Assertion by women for rights over land and other natural resources has improved irrigation facilities, food security and self reliance among villages in Bundelkhand. One example is that of Beona Raja village where Samarpan, an NGO works. Till 2002, it had hardly enough water for a single crop. The turn around began in 2002 when women started watershed scheme. Now even poor farmers can get 2-3 crops a year. Garmonnati, another NGO began to empower women in Kabarai block in Mahoba in 1998. The 1990s saw them digging new community wells and building check dams in Ganj village (population 3400). Today, Ganj has irrigation water for nine months in a good year. (DOWN TO EARTH 150704)

Delhi HC orders RWH for public buildings The Delhi High Court has directed the Delhi Jal Board and other civic agencies to allow water harvesting in public sector buildings, wherever feasible. It has also sought compliance in this regard from authorities on those flyovers that got their designs approved from the agencies for RWH. This order was passed following a petition by Tapas. (THE HINDUSTAN TIMES 260804)

Desalination plant for Chennai? The Union Govt has announced to set up a Rs 10 B plant to convert saline water in to drinking water for Chennai through public-private partnership. (HINDUSTAN 090704)

BOTTLED WATER

Packed water norms cover soft drinks The Centre Govt extended the norms for packaged drinking water notified in Jan '03 applicable to carbonated drinking water also. This is as per the recommendation of the Joint Parliamentary Committee that probed the pesticides in cola controversy. This means that the standard for the water in soft drinks would have to meet the standards of any packaged water. While the standards of water content in soft drinks have been defined, the Govt has yet to set the composite standards for soft drinks. (THE ECONOMIC TIMES 210704)

COKE CAPTURES GROUND WATER

CGWB charges Coke The Central Ground Water Board has charged the bottling plant of Hindustan Coca-Cola Beverages Private Ltd at Kaladera, near Jaipur, with indiscriminately exploiting groundwater from deeper aquifers and causing ecological imbalance. The CGWB conducted investigations in the area following a directive of the Union Ministry of Water resources. (DOWN TO EARTH 150704)

GROUND WATER

NGRI project Hyderabad based National Geophysical Research Institute has undertaken a project for assessment, management & exploration of groundwater in hard rock areas under the Council of Scientific and Industrial Research network programme at a cost of Rs 250 M. The project is to be completed in '07 in association with six other CSIR institutes. (FINANCIAL EXPRESS 280704)

Levels deepen in Indore Narmada River, 70 km from the city, is the main source of water for Indore. The Yashwant Lake and Bilawali tank also supply some water. To carry the Narmada water to Indore, a Rs 5 B pipe water project was undertaken sometime ago. The first of the three phases was completed in 1978. But the venture is not proving cost effective. The Municipality earns Rs 100 M, but spends Rs 330 M. After the Narmada-3 project is commissioned, the annual R&M expenditure may increase to Rs 900 M. Moreover, the river currently provides 150 MLD of water to Indore –

much less than its requirement of 320 MLD. Groundwater is exploited to bridge the gap between demand and supply, which has been widening every year. According to Indore Municipal Corp and CGWB, there are about 3000 RWH structures in the city. The groundwater level of city has dipped by 4 m in the past 20 years. The efforts to promote RWH began in 1999 but the city did not have a good monsoon until 2003. (DOWN TO EARTH 310704)

UP groundwater blueprint The Uttar Pradesh Govt has prepared a Rs 60 B blueprint for improving groundwater levels with the WB assistance. The proposed scheme would be completed in a phased manner in 12 - 15 years to cover 3.6 M Ha. In phase-1 0.3 M Ha would be covered. (BUSINESS LINE 130804)

AP rules The Andhra Pradesh Govt has framed rules to regulate groundwater and made it mandatory to get the site clearance by the hydrologist of the Groundwater Dept or an approved private geologist before drilling of borewells. The borewell site should be insured before drilling is taken up. In case of failure, the drilling firms should claim compensation from insurance companies. The State incorporated these rules by amending provisions of the Water, Land and Tree Act 2002. The Groundwater Dept had conducted a detailed study on the utilisation of groundwater during May '04. The Dept has categorised 512 mandals as 'stressed' and 209 as 'safe'. The number of wells has increased from 0.8 M in 1975 to 2.2 M in '04. The area irrigated by the groundwater rose from 1 M Ha to 2 M Ha. The density of wells in some areas has increased from 2 wells to 20 wells per sq km. (BUSINESS LINE 110804)

GROUND WATER CONTAMINATION

Chennai As per a study by the Tamil Nadu Ground and Surface Water Resources Data Center, groundwater quality in city suburbs falling under Tiruvallur dist has deteriorated sharply due to indiscriminate water extraction. Groundwater in 24% of the N periphery is of good quality. For the study, data was obtained from 87 monitoring wells in Kancheepuram dist and 60 km from Tiruvallur. The desirable limit of 500 mg/l of Total Dissolved Solids has been exceeded in most areas in the N periphery and 44% S suburbs have good quality water. (THE HINDU 270704)

Contamination from coal fields As per a research by Nithish Priyadarshi of Jharkhand based Ranchi University, The coal mines in the region contains substantial levels of arsenic, which is contaminating the local water bodies and the Damodar River. Priyadarshi analysed coal samples from five sites. He found that the samples had arsenic concentration of 0.15 ppm on an average. He found that the water from the river and its tributaries had arsenic content in the range of 0.2-2.0 mg/l- much above the WHO guideline of 0.01 mg/l. He scrutinised coal from the North Karanpura coalfields in

the Palamu, Ranchi and Hazaribagh districts of Jharkhand. These coalfields produced 5.142 MT coal during 2003-4. The coal lying in the dumps amounted to 8.567 M cubic meters and is the key source of contamination. (DOWN TO EARTH 150804)

URBAN WATER SUPPLY

ADB's Jammu water project ADB has agreed to sanction Rs 2.44 B to J & K for water supply in Jammu city to be completed by 2016. (HINDUSTAN 080704)

Delhi As per a study by the Union Ministry for Water Resources, the Sonia Vihar "will blow up in to a major controversy if the plant and the pipeline are completed but water is not made available." The project was assigned in 2000, shortly before the creation of Uttaranchal. The Uttaranchal officials argue that the then Uttar Pradesh Govt had agreed to provide water for the Delhi project in hurry. Availability of water in the Tehri Dam and the Ganga Basin will play an important role in deciding the fate of the Project. Farmers in the region are apprehensive that supply of drinking water to Delhi will deprive them of irrigation. The Delhi Jal Board says the project was taken up in the first place on the understanding that the Tehri Dam will be its source of water and Uttaranchal cannot back out now that the treatment plant and pipeline are nearing completion. The project has already been delayed by a year and is unlikely to take off till the next year.

➤ **Transmission losses** A confidential note has exposed the inefficiency of the DJB. The confidential note stated that at least 210 MGD was unaccounted for and did not reach the consumers because of leakage and transmission losses. "Loss of water in transit is 30%," the note said. Referring to the BIS (IS 1172), the official said for a population of 14 M including commercial and industrial consumption, the Capital required about 600 MGD. Given that the DJB this summer has treated 670 MGD on an average, it means that the Capital is having surplus water. If the extraction of groundwater were taken into account, the amount of water available touched 800 MGD. The confidential report revealed that the demand was less than supply and thus it is learnt to have pointed towards the massive wastage of water during transmission and inequitable distribution.

➤ **Water unsafe** As per interim reports from National Institute of Cholera and Enteric Diseases and the National Institute of Communicable Diseases, the water supplied by Delhi Jal Board to the capital's residents is not safe for drinking and is highly contaminated. However, the DJB has raised serious objections to the findings. Both institutes picked up the samples of water at the request of the Delhi Govt in the wake of reports of an increasing number of cases of waterborne disease. According to interim report, the team of the Institute of Kolkata isolated "vibrio cholerae" from the tap water of Sarita Vihar in S Delhi. (BUSINESS STANDARD 050704, THE HINDU 090704, 230704)

ADB aid for MP The Asian Development Bank has approved a Rs 15 B for civic amenities in six cities (Indore, Bhopal, Gwalior, Ratlam, Jabalpur & Ujjain) in Madhya Pradesh. Rs 1.7 B have been sanctioned for Bhopal. The phase-1 of Kolar dam is over and the phase-2 could also be started. (BUSINESS LINE 100704)

Construction companies Govt investment in the drinking water sector has increased threefold over past five years: From Rs 16.88 B in 1999, to Rs 32.42 B in 2002, according to CMIE. The total planned capex by the state Govts for FY 2004 was Rs 49.75 B. In FY 1999 almost 80% of the spending on water projects by the central and state govts was revenue expenditure that went in to paying salaries or in to maintenance of the existing system. The increased investment has turned these projects into a major revenue spinner for Indian construction companies. IVRCL International (Hyderabad) is one of the leading players in the sector. Drinking water and Irrigation projects account for Rs 10 B of the company's Rs 16 B order book. The company got almost 67% of its FY 2004 sales of Rs 7.72 B from such projects. Water supply and irrigation account for about 20% of the Rs 40 B order book of Mumbai based Hindustan Construction Company. Other big players in the market include Gammon India Ltd and Nagarjuna Construction. (THE ECONOMIC TIMES 080704)

