



Lead Piece

Does the MEF have the capacity, the will or even the intentions of assuring compliance?

The continuing farce called conditional clearances

The Union Ministry of Environment and Forests (MEF) gives clearances to hundreds of projects every month under the Environment Protection Act and Environment Impact Assessment (EIA) Notification of Sept 2006. All of these clearances are statutory clearances. The conditions are supposed to be legally binding. Moreover all of these projects are supposed to have EIAs which are supposed to include Social Impact Assessments and also the Environment Management Plan (EMP). Each of the EMP is supposed to include Rehabilitation Plan. Again the implementation of these plans are mandatory under law, the clearances are given only on the basis of the EIA and EMP.

If the project involves diversion of forest land, it will require another clearance under the Forest Conservation Act, 1980. That clearance also comes with another set of statutory conditions. These are mainly about compensatory afforestation, catchment area treatment and minimum loss of forest, flora and fauna. In addition if the project requires land from or near the wildlife protected areas, it needs additional clearance under the Wildlife Protection Act, with additional conditions. All of these clearances are required as per law and there has been no question from any rational quarter that these clearances are not required.

If the project developer does not abide by any of the conditions and managements plans, consequences are supposed to follow. So a plausible inference would be that the MEF would have the capacity, will and intention of ensuring compliance with the plans and conditions of various clearances that it gives. It is also understood that since implementation of all of these conditions costs substantial amount money, and also involved efforts, the developer would not adhere to them if these conditions were not to be adhered to.

There are essentially two ways through which MEF can know what is happening on ground at the project sites. One of the conditions of the clearances and also a requirement under the EIA notification is supposed to be that the developer should be sending six monthly compliance reports to the MEF. It is thus hoped that the MEF would be ensuring that these reports are submitted and that someone in the MEF would be going through them and comparing the implementation with the EIA-EMP, conditions vis-a-vis construction of the project and

also comparing with the previous compliance reports and checking if the progress in the implementation of the measures is as required. If the reports do not come in time or if the implementation is not as required, one expects the MEF to take steps to correct the situation.

What is happening on ground? First let us look at the situation with respect to the first step, namely submission of six monthly compliance reports, as required under the law. Several instances repeated over the years show that the MEF is least bothered even when the developer does not submit compliance reports. The most glaring case is that of the Polavaram project in Andhra Pradesh, one of the largest multi purpose projects of India, which was given environment clearance on Oct 25, 2005. In response to an RTI by SANDRP, MEF said in Nov 2010, over five years after the clearance, that the project has not submitted a single compliance report. But the MEF had done nothing about this! MEF did not respond even after SANDRP pointed this out to the minister.

Another glaring example is that of Singoli Bhatwari hydropower project under construction on Mandakini River in Uttarakhand. The Project was accorded environment clearance on Aug 24, 2007. When an MEF team visited the site in May end, 2010, it said in its report that almost three years after the clearance the project developer had not submitted a single compliance report. Again the MEF had taken no steps regarding this violation.

Continued on p 2

INDEX

The continuing farce called conditional clearances	1
Global Crop Water Footprint	3
Violation of environment law by Four Himachal HEPs: Will MEF act?	4
River Schools can make the future look bright	14
How debris affect Himalayan Glaciers	17
MEF to AP: Implement Forest Rights Act in Polavaram Area	18
BBMB refuses to provide irrigation water to Bhakra oustees	19
Sardar Sarovar Land scam: IAS officers taken to High Court	20
Review all Arunachal Dams: Assam CM to PM	21
Ranganadi downstream affected demand compensation	22
TN HC: shut down Tirupur units or polluting Noyyal River	24
Sand mining of rivers in Uttar Pradesh goes to High Court	25
Padyatra against Par Tapi Narmada River Link Proposal	29
US report says climate change can stir Indo Pak conflict	30
Writings on the Wall	32

Continued from p 1

In case of the 1000 MW Karcham Wangtoo hydropower project, the MEF regional office visit reports of Jan & May '09 say that the regular submission of the 6-monthly compliance report is yet to be ensured. That was the situation 4 years after the project was given environment clearance. But no steps were taken by the MEF. It does not require great amount of capacity on the part of MEF to ensure that compliance reports are submitted on time and to take steps when they are not submitted. The importance of this cannot be over emphasised. If there is no compliance report, the MEF cannot even start knowing what is happening on ground at the project site. So this fundamental anomaly in the functioning of the MEF shows that the MEF does not even have the will or the intention of ensuring compliance.

Let us see the second means available for the MEF to ensure compliance. The ministry has six regional offices spread over different regions of the country. The scientists from these offices are supposed to visit the projects in their respective regions and monitor what is happening on ground. Based on these visits they are supposed to submit reports & suggest corrective steps.

Here it may be noted that the MEF website has a special section "Proponent Compliance Report" at: <http://164.100.194.5:8081/ssdn1/ComplianceApprovedReport1994.do?sessionid=8E61A1938DFB9F7909DBAFDBEA1A0417>. However, when you go to the site, you will find that there are NO compliance reports on the site. This is in complete violation of the EIA notification dated Sept 14, 2006, section 10(ii) (renumbered as section 10(iii) after the Dec 2009 amendment) of the same clearly states, "The latest such compliance report shall also be displayed on the web site of the concerned regulatory authority." We have written to the Minister about this violation of the law by the MEF on Feb 7, 2011 and await his response.

In reality, each region has such huge number of projects and the staff strength is so little that the officers are able to visit even big project sites hardly once in five years. They rarely are able to visit smaller projects. For example, in case of Polavaram dam in Andhra Pradesh, in over five years since the project got clearance, the regional office had visited the project site just once. There were no site visits in case of Singoli Bhatwari in almost three years since clearance. In fact how pathetic is the situation on ground in this regard has come out with facts and figures in the 2009 report *Calling the Bluff* from Kalpavriksh Environment Action Group.

The report and other evidence shows that the MEF regional offices are never able to go to the project sites on a surprise visit. All their project visits are pre-planned in consultation with the project developer. This thus takes away the possibility of MEF getting to know what is the reality on ground, since in pre-planned meetings, there is a lot of possibility of the project developer *preparing the ground* for the inspection and showing only what he wants to show. In many cases, even when the field visit

reports point out non compliance, the MEF has not taken necessary corrective steps.

Thus the track record of the MEF and its regional offices show that the ministry, while facing some genuine concerns in terms of capacity to make frequent and surprise visits, has shown little will or intention to ensure compliance of its clearance conditions.

There is a third way for the MEF to know ground realities. This is through the numerous representations from communities, NGOs, individuals and media reports. If the ministry had the will & the intentions to ensure compliance, the least the MEF could have done is to take prompt cognisance of these and take necessary steps where violations are thus reported. These steps could include show cause notices, visits of officials to the project sites and in case of wilful, worst and repeated violations, to serve stop work notices. One expects the regulator to take some steps in this direction. However, past experience shows that even when violations are brought to the notice of the MEF, they have rarely taken appropriate action in line with