RURAL WATER SUPPLY

Economic Survey The Economic Survey has said that 94.6% of rural habitations have been fully provided with drinking water facilities, 5% are covered partially and 0.4% are yet to be covered. The National Agenda for Governance had envisaged safe drinking water to all rural habitations by 2004. As on March 31 '04 Rs 450 B had been invested to meet rural water needs. The survey has underscored the importance of water management. Issues of regulating groundwater withdrawal, encouraging water harvesting, soil and water conservation should be addressed with the involvement of the community. As per the 2001 census, 77.9% of the households had access to safe drinking water including 90% of urban and 73% of the rural households. (BUSINESS STANDARD 080704)

Mewat The Union Govt is supporting a Rs 4.5 B water supply project for Mewat in Haryana. The NCRPB is financing 75% of the project cost, the rest is state Govt's share. An investment of Rs 2.25 B is envisaged for phase-I. Mewat has a water supply of 20 litres per capita per day at present. (THE ECONOMIC TIMES 230704)

Drinking water in Union budget All drinking water schemes will be brought under the Rajiv Gandhi Drinking Water Mission to service the 75 000 habitations not covered as yet. The allocation for the Accelerated Rural Water Supply Programme has increased marginally from Rs 25.65 B last year to Rs 26.1 B. (DOWN TO EARTH 310704)

FLOODS

Hydrology 101: Trees hold answer to floods menace

Scientists have discovered that strips of planted woodland could play a crucial role in halting the floods that have devastated British towns in recent years. They found that land with trees can hold vast amounts of water that would otherwise stream down hills and surge along rivers into towns. 'The extent of water absorption was entirely unexpected,' said Dr Zoe Carroll of the Centre for Ecology and Hydrology in Bangor. 'It also has great potential for helping us deal with floods.'

Scientists at the centre collaborated with farmers from Pontbren, a community in the North Powys hills. Some years ago farmers there decided to reduce the intensity of land use, which had seen a six-fold rise in the number of animals grazing there since the 1980s. 'The system just wasn't working. We were on a treadmill, working harder, producing more but earning less. We set about changing the way we farmed to rely more on what the land could produce,' said R Jukes, a farmer.

The farmers began to stock hardier sheep. They cut back on grazing land, planted more trees to provide shelter for the animals, used woodchip instead of straw, and made the land more ecologically friendly. Owls, voles and shrews began to appear at the farms. The project started with three farms. Today there are 10, covering over 1 000 ha of verdant Welsh hillside. But the farmers wanted their efforts put on a scientific footing. They had noticed that during rainstorms the newly planted woodland seemed capable of absorbing vast quantities of water while grazed land let rain pour down hillsides. So they invited the scientists to study the land. 'We measured rain that was being absorbed by grazing land and by woodland, and found the latter was 60 times more effective at taking up water than land grazed by animals,' said Carroll. 'We expected to find a difference, but not one of this magnitude.'

The team do not fully understand the reasons for this, though grazed land tends to be compacted by hooves and this could reduce its capacity to let in rain. Trees also generate roots that break up soil, creating pathways for water to move through. Regardless of the cause, it is clear the discovery could have great practical implications. In 2002 flooding triggered by rainwater pouring from hillsides caused millions of pounds of damage to Shrewsbury, while Kidlington in Oxfordshire, Peterborough in Cambridgeshire and Leamington Spa in Warwickshire were all badly flooded in 1998. Scientists say that flooding is destined to get worse as global warming increases climate instability.

But the Pontbren research suggests a way to counter this problem. 'By planting trees on strategic plots we could create areas to soak up rain, allowing it to move into the soil rather than flowing over the land,' said Carroll. 'Water will always move down a hill, either over

the surface or through the soil, but this way we could stop it all arriving at the same time. Major surges would merely become heavy flows.'

A £6 m research is now investigating Britain's flood problem and will focus on Pontbren. Hydrologist Prof Howard Wheater of Imperial College London said: 'The work done at Pontbren is going to be very important in working out ways to halt major floods. We still have a lot of research to do, but tree-planting looks like having a significant role to play.'

Comment by Sean Rooney: This has been understood for many decades that it is the presence of naturally occurring flora on hills and mountains that gives such terrain its ability to hold and store water, often releasing it slowly over time through seeps and springs. I think it was Aldo Leopold who first established this relationship scientifically. Tree removal in snow-dominated watersheds exposes snow to the sun and causes more rapid melting and runoff, producing erosion, stream scouring, increased water temperatures, and flooding. (www.guardian.co.uk from European Water Management News 290904, waterforum@yahoogroups.com)

Embankments cause floods This year Bihar has again seen severe flood losses. The death toll has gone above 1000 and over 30 M people have been affected. But the govt is not ready to review the failure of flood control system. In 1952, the length of embankment was only 160 km, which has gone to 3430.47 km now. Even then every year flood damages are increasing. The experts are against the embankment as flood control measure. Every year 19 cusec per Ha silt is deposited in the riverbed due to embankments. Due to Koshi embankments alone, 182 000 Ha has been water logged. The embankments have been breached 1500 times till now. Even then, the construction of embankments is going on. (SAHARA SAMAY 240704)

Projects for Bihar The Planning Commission has sanctioned three flood-related projects for Bihar to be implemented over three years. The projects sanctioned on July 21, involve Rs 600 M and will be undertaken in flood-affected areas of Bhagalpur, Rasalpur and Mukhhama Tal. The Rs 197.4 M Tri Muhani Kursela embankment scheme on the right bank of River Kosi in Baghalpur dist, will involve a 30.98 km long embankment from Tri Muhani in Bihpur Block tied to higher ground in village Maheshpur. The Rs 281.6 M project in the Mukhama Tal area would involve increasing the height of 74 embankments along 489 km stretch. The third scheme involves anti-erosion works on the left bank of river Ganga at Chandpur-Dhamaun Rasalpur in the Samastipur dist. The Rs 81.94 M project envisages construction of 2225 m long revetment on the left bank of river Ganga. (FINANCIAL EXPRESS 240704)

Task Force for flood control The Union Govt has constituted a 21-member task force to examine the

issue of flood control and recommend sources of funding for any action plan it may suggest. To be chaired by the Central Water Commission chief, the Task Force is expected to give its report by Dec end so that its recommendations can be considered before the budget. The task Force includes experts from Assam, Arunachal Pradesh, Manipur, Tripura, Bihar, W Bengal and UP; officials of the NHPC, Planning Commission, CWC and Ministry of Water resources.

➤ **Letter to PM** On behalf of the people of NE India, the Citizens Concern for Dams and Development has written a letter to the PM on Task Force on Floods in NE India and demanded that the Task Force should include environmental and social scientists, ecologists and activists working on flood issues. The Govt should actively consider setting up of an interdisciplinary sub-group at the NE level to allow wider local experience to input into the work of the Task Force. This could be individuals/ institutions/ NGOs specifically working in the NE. A NE wide consultation and public hearing is also requested. In view of the fact that most rivers in the NE are international Rivers and flood invariably affect them, it will also mean including and consulting neighbouring countries in the processes of the Task Force. (THE TIMES OF INDIA 130804, CCDD PR 040804)

W Bengal dams cause floods and erosion Every year floods cause with major disaster in W Bengal. This year Malda, Murshidabad, Koochbihar and Alipurduar were severely affected from erosion due to flood. Three villages in Malda dist were submerged in river Ganga due to flood and soil erosion and over 400 families of these villages have now become oustees. Over 100 villages in Murshidabad dist, have affected. Over 88 000 people from Murshidabad and Malda districts, 60 000 from Koochbihar dist, 0.15 M from Jalpaigudi dist and 25 000 people from Alipurduar districts have been affected. According to experts, the main cause of floods in E and W parts are Farakka dam and Damodar Projects respectively. After heavy rains the sluice gates of Farakka and DVC are opened. Every year 160 km area from Jalangi to Karimpur is eroded due to Farakka dam. (SAHARA SAMAY 240704)

Uttaranchal, UP Devha, Ravkara and Arara rivers in Pilibhit district of Uttar Pradesh overflowed due to 50 m breach in Nanaksagar Dam in Udham Singh Nagar in Uttaranchal. Two villages were completely drowned on Aug 27 while over two-dozen villages were surrounded by floodwaters. Standing crops worth over a million rupees have been completely destroyed. Even after the partition of Uttar Pradesh and Uttaranchal, the control of the Nanak Sagar dam is with the Bareilly division of the Uttar Pradesh Irrigation Dept. According to reports, the Uttar Pradesh Irrigation Dept is not taking proper care of this dam and the dept is solely responsible for the devastation. In another case 29 people were washed away in Kailashue River due to floods in Uttaranchal. (HINDUSTAN, RASHTRIYA SAHARA 280804)

Jharkhand Eight persons were washed away in a flash flood at Tola Banjhi in Jharkhand's W Singhbhum dist. The incident occurred when the water level of the Kanu River started swelling on Aug 20 at Tola Banjhi in Banghdar village after heavy rains. (THE TRIBUNE 230804)

Assam The toll in Assam floods rose to 237 with the death of two more persons. The worst effected districts were Morigaon, Karimganj and Cachar.

Maharashtra At least nine persons have lost their lives in different parts of Maharashtra due to heavy rains. Water from overflowing dams in Raigad dist adjoining Mumbai, cut off the Mahad town.

Gujarat At least 23 persons have died in rain related deaths on Aug 4, mostly from Bharuch dist. Persons residing in low-lying areas of Surat, Navsari and Valsad had suffered heavy floods. Over 42 000 persons had been evacuated to safer places in Surat dist. Over 380 villages affected by flood in the state. The toll in rain related incidents in the state reached 128 this season.

Kerala 16 persons were killed and several injured as torrential triggered landslips and flashfloods leaving a trail of devastation. Over 2374 houses were damaged or destroyed. (THE TRIBUNE, DESHBANDHU 050804)

Punjab About 20% of the population in 352 villages in Patiala and Sangrur dist has been severely affected due to unprecedented floods in the Ghaggar-Markanda and Tangri rivers on Aug 2-3. Crops over 12 000 Ha have been affected, besides loss of about 1000 heads of cattle. The floods have also caused 133 breaches in the rivers since the water flow had reached 0.255 M cusecs in the Ghaggar. (THE TRIBUNE 180804)

Haryana accuses Punjab Haryana has been facing an explosive flood situation in Ambala and Kaithal dists. The Haryana Govt had alleged that Punjab had created numerous cuts in the Narwana branch of the Bhakra system and SYL Canal in Punjab territory to drain out floodwaters from their territory. Haryana Chief Parliamentary Secretary pointed out that the SYL canal and Narwana branch were overflowing in spite of only 500 cusecs being released in an authorised manner in to the latter. Nearly 30 times more water was flowing in these canals. At the Tangri Supar Passage near Jansui in Ambala, Tangri flow was 60 000 cusecs against the normal discharge of 40 000 cusecs. (THE HINDU 050804)

Haryana WYC breaches A 50 ft wide breach in the W Yamuna Canal on Aug 18 flooded parts of the Chhacchrouli area in Haryana. The water supply to the canal has been stopped and generation from the HEP on the canal had also been stopped. As per the Irrigation Dept, torrential rains and silting of the canal caused the breach. (THE TRIBUNE 190804)

China The toll had gone up to 439 and over 20 000 people injured up to Aug 28 '04. Over 1.4 M people had

left their homes. Rural areas and Sanghai & Beijing cities were also affected. (DESHBANDHU 290704)

Threat of Pareechu Lake in HP The Pareechu lake said to be about 20 km inside Tibet, started forming in early July, after a landslide blocked the Pareechu River. The blockage is located in the Ali Prefecture of Tibet that features high altitude, remoteness, difficult terrain and poor transportation and communication. The increase of the rainfall and water flow from the upper reaches results in a continuous rise of water level and possibility of the lake bursting or overflow anytime.

➤ **July 16:** The lake had reached a size of 1800 X 900 m, according to satellite images obtained by the National Remote Sensing Agency, Hyderabad.

➤ **Aug 5** The high alert was sounded along the banks of Sutlej river from Sumdoh down stream in the wake of the reports that a controlled blast to remove the blockade, which formed a 150 Ha lake in Tibet, could raise the water level in the river up to 75 ft.

➤ **Aug 6** Satellite images of NRSA had reported the lake to be 1900 X 900 m but the Chinese authorities had said that it was 6000 X 1500 m and 71 m deep.

➤ **Aug 9** Armed forces and paramilitary forces had been put on red alert in HP as the artificial lake had started spilling over and could burst any time. As a precautionary measure, the Sutlej Jal Vikas Nigam had shut down the 1500 MW Nathpa Jhakri HEP.

➤ **Aug 10** Over 3500 residents of 50 odd villages and small township face the threat if the lake breaches.

➤ **Aug 11** According to the satellite images taken on Aug 9, the length was 4.7 km with a tail of 2.8 km and the width of 1100 m. The surface area was 188 Ha.

➤ **Aug 12** The Chinese authorities informed the Govt of India that a breach had started appearing in the lake and it could be give way any time. Later it came out that no blasts were carried out at the lake site.

➤ **Aug 13** Several Chinese villages downstream of the lake have been evacuated. While on the Indian side the Union Home Ministry set up a 4-member expert committee to advise the crisis management group set up to deal with the situation that might arise if the dam bursts. S K Aggarwal from CWC, Deputy Surveyor General C B Singh, V Bhanumurthy of NRSA and Y P Sharda, senior geologist were the committee members. The State Govt has identified 56 villages along the Sutlej from Kinnaur to Bilaspur, which could be affected.

➤ **Aug 16** The flow into the lake had increased from 17.3 to 30 cumecs. The water level was rising by 9 cm a day. China had ruled out a controlled blasting of the landslide to allow the water to drain gradually.

➤ **Aug 17** Two units of Nathpa Jhakri HEP resumed generation as the level of Sutlej River remained normal and satellite pictures had showed no significant increase in the size of the Lake. The authorities claimed that the HEP suffered Rs 80 M a day loss due to shut down. (THE TRIBUNE 060804, 120804, 130804, 140804, 170804, THE HINDU 100804, 120804, 140804, THE TIMES OF INDIA 110804, 170804, BUSINESS STANDARD 180804)

Misreporting of Flood area Bihar faced unprecedented floods this year and the fury of floods had remained confined to the northern Gangetic plains with an area of 5.38 M Ha with a population of 52.3 M. There are 21 districts in the N Gangetic plains of Bihar and one Sub-division of the Bhagalpur district, Naugachhia, is also located there, thus bringing the total to 22. Two districts of N Bihar, namely-Siwan and Saran, are not affected by the floods. These districts are facing scarcity of rainfall and agriculture is dwindling. No floodwater has yet reached the Hardia Chaur (land depression). The flooded area of N Bihar (20 districts) is reported to be 4.986 M Ha. Siwan and Saran have geographical area of 0.2219 and 0.2641 M Ha respectively. If this area is subtracted from the total area of N Bihar, we are left with 4.894 M Ha. And yet the Disaster Management Dept of Bihar is continuously telling for the past so many days that 4.986 M Ha is flooded in N Bihar. This would mean that not an inch of land is left where floodwater has not entered. This is ridiculous. The loss data furnished by the dept suggest that Darbhanga has a flooded area of 0.241 M Ha while its total area is only 0.228 M Ha. Similar is the case with Madhubani (Affected area 0.424 M Ha against district area of 0.35 M Ha), Saharsa (Affected area 0.212 M Ha against district area 0.167 M Ha), Supaul (Affected area 1.584 M Ha against district area 0.2447 M Ha), Araria (Affected area 0.941 M Ha against district area of 0.283 M Ha), and Khagaria (Affected area 0.257 M Ha against district area of 0.1486 M Ha). It is also interesting to note that Kishanganj, Vaishali, Gopalganj and W Champaran have flooded area less than 10% of the total area of the respective districts. It is amazing that none of the three concerned departments like the Disaster Management, the Water Resources and the Dept of Statistics had ever bothered to look into the discrepancy. (Barh Mukti Abhiyan 190804)

Five die as police fire on flood-hit in Darbhanga Five persons were killed when police fired on a mob protesting against bungling in flood relief and distribution of substandard goods at Ujan village under the Tardih block of Darbhanga district in Bihar. (THE TIMES OF INDIA 170804)

FISHERIES

Haryana to increase yield Haryana has set a target to achieve 11% annual growth rate for production of fish and have set a target of 55 000 T per year by the end of 10th Five Year Plan. Rs 434 M had been earmarked for various plans during the 10th Plan period of 2002-7. 8760 Ha was brought under fish farming and 39 237 T fish was produced during 2003-4. (BUSINESS LINE 140704)

J&K Fish ponds plans The J&K Minister of Fisheries disclosed that to generate employment opportunities among the un-employed youths, 410 fishponds will be established in private sector under PM's Special Employment Package with 100% subsidy. She stressed

the need for strengthening the capacity of rearing of Trout fish and sought help of the Central Govt. She said that for setting up of these 410 fishponds, Rs 90 M will be spent out of which 75% shall be provided by the Central Govt. (DAILY EXCELSIOR 130704)

DROUGHT

Drought relief fund for AP The PM expressed Govt's support to the distress farmers of Andhra Pradesh and announced release of Rs 600 M from the Calamity Relief Fund and Rs 0.182 MT foodgrains under the food for work programme. The PM declared that the Centre would bring forward a new Seed Act to regulate and standardise the quality of seeds and provide a mechanism for penalties for violation of norms. He said some of the measures he had announced were his Govt's immediate response while others were long-term steps to revitalise the farm sector. (THE HINDU 020704)

AGRICULTURE

Mizoram Organic Farming Act Mizoram has become the first state to legislate for turning its entire agricultural produce organic. It passed the Mizoram Organic Farming Act, 2004 on July 12, 2004. Mizoram has only done what the Union Govt has always prescribed in its National Programme for Organic Production, launched four years ago, but never really practiced. Even now Mizoram is amongst the lowest consumer of pesticides and fertilizer in the country. Only about 25% of state's cultivators, comprising 55% of the total population, use chemicals in their crops. (DOWN TO EARTH 310804)

Investment There is need of Rs 770 B for incomplete irrigation projects, while the annual budget of Ministry of Water Resources is Rs 4 B and a major component goes for salary of employees. The budget for the ministry in 2003-4 was Rs 4.43 B, while the more serious fact is that only 2.75 B has been spent from allocated budget. The interim budget of 2003-04 had suggested Rs 4.58 B for the ministry. The situation in the agriculture ministry is also same. In 2003-4, Rs 32.42 B has been allocated for agriculture ministry, while the govt could not spend the whole amount. The govt has granted subsidy of Rs 550 B on fertiliser in last four years. However govt also listed this amount in the agriculture component. It is well known that about 60% of this amount goes directly to fertiliser companies. The share of agriculture sector in GDP is over 25% while investment in this sector is only 1.3% of GDP. (RASHTRIYA SAHARA 050704)

Bengal's no to contract farming The W Bengal Minister for Agriculture made it clear that the Govt would not allow contract farming in the agriculture sector by private corporate houses. He said that the real agenda of contract farming by the private sector was to squeeze the land rights of farmers and to restrict their flexibility in selecting crops. (BUSINESS LINE 010704)

Foodgrains production drop by 18% India saw a steep decline in foodgrain production which dropped by over 18% in 2002-3 reflecting the impact of the severe draught that had affected several states in the country in 2002. Minister of State for Agriculture said that from 212.85 MT production in 2001-2 it declined to 174.19 MT plunging by 18.16%. (DAILY EXCELSIOR 170704)

FOODGRAINS MANAGEMENT

Per capita grain availability declines The net per capita availability of foodgrain fell over 11% to 438 grams per day in 2003 compared to 2002 – the highest decline since 1991. This is revealed by the provisional figures published in Economic Survey. The decline this time is largely due to low production during 2003. A decline of a similar magnitude was observed in 1998, but the per capita availability then was higher at 447 grams per day. The per capita availability of cereals and pulses had reached a low of 416 grams per day in 2001, the lowest since 1980.

(Gms per day)

Year	Per capita availability			% Change
	Cereals	Pulses	Foodgrains	
1991	468.5	41.6	510.1	-
1992	434.5	34.3	468.8	-8
1993	427.9	36.2	464.1	-1
1994	434	37.2	471.2	2
1995	457.6	37.8	495.4	5
1996	442.5	32.7	475.2	-4
1997	466	37.1	503.1	6
1998	414.2	32.8	447	-11
1999	429.2	36.5	465.7	4
2000	422.7	31.8	454.7	-2
2001	386.2	30	416.2	-8
2002	457.3	35	492.3	18
2003	409.9	28.2	438.1	-11

(THE ECONOMIC TIMES 280704)

Rice scam in Karnataka An investigation has exposed diversion of 17 000 T of rice, which was allotted under the Sampoorna Grameena Rojgar Yozana. The scam came to light when an anonymous petition arrived at Deputy Commissioner's office, with the tip-off that FCI marked gunny bags containing rice were awaiting export in godowns in Mangalore port. The godowns were hired by S Mahadevan, a clearing and forwarding agent. The rice was to be exported to Mombassa, Kenya by Sharp Menthol Pvt Ltd, a Delhi based export firm. The company has sourced 12 000 T of the export consignment from Jagdish, owner of Guru Binny Rice Mill in Hassan. He had been paid over Rs 70 M by demand draft for the consignment, at the rate of Rs 9 per kg, when the actual rate at which rice is commuted in to cash wages is Rs 6.15. Sharp Menthol had placed the order for the remaining 5 000 T through Mittal Agro India & Thayal Associates. These companies had in turn procured the rice through 38 rice mills in 10 districts of Karnataka. (FRONTLINE 160704)

SUGAR

Mills seek easy raw sugar import norms

The sugar industry has urged the Union Food & Agriculture Minister to allow liberal import of raw sugar. Currently raw sugar can be brought into the country only on prior import condition. This means, the Govt will allow sugar exports under advance license scheme only after import of raw sugar. The Govt had come with this stipulation in Nov '02 as few mills in S India imported raw sugar. The Indian Sugar Mills Association had opposed such imports then. However, it is now favourably inclined towards import of sugar. During the current season (Oct '03-Sept '04), the trade projects sugar production to be 14 MT against the Govt's estimate of 16 MT. This is sharply down from 20.15 MT during 2003-4. Area under sugarcane has declined to 3.73 M Ha from 4.5 M Ha a year ago. Mills are favouring raw sugar imports also because it helps them to utilise the capacity that could otherwise be idle in view of sugarcane shortage. (BUSINESS LINE 170704)

FARMERS SUICIDES

Andhra Pradesh: Nizamabad dist Due to mounting debt three farmers committed suicide on July 2. A 42-year old Gaini Sailoo of Hajipur village in Birkur mandal ended his life (owned 3 acres, debt Rs 0.135 M). Vorsu Rajaiah, 48, of Bhavanipet in Bodhan Mandal consumed pesticides (owned 1.25 acres, borrowed Rs 0.125 M). Lakavath Maurya of Ganaram village committed suicide (owned 2 acres, borrowed Rs 8000 from bank and Rs 0.105 M from moneylenders).

➤ **Rajamundry dist** A farmer M V Prakash Rao of Machavaram village in Ambajipeta mandal committed suicide. He was tenant of 6 acres and taken loan of Rs 10000 from bank and tens of thousands from private moneylenders.

➤ **Cuddaph dist** A 23 year P I Venkata Konda Reddy, hanged himself in V Kontapalle village, unable to repay debts of Rs 0.15 M. He owned 4 acres. R Chinna Obul Reddy of Thotlapalle village consumed pesticides. He owned seven acres and had a debt of Rs 0.175 M.

➤ **Anantpur** Bandi Ganganna from Muthuvakuntla village committed suicide. He owned 15 acres and had a debt of Rs 0.19 M. (THE HINDU 030704)

PM announces aid The PM visited the villages in Andhra Pradesh where several farmers had committed suicide in last two months. "Shocked by realities" the PM announced an assistance of Rs 0.2 M to each family whose earning member committed suicide, job for one member in the family and houses under the Indira Awas Yojana with safe drinking water, roads, school buildings and other community needs. The Centre is contributing Rs 50 000 in each case. He sanctioned an additional Rs 50 000 from the PM's relief fund. (THE HINDU 020704)

Probe into farmer suicides in AP The Chief Minister has announced a judicial probe in to farmer suicides during the last nine years. He said that an agriculture commission would be constituted with experts and representatives of farmer organisations to study the agrarian crisis and suggest measures to overcome it. Offering a judicial inquiry or an inquiry by the House Committee, he addressed the leader of opposition and asked him to give his choice. He said he wanted to put an end to the blame game and the row over the number of suicides. The judicial inquiry would probe in a detailed manner the number of suicides and the reasons for the same. Naidu alleged that 704 distressed farmers had committed suicide after the new Govt took over. While in last nine years, over 3 000 farmers committed suicide. (THE HINDU 130704)

Maharashtra 13 farmers have committed suicide in Maharashtra. Five farmers, including a woman and two youths had ended their lives in Narkhed Taluk on July 23. Their cotton, pulses and soyabean sowings have failed to sprout. The 50-year-old women farmer Jijabai of Revatkar and Sanjai Nagmote, 35, of Manekwada were further distressed when 400 of their orange trees dried up. The state govt declared a "scarcity-like situation" in Vidarbha but only in 22 of the 119 taluks. Narkhed was not among them, according to reports. None of the 16 taluks in Yavatmal dist, which recorded the maximum number of suicides – over 103 in the last two years and about 17 among the 41 this rainy season – was included in the 22.

➤ **Relief** The Maharashtra Govt has decided to pay a compensation of Rs 0.1 M to families of farmers who have committed suicide this Kharif season. At least 17 farmers of Vidarbha have ended their lives after poor rainfall led to heavy losses and repeated sowing operations also went waste. (THE TIMES OF INDIA 170704, THE HINDU 240704)

Punjab A debt-ridden landlord, Bhagwan Singh of Gobindpura Jawaharwala village in Sangrur dist tried to kill himself by consuming pesticides. His wife was ill and he was forced to sell off his last acre of land to pay back 0.12 M to moneylender. He still has to pay Rs 35 000 along with monthly interest. On May 11 Sukhbir Singh, a 22-year-old youth of Lehal Kalan village killed himself. His father -owns 4 acres- has to pay a loan of over Rs 0.93 M. The Bhutal Khurd village in Sangrur dist has seen six suicides in two years due to poverty. The latest suicide by a 25-year-old farmer Babu Singh took place in Feb. He had married off two sisters and had to pay Rs 0.25 M to moneylender, said his wife. (THE TRIBUNE 050704, 060704)

Gujarat A 30-year-old Pravina, wife of a farmer - in Sardargadh village in Manavadar taluka - ended her life by setting herself afire due to impending drought. As per a report, the delay in monsoon had resulted in failure of the groundnut in 5 bighas owned by the family. Officials say the situation could be alarming. Manavadar

was the worst-hit area as it received only 103 mm rains so far this season. The state demanded Rs 24 B aid from the Centre. The state has put the total crop loss at Rs 80 B so far and chief secretary termed the situation "unprecedented". (THE TIMES OF INDIA 250704)

POWER SECTOR

PGCIL, NHPC pact with REC Power Grid Corp and NHPC have entered into an agreement with Rural Electrification Corp for taking up projects to electrify villages and households. The projects will be funded by Central Govt under Accelerated Rural Electrification Programme. The Centre is looking towards electrification of about 125 000 villages covering 10 M households in a time bound manner. The bulk of the Rs 170 B earmarked for the AREP is aimed at village electrification in Uttar Pradesh, Bihar, Jharkhand, W Bengal, Assam and Orissa. (BUSINESS LINE 150704)

POWER FINANCE

PFC loan to NEEPCO NEEPCO has tied up with the Power Finance Corp for a Rs 20 B loan to fund 2 projects in Arunachal Pradesh and Tripura by 11th Plan. The 600 MW Kameng HEP is to cost Rs 24.969 B. The 280 MW Tripura project is gas based. The long-term tariffs for both projects have been worked out at Rs 1.50 a unit. (THE TIMES OF INDIA 130704)

Financial closure of projects The Centre has cleared the financial closure for eight power projects, which are Birla group's Rosa Thermal Power station (567 MW) and Reliance group's Dadri Combined cycle (3740 MW) in Uttar Pradesh, Jaypee's Karcham Wangtoo HEP (1000 MW) in Himachal Pradesh, Torangallu Expansion (500 MW) and Magalore Thermal Power (1000 MW) in Karnataka. Akhakhol Combined cycle (1000 MW), Vadinar Gas base project (1200 MW) in Gujarat and Pathadi Thermal Power. (BUSINESS STANDARD 220704)

POWER OPTIONS

National Conference on Renewable Energy Prime Minister in his message to the first National Conference on Renewable Energy for Rural Development said that keeping in view the objective of making available energy at affordable rates, govt has decided to set up a task force to evolve an energy policy package. This will cover all sources of energy and will address aspects like energy security, access, availability, affordability and efficiency. He emphasized that proper development of renewable sources of energy is a must.

Minister for State for Non Conventional Energy Sources announced that the ownership and maintenance of projects under the Plan For Village Energy Security through Renewable Sources would be vested with the village community. He said that the govt is planning to make a beginning this year itself in some selective villages to meet their entire energy needs primarily

through biomass. Besides, solar photovoltaic lightning systems and small hydro projects can also be deployed. He said that his Ministry has prepared an Outline Plan for "Village Energy Security" through biomass because of its veracity to meet energy needs for cooking, lighting and motive power in villages. Minister of State for Non-Conventional Energy has announced that 25000 remote villages would be electrified through renewable sources of energy by 2007 and all households in such villages by 2012. This is an addition to be achieved from renewable sources during 10th and 11th plans according to the Outline plan. Investment of Rs 2 M would be required. Besides meeting the energy needs including making available bio-fuels, direct and indirect jobs for 25 persons per village could also be created. For successful implementation active involvement of DRDAs and Forest Dept is essential. (THE INDIAN EXPRESS 010704, PIB PR 260704)

HP clears small HEPs The Cabinet has approved the allotment of 27 small HEPs, with an aggregate capacity of 88.15 MW to 27 private sector companies to cost Rs 5.28 B in the next five years. (THE HINDU 300804)

Bihar Micro HEPs The Bihar State Hydroelectric Corp is setting up 12 micro HEPs on Sone canal with the help from NABARD. These projects are Tejpura (1.5 MW), Dehra (1 MW), Sipa (1 MW), Belsar (1 MW), Pahrwa (1 MW), Sebari (1 MW), Sirkhinda (700 KW), Rampur (250 KW), Amethi (500 KW), Validad (700 KW), Arwal (500 KW) and Natwar (400 KW). Rajapur (700 KW) project on Koshi canal is also ready. The Corp has also invited application from private entrepreneurs for setting up several micro HEPs in the state. These projects are Dharampur (1 MW), Lakshampur (1 MW), Sanghwadih (250 KW), Bhikanpura (250 KW), Bohra (500 KW) in Gopalganj dist; Kakolat (150 KW) in Nawda dist; Mahabalipur (400 KW) in Patna dist; Dhawani (500 KW), Dudhar (500 KW), Arang (500 KW), Harpur (500 KW), Chauri (500 KW), Delia (500 KW), Pawna (250 KW), Sakhba (250 KW), Gunsej (250 KW), Churanti (500 KW), Dehri (3 MW) in Rohtas dist; Sikraul (200 KW), Bhakwa (100 KW), Pashara (50 KW) in Buxar dist and Amba (100 KW) in Aurangabad dist. (RASHTRIYA SAHARA 170804)

Wind power in Rajasthan Enercon Windfarms, a subsidiary of Enercon India Ltd, has established a 24 MW wind energy project in Jaisalmer with an investment of Rs 1.2 B. The Power Finance Corp has provided finances. (POWER LINE 0704)

Haryana biomass energy plans

The Haryana Govt has envisaged a plan to produce 1500 MW of power through biomass. The Chief Minister said that the state is producing 3.385 MT of agro based biomass, of which 1.056 MT be available for power production. (DAINIK BHASKAR 270704)

Electricity from water mills in J&K The Northern Command of the Army has adopted the mechanism to modify the water mills (gharats) introduced by Dr Anil P Joshi, from Himalayan Environmental Studies and Conservation Organisation at Dehradun, and is all set to make electricity available to the remote villages of Jammu & Kashmir. The technology to generate electricity from the existing water mills that grind wheat for the villagers is very economic. It costs around Rs 37000 and engineers of the Army were trying to cut the cost. It requires only traditional wooden shaft with a steel fabricated one, some belts and pulleys and an alternator to generate 1 to 8 KW of electricity. It is sufficient to electrify with one bulb about 100 households and also run a lathe and a wool-combing machine. Under the technique, the traditional "gharats" in the villages will not only grind the corn, but also generate electricity. The Army has identified about 80000 water mills that were capable of electrifying the remote areas of J & K. (THE TRIBUNE 290704)

California solar power plans California Environmental Protection Agency is proposing to add solar power to a million homes in the next 10 years, paid for by a surcharge on consumers' electricity bills equivalent to about 27 cents a month. The surcharge would raise \$1 B in 10 years, with the state using the money to give rebates to homebuilders who install solar panels on new homes, and incentives for installing panels on existing homes. (THE HINDU 070804)

ENRON

DPC valued at Rs 100 B Some bidders have expressed interest in the Dabhol Project. The valuation of the power plant alone would be around Rs 75 B or \$1.5 B. This excludes the jetty, LNG terminal, peripherals, rights of way for the pipelines, re-gasification unit and transmission lines. If one includes all this, the valuation would be Rs 100 B. The CEA has given a valuation of Rs 27.5 - 30 M per MW. This worked around Rs 70 B for the 2250 MW plant. This is believed to be replacement value. Under the proposed formula, the Indian FIs led by IDBI have decided to change the dollar loans in rupee term. This means that the entire overseas loans of around \$310 M will be converted into rupee loans by buying out these loans for \$ 180-200 M and lodged in a special purpose vehicle. (THE HINDUSTAN TIMES 030704)

DPC gives MSEB Rs 260 B notice The Maharashtra SEB has slapped a notice for contempt of court of DPC after it received a claim of Rs 260 B from the latter on May 21, '04 as the Supreme Court had earlier issued a injunction against starting of any arbitration proceedings by DPC. (BUSINESS STANDARD 020704)

New body for DPC solution The Union Govt has constituted an inter-ministerial group for Dabhol Power Project. (BUSINESS STANDARD 190704)

SOUTH ASIA**UNDP keen to facilitate river talks**

The UNDP is keen to facilitate a dialogue between Bangladesh, India and Nepal over common rivers, UNDP administrator Mark Malloch Brown said. The UN agency believes it will lead to mitigation of flood-related disasters. (NEW AGE 200804)

Regional Energy Grid Plans The Regional Grid Operators Forum, organised by Nepal Electricity Authority that concluded in Nepal have agreed on forming a regional grid to achieve optimum utilisation of energy resources in South Asia. According to NEA, the meeting was focused on coming to consensus among the transmission system and electric utilities in the South Asia to establish a regional grid and optimise utilisation of resources benefiting the participating countries. Power Grid Company of Bangladesh, Bhutan Power Corp, Pakistan Water and Power Development Authority, Ceylon Electricity Board & NEA were the participants. (THE HIMALAYAN TIMES 200804)

Bangladesh Irrigation efficiency low Efficient use of surface water may bring an additional 1.6 M Ha under irrigation and decrease the cost by about 60%. Surface water is used in irrigation of 1 M Ha and groundwater for 3 M Ha, said sources in the Bangladesh Agricultural Development Corp. Groundwater-based irrigation, used mostly in Dhaka, greater Mymensingh, Jessore, Kushtia and some parts of Comilla, is not only expensive but also increases environmental degradation. The BADC sources said an additional 0.2 M Ha might be brought under surface water irrigation by 2010 only by motivating farmers. There are no alternatives to groundwater-based irrigation in Rajshahi, Pabna, greater Sirajganj under the Teesta barrage and the Ganges-Kobadac project in dry season. (NEWAGE 240704)

Rehab for flood hit The govt of Bangladesh will rehabilitate some 0.25 M farmers by providing them with the agricultural inputs required for a bigha (33 decimals) of land after the floodwaters recede, agriculture minister disclosed. He also said that Tk 500 M would be spent for the planned rehabilitation as the flood has caused immense damage to all standing crops. As a contingency measure Govt has already planned to provide 0.25 m farmers with seeds and fertilizer worth Tk 375 for cultivation of a bigha of land. Also, the govt will give funds to the farmers to develop seedbeds on about 0.13 M Ha of high lands. According to primary statistics available at the agriculture ministry, the current flood has damaged crops on 0.495 M Ha of land causing loss of 1.422 MT of crops worth about Tk 14 B. The flood has affected aus and aman rice, transplanted aman, seedbeds, jute and vegetables in 239 upazilas of 36 districts. (NEWAGE 230704)

Pakistan**WB questions viability of new projects**

The World Bank has questioned the economic viability of three ongoing and five upcoming irrigation projects that have a total estimated cost of Rs 232 B. In a review of the ongoing and proposed projects, the WB in its report pointed out that either sufficient water was not available for these projects or better alternatives could have been pursued both on technical and economic sides. The feasibility studies of these projects needed to be critically reviewed with a view to either dropping, deferring or curtailing their scope, even if they have reached a point of no return due to political or any other reasons.

Among the ongoing projects, the bank particularly mentioned the Rs 53 B Greater Thal canal project and Kachhi and Raineen canals and said such long-gestation and high-cost irrigation expansion investments were questionable. Among the proposed irrigation projects, the WB identified the Rs 42 B Sehwan Barrage Complex project, Rs 19 B Chashma Right Bank 1st Lift Irrigation, Rs 99 B Akhori Dam, Rs 18 B Dhok Pathan dam and Rs 1 B Sabakzai dam. The WB suggested that these projects should be deferred till the completion of their studies. The WB said that collectively the Thal canal, Kachhi and Raineen canals would account for over 4.6 MAF of water for their Kharif requirements only - nearly twice the additional capacity that would be created by the raising of the Mangla Dam.

Since the projects would take a long time to complete, they would not yield even the low level of benefits in the short term. No funds had been allocated for command areas development under these projects without which benefits of these projects would remain elusive, the WB added. Given the sandy nature of soils, the estimated ERR for the Thal canal (over 18%) appears overly optimistic. If the additional cost of colonization, CAD are added, the ERRs would become unacceptable. About the Rs 42 B Sehwan Barrage Complex, it said the ERR was estimated at 10.1% which was quite low.

The bank said that the Rs 19.2 B Chashma Right Bank canal lift irrigation project had an ERR of 10.3% and big landowners would benefit the most from additional irrigation of 27 800 Ha. Income disparities between large and small landowners and landless labour are likely to increase. On Rs 118 B Akhori, Dhok Pathan and Sabakzai dams, the bank said that a decision about these projects should be deferred till their feasibility had been established. Implementation should be deferred until after 2011. (DAWN 150704)

No consensus on large dams The parliamentary committee on water resources failed to evolve a consensus on the construction of large dams as Sindh and the NWFP rejected Kalabagh dam while all provinces were unanimous in implementing the 1991 water accord. The four CMs were unanimous that the 1991 accord "is sacrosanct and will be implemented in toto without any reference to ministerial decisions of 1994". This means that a 1994 ministerial committee decision to distribute water shortages on the basis of annual average use for the period 1977-82 that favoured Punjab has been annulled and Sindh's point of view has prevailed after 10 years. The meeting also decided that provincial priority irrigation projects and small reservoirs costing a total of Rs 206 B and Rs 8.1 B, respectively, in the first year would be taken up with the president for additional allocations during the current year. The CMs were given a comprehensive briefing on the whole exercise undertaken by the committee since Nov '03. He said Pakistan had 30.34 M Ha of which only 14.4 M Ha was currently under cultivation. Presently Pakistan's per capita water availability was 1200 cubic meters and it would decline to 1000 cubic meters by 2010. He said Pakistan's average water losses had risen to 45 %, which meant that seepage losses in Pakistan amounted to nearly 47 MAF out of a total of 104 MAF, while any new dam could store only 6-7 MAF. (DAWN 210704)

Lake Manchar is dead It is Pakistan's biggest freshwater lake. But today it would be more apt to describe Manchar as a grim cesspool of agricultural effluents, including pesticides. It once gave livelihood to fishing and agricultural communities and life to several migratory birds. Located 18 km W of Sehwan in Dadu dist of Sindh and 300 km N of Karachi, Manchar is a vast natural depression surrounded by Khirthar Range hills in the W, the Lakki hills in the E and flood embankment in the NE. The lake's misfortune can be traced back to 1982, when Pakistani authorities remodelled the Main Nara Valley Drain; the water body was now turned in to a drain to carry industrial runoff and agricultural effluents in to the Arabian Sea. This drain was built in 1932 to control floods in the Hanmal Lake in S Sindh and to protect the low-lying areas. The remodelled drain – now called the Right Bank Outfall Drain – did not work and was redirected to Manchar. The authorities assumed that freshwater from the Indus and from the torrents that gush down the Kirthar hills during the rainy season would dilute the effluents. Flows from the Indus are drying up because of barrages and dams in its upstream. (DOWN TO EARTH 310804)

Nepal NHPC to construct 4.5 MW LIH National Hydro Power Co in Nepal has announced that it has started works for Sunkoshi HEP to operate the 4.5 MW Lower Indrawati HEP. The project will use the leftover water of the Indrawati-III. The company is also planning to

operate 30 MW Chameliya HEP in collaboration with the Nepal Electricity Authority. (KATHMANDU POST 200804)

NEA, GBHPL sign PPA The Nepal Electricity Authority and Gautam Buddha Hydropower Private Limited have entered into the Power Purchase Agreement to develop Rs 90 M, 750 KW Sisnekhola HEP in Palpa district in W Nepal. The PPA has been agreed at Rs 3 per unit during wet and Rs 4.25 during the dry season. (KATHMANDU POST 140804)

Concern about Melmachi water privatisation As Melamchi Drinking Water Supply Project in Nepal hits another snag, water experts are demanding exploitation of the existing resources around Kathmandu Valley before bringing in Melamchi water. They have warned to lobby for scrapping the biggest ongoing infrastructure project, if transparency is not ensured in the dealings such as bringing in a foreign private operator. The experts argue that the \$ 464 M project could be developed for half the projected cost if local "resources and consultants" were used. By the time the project is completed the water tariff will have crossed the 'affordable mark' of Rs 50 per KL. In which case, majority of the urban poor will be missed out to fend for themselves. "If things are going to stay the way they are; if the donors are not going to change the way they do business; the country will be the biggest loser," says Gopal Siwakoti Chintan, Coordinator of Water and Energy Users' Federation Nepal. One of the conditions put forth by the ADB, the major financier with a stake of over \$100 M is: funds for the project's key component, the tunnel construction, will not be released unless there is a private operator to run the valley water utility. The experts, meanwhile, allege that the govt and donors are "sitting on" several study reports like the Pokharel commission report of mid 1980s, the JBIC report and recent ADB report on optimising water use in the valley. These reports suggest that there are enough untapped drinking water resources in and around the valley that, if used properly, are sufficient to fulfil the water demands of valley residents for several decades to come. Interestingly, in 2000, the WB, which supported the project for over a decade, pulled out of the project. Then WB Director to Nepal, Ken Ohashi, had said, "This project costs over \$400 (Rs 31,000) per resident. Do you really think people are ready for that kind of investment?" (KATHMANDU POST 020804)

Sri Lanka Upper Kotmale The Power and Energy Minister said the Govt would soon invite tenders for Upper Kotmale HEP. The project has been opposed in the past on environmental grounds. The proposed project will be near a row of waterfalls and it could affect other natural resources and uproot many people. The \$ 0.91 M project was initiated in mid 1990s but has been persistently opposed by experts and Ceylon Workers Congress. (DOWN TO EARTH 150804)

AROUND THE WORLD

Amazon Dams emit high levels of GHG According to findings of projects being executed under the large Scale Biosphere Atmosphere Experiment in the Amazonia, greenhouse emission of the Amazon rain forest in Latin America in 2003 were more than 400 MT. This figure is 60% higher than the previous estimates. The earlier projection had failed to take into account a big culprit – vast tracts of forests submerged under water due to HEPs. The rotting vegetation now emits very high levels of methane. Amazon's four dams together emit more methane than Sao Paulo, Brazil's largest city. The research began in 1998 and expected to continue through 2006, involves more than 1000 scientists and specialists from over 100 research Institutes that are based in Latin America, the US and Europe. The exercise is made up of 120 projects, 61 of which are already complete. (DOWN TO EARTH 310804)

Spain dumps river diversion Plan The Spanish Govt approved a new plan to tackle water shortages, ditching a controversial water diversion scheme in favour of desalination, better waste management and recycling. The law passed in cabinet by the recently elected govt targets the arid SE and replaces a project that included diverting water via a 1,000-km pipeline from the northern Ebro River. The old plan -estimated at \$5.1 B- was expensive, harmful to the environment and would only have delivered 620 cubic hectometres water. The new 3.8 B euro project, which focuses on a wide variety of small-scale schemes, is to bring some 1058 cubic hectometres to the thirsty SE. (www.alertnet.org)

Japan HEP cost over run The Yanba Dam, a large new dam being built on the Tonegawa River in Gunma Prefecture, is intended to be a major source of water for the five prefectures in this region, including Tokyo, Chiba and Saitama. But over the past 20 years, the estimated cost of building the dam, slated for completion in fiscal 2010, has doubled to 460 B yen. The runaway expenditure is due to higher-than-expected payouts in compensation to the affected local communities and for construction work. The price tag makes the dam the most expensive in Japan. The five prefectures have agreed to pony up the money although they were flabbergasted by the figure. If the Yanba Dam is built as planned, the gorge, with its stunning scenic beauty, will be lost forever. It is doubtful whether the benefits produced by this dam project will justify over the long run the enormous investment. The construction of the core part of the dam has yet to begin. The project should be reviewed for possible termination. 72 dams and other water development projects are currently under way nationwide, including some to supply water for agriculture. Among them, the Tokuyama Dam in Gifu Prefecture, which will be the biggest dam in Japan in terms of water volume when it is completed, has also faced the problem of a sharp

increase in construction costs, now running 96 B yen over the original estimate. The swelling price tag has scared the city of Nagoya into returning 45% of its rights to water from the dam. It is, of course, important to have a secure water supply. But there are many ways to do this without building a dam: reuse treated wastewater; funnel surplus water for industrial and agricultural use to households; pump up groundwater; or even harvest rainwater. (The Asahi Shimbun 030804)

'Environmental flows' accepted A range of international organizations have accepted 'environmental flows' as the tool to ward off social conflict and environmental degradation due to the overuse of water in the river basins of the world. The endorsement was received at a special session at the 14th World Water Week underway in Stockholm. The acceptance by the international community in Stockholm of 'environmental flows' is a major milestone because it demonstrates that 'environmental flows' has become widely accepted as a standard tool in modern water management. 'Environmental flows' means that water in rivers is managed in such a way that downstream users and ecosystems receive enough water to remain 'in business'. It entails negotiations between water users, based on an understanding of the impacts their water use has on others, and on their natural environment. "IUCN is already working in ten basins around the world to implement this approach, and with this endorsement we are confident that number will multiply in coming years. That is good news for everyone who depends on water, including nature," said Dr Ger Bergkamp of the IUCN Water and Nature Initiative. Experience with environmental flows in various basins also shows that it is wise to start implementation before social and environmental problems arise. "In the Murray Darling Basin, Australian Govts are now investing 500 M Australian dollars to return the system to environmentally sustainable levels of extraction. These are costs that can be saved if one applies environmental flows earlier", said Mr. John Scanlon, Head of the IUCN Environmental Law Programme. The Stockholm International Water Institute (SIWI), the International Commission on Irrigation and Drainage (ICID), the International Water Management Institute (IWMI), the United Nations Development Programme (UNDP), the Global Environmental Facility (GEF) and the Stockholm Environment Institute (SEI) all endorsed the approach and said they would use it in future. (iucn.org)

China's 30 000 reservoirs face safety problems The Chinese Minister of Water Resources stated that 30 000 (36%) of the country's total dams- were facing a number of serious problems as a consequence of mismanagement, technological backwardness and natural decay. The reservoirs facing most of the problems are small-scale ones, and were generally built during 1950s-70s. They all suffer from the social,

economic and technological limitations. The ability of the dams to protect against flooding is limited and erosion has damaged the spillways and the sluice gates. Furthermore, there are serious termite infestations at many of the reservoirs. (www.interfax.com)

Zambezi basin nations join hands Eight S African countries have agreed to establish a Zambezi Watercourse Commission to resolve conflicts over water use and rationalise the development of hydropower and irrigation projects in the basin. The agreement for the creation of Zambezi Watercourse Commission was signed by Angola, Botswana, Malawi, Mozambique, Namibia, Tanzania and Zimbabwe at a ceremony held in Botswana. The idea of establishing cooperation surrounding use of the Zambezi, Africa's fourth largest river, has been around for over a decade. For the last three years, negotiations have been supported by Sweden, Denmark and Norway. Sweden has been lead donor providing SEK 14 M over the period with Norway and Denmark providing about SEK 10 M each, channeled through the Swedish International Development Cooperation Agency. The Zambezi River Authority, the agency that runs the Kariba Dam, owned jointly by Zimbabwe and Zambia, has so far hosted the project. According to SIDA, in 2000, almost 0.3 M Ha was irrigated with the Zambezi water. Plans to increase significantly the irrigated area would mean drastically reducing the amount of available water downstream. SIDA notes that at least four major projects are planned in Zambia: Lower Kafue, Batoka Gorge, Devils Gorge and Mupata Gorge, which have a combined generating capacity of almost 4500 MW. (DEVELOPMENT TODAY 180804)

Nam Leuk affected face major problem According to a recent report by Lao researcher Phetsavanh Sayboualayan, based on a visit to villages affected by the dam, villagers are suffering from increased health problems, food shortages, flooding, destroyed fisheries, dead livestock, illegal logging and corruption. The 60 MW Nam Leuk dam was completed in 2000, with funding from the ADB. Water from the Nam Leuk reservoir is diverted into the Nam Xan River. Villagers living along the Nam Xan said that in 1999 many of their cows and buffaloes died after drinking the bad smelling water from the reservoir. Villagers' vegetable gardens have been flooded and fisheries largely destroyed. Downstream of the dam, the Nam Leuk River has far less water than previously. The Nam Leuk dam was built in the Phou Khao Khouay National Park, habitat to rare and endangered species including tigers, elephants and gibbons, as well as large numbers of fish species. Villagers report that logging was excessive & uncontrolled. At Nam Leuk, the ADB estimates the value of the timber logged to be worth \$2-3 M. Of this, according to the ADB, 3% was cut illegally from outside the reservoir area. In Feb 2002, the ADB reported problems with the disbursement of funds from the Nam

Leuk dam to Phou Khao Khouay. "Much remains to be done for the development of the Phou Khao Khouay National Park to make it into a real national park", states the ADB's project completion report. Over 2 years later in June 2004, ADB's Country Director in Laos said that there is still no management plan for the Phou Khao Khouay National Park. Villagers have not been properly compensated. (www.wrm.org.uy 0704)

ADB fund for Laos dam The Asian Development Bank said that it will lend \$36.1 M to Laos over the next two years and some of the loan will be used to fund the Nam Theun-2 HEP in the greater Mekong region. The ADB claimed that the power plant should be able to generate 1070 MW of electricity, 95% of which will be exported to Thailand and expected to earn revenue of \$2 B over the next 25 years. Environmentalist groups such as the International Rivers Network maintain the planned dam could pollute or choke waterways in the region and displace impoverished farming communities. Experts say the dam will force thousands of people from their homes and threaten wildlife, including fish stocks in the NT River and endangered Asian elephants on the Nakai Plateau. An estimated 6 000 people will have to be displaced, with another 40,000 people who live along the river affected. The developer of the project is international consortium Nam Theun 2 Power Company, in which EDFI, the global arm of French state-owned Electricite de France, holds 35% stake. The Lao Govt and Thailand's Electricity Generating Public Company hold a 25% each, while another 15% came from the joint venture Italian-Thai Development Public Co. (UPI-Philippines 270804, AFP 300804)

Kaman-3 HEP in Laos The Vietnam-Lao Electric Investment and Development Company is building the 250 MW Kaman-3 HEP in Sekong province of Laos. 90% of the output of the \$273 M plant will be exported to Vietnam. (POWER LINE July 04)

Mexico Dam Proposal opposed Two Mexican community activists have been jailed on July 27 for their alleged involvement in actions against the La Parota Dam in the SW state of Guerrero. Community activists were arrested on charges of having taken part in holding against his will an official of the Mexican Federal Commission of Electricity. The men are members of the Council of Ejidos and Communities against La Parota Dam. The CFE employee claimed he was forced out of his truck by 10 dam opponents and made to sign a document stating that his agency would withdraw its construction machinery from the dam site. Tensions have been mounting in the communities to be affected by the 532-foot dam since local people first learned about it two years ago. The dam could affect close to 25 000 people, according to community activists. On March 14 this year, 3 000 people marched in Acapulco, demanding cancellation of the project. More recently, communities blocked CFE equipment and personnel from accessing the dam site. The 765

MW La Parota Dam proposed for the Papagayo River would flood 17 300 Ha and numerous indigenous and peasant communities would be displaced. The electricity generated would support the regional electricity grid being built as part of the Inter-American Development Bank's infrastructural initiative known as the Plan Puebla Panama. The La Parota Dam is also being promoted as a way to reduce flood damage and increase water supply for the tourist town of Acapulco. Affected communities have demanded that the Mexican Environmental Agency publicly release the project EIA. They say the project was approved in a non-transparent manner without community participation. (IRN 290704)

Malaysia: Bakun dam Malaysian Deputy PM said the govt would go ahead with its controversial \$2.4 B Bakun HEP (2400 MW) in the jungles of Borneo but said the project, under review for its economic viability, needed restructuring. The dam is being built in the E Malaysian state of Sarawak. Experts say the dam, which would flood an area of rain forests the size of nearby Singapore and displace thousands, would generate far more electricity than the rural state would need when completed. (Reuters 280704)

American Bank confirms Yacyreta Dam problems A new report by the Inter-American Development Bank's Independent Investigation Mechanism has confirmed chronic and serious problems with the Yacyretá HEP, financed in large part by the IDB and the World Bank. The report also cites numerous violations of IDB policy in non-enforcement of regulations on resettlement and environment. The IDB has loaned \$977 M for the Yacyretá HEP, located on the Paraná River between Argentina and Paraguay. The complaint brought by the Paraguayan Affected Peoples' Federation of Itapúa and Misiones provinces, FEDAYIM, focused on the bank's 1994 loan of \$130 M to the Yacyretá Binational Entity for programs to mitigate the project's social and environmental impacts. The Panel found that, ten years later, only \$40 M of this loan has been spent, while existing social and environmental problems have worsened. Among the most serious problems which the panel attributed directly to the Yacyretá project were flooding of houses along the river, polluted creeks and water wells, elevated incidence of health problems, inadequate resettlement housing, and child prostitution. The IDB report comes at a time when the govts of Argentina and Paraguay have indicated their intention to raise the Yacyretá reservoir operating level by 7 m to increase electricity generation. The reservoir has been frozen at its current level since 1994, when it was recognized that mitigation plans had not been adequately prepared or executed. The panel also found drinking water wells to be polluted as a result of the dam. Many families were excluded from census of affected families, but should have received compensation, while others eligible had never received compensation. The Independent Investigation

Mechanism also found that the IDB had violated many bank policies, principally the Bank's Involuntary Resettlement policy, and had failed to follow proscribed measures for Analyzing Risk of Poverty, Community Participation, Data Gathering, Indigenous Communities, Difficulties in Transition, Compensation Packages, Follow up and Evaluation, Establishing Legal and Constitutional Frameworks, and Conflict Resolution, as well as violations of the IDB's Environment policy, in terms of not adequately addressing urban creek and groundwater pollution. (IRN PR 120704)

Istanbul to be capital of hydro research International hydropower research is to be coordinated from the Turkish capital by 2008. It will be a focus of work from other countries including the US, China, Africa and Argentina. The protocol was signed between the Turkish Ministry of Energy and Natural Resources and the UNIDO in May '04. (www.waterpowermagazine.com)

HEP plan in Chile ENDESA, Chile's largest utility, has announced plans to build five HEPs in the next 15 years for a total of \$ 2.8 B. ENDESA is also evaluating the construction of two additional projects. These series of stations will have 2,800 MW capacity. 300 MW Neltume on the Fuy River, will require investment of \$300 M, its environmental impact report to be submitted in 2005. ENDESA also plans to take advantage of the large hydrological potential found in the Futaleufú and Puelo rivers, both in N Patagonia. ENDESA already controls 4 882 MW capacity, 70% of the current installed capacity found in the Central Interconnected System (Chile's main power grid) and twelve times the annual growth in demand for electricity in Chile. ENDESA has requested rights in Patagonia to generate an additional 3 200MW. Other utilities like Colbún and Gener also control rights in this austral region. Their current capacity is 1 300 MW and have requested additional capacity of 2 600 MW. (La Tercera 260604)

GOVERNANCE & RELEVANT ECONOMY ISSUES

Malnutrition Child deaths in Maharashtra Over 9000 tribal children below the age of six have died of malnourishment-related causes in 15 districts in about a year. According to Govts statistics released on July 5, '04, between April and May this year alone, 1041 children have died. The toll until April was 7970. In April-May of this year 807 children have died in five districts of Thane, Nashik, Amravati, Nandurbar and Gadchiroli alone. The CM maintained that at the most 59 deaths could be attributed to malnutrition during April and May. The Mumbai High Court has warned the state govt and ordered to constitute a committee to submit a report on efforts to save children from malnutrition.

➤ **Tribal children in Orissa** 11 tribal children died in Nawrangpur dist in Orissa due to malnutrition. The children aged 2-5 died at Dongiriguda village under Jharigaon block of Nawrangpur between June 11 and July 1 '04. Dongiriguda, with a tribal population of about

300 people is a non-revenue village in the reserve forest area. Not having the status of a revenue village, the residents of Dongriguda are deprived of Govt facilities. (THE TIMES OF INDIA 060704, 170704, HINDUSTAN 100704, THE HINDU 240704, 250704)

25% Bengalis don't have enough to eat 25% people of W Bengal do not have enough to eat, getting less than the minimum daily requirement of 2 500 calories, the state govt admitted in the assembly. "Amlasole starvation death is not an isolated incident," state relief minister said. He said the state govt arranged for relief for 170 000 people in 2004-5. While the total number of people below the poverty line was not an underestimate, in some pockets, their number could be much higher, even 40%. (THE TIMES OF INDIA 070704)

Unscientific mining playing havoc in HP Hundreds of mines (legal and illegal) and crushers are playing havoc with the environment of Shimla, Solan, Kullu, Kinnaur, Mandi and Chamba districts in Himachal Pradesh. Over the years unscientific mining has transformed vast stretches of green into wasteland. The open cast mining are polluting the streams and rivers, creating a host of problems for the people downstream. Precious soil is washed away during rains every year as the overburden is scraped off and simply pushed down the slopes. No proper arrangement is made for the dumping of the huge debris generated due to large-scale excavations. Indiscriminate use of explosives also has a destabilizing impact on the hills by opening out fissures and cracks, which in turn disturbs the ground water channels. A committee set up by the state High Court to examine the working of stone crushers found that out of the 320 registered stone crushers, including about 180 involved in river bed mining, only five (2%) broadly confirmed to norms with remediable deficiencies. While 125 units (39%) had noticeable procedural violations and operational deficiencies like unscientific, improper waste disposal and some of them did not have a valid mining lease. Serious violations and major operational deficiencies were found in 190 (59%) cases, mostly engaged in river bed mining, which had no valid mining lease. (THE TRIBUNE 120704)

Mining hits coastal Gujarat Rampant illegal mining of building stone is wreaking havoc on the biodiversity of the Saurashtra belt. It has also resulted in severe groundwater depletion, apart from impacting the quality of water. Illegal mining is thriving in the entire belt,

including areas in Porbandar, Amreli, Surat, Una and Junagadh districts. Most of it is being done on govt wastelands, in forests or on private agricultural tracts without obtaining a lease for the purpose. Local people allege that over 70% of these mines are illegal. Groundwater has become salty in almost entire Saurashtra. This is because limestone, which worked as a natural wall and prevented the intrusion of seawater, is being mined indiscriminately. The water level has also plummeted. Local people reveal that sweet water was available at a depth of 6 to 9 m 20 years ago. Today they may get that at 150 m if they are lucky. (DOWN TO EARTH 150704)

Scam in MPSIDC loans The Madhya Pradesh Govt's Economic Offence Wing has registered a case of fraud against two former ministers, several officials and 42 companies in connection with the Rs 7.19 B scam involving non-payment of loans granted by Madhya Pradesh State Industrial development Corp under the Inter Corporate Deposit scheme. The MPSIDC had disbursed short-term loans of close to Rs 4 B (which later grew to over Rs 7.19 B, including interest) to several companies since 1995, a big chunk of which was not paid back. The EOW has registered a case Various groups including S Kumars (promoter of Maheshwar HEP in MP), Som Distilleries (Bhopal) and Enbee Group are involved. The Enbee group of Industries, which received the ICD in many installments (total dues Rs 1.16 B) is promoted by Congress MP from Bhopal. Three Enbee group companies got loans for short terms like 45 days but they were not repaid even after 4-5 years. Loans worth millions were sanctioned without project reports or written application or even collateral. (THE HINDUSTAN TIMES 280704)

People's Commission on Land The PCL was set up in Dec '03 to look into land related grievances pertaining to the landless, adivasi, dalit communities, etc. The aim is to see that a large number of land grievances in and outside the courts are sorted out speedily. It is expected that through the PCL reports, the grievances will be articulated in a concise and clear manner that will be available resource for policy makers, administrators and political representatives. At present the PCL is taking up public hearings beginning with Madhya Pradesh. Members of People's Commission are Mr S C Behar and Mr K B Saxena. (EKTA PARISHAD's LETTER 030904)

STOP PRESS: Karcham Wangtoo Public Hearing on Nov 9, '04 The struggle of affected people and SANDRP has lead to some progress in case of the proposed 1000 MW Karcham Wangtoo HEP in Himachal Pradesh. The fresh public hearing for the project will be held on Nov 9, '04 at Tapri and Karcham. The affected people had earlier boycotted the public hearing in Oct. 2003. Following the critique of the KWP EIA, the Himachal Pradesh Council for Science, Technology and Environment had asked the NEERI and the company to make necessary changes in the EIA and the same has now been changed and put up at www.hpppcb.nic.in Some portions of the EIA has also been made available in Hindi and village people have also received the advance notice of the public hearing. The adequacy of the fresh EIA and adequacy of the Hindi translations will have to be checked now before the public hearing.

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"Forests play a vital role in regulating water supply and maintaining pristine water quality in British Columbia. The relatively small percentage of the provincial forest land base that is within community watersheds combined with the high proportion of the population that depends on this type of water supply indicates the high value of forests in watersheds"

The Ministry of Forests, British Columbia, Canada: (Ecosystems of BC, Feb '91, p 73)

"The more dams a country has, the more water it has."

Pakistan Water and Power Minister, (Daily Times, 290704)

Dams, Rivers & People

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Published, Printed, Owned & Edited by Himanshu Thakkar at 86-D, AD Block, Shalimar Bagh, Delhi - 110 088, Printed at Sun Shine Process, B-103/5, Naraina Indl. Area Phase - I, New Delhi - 110 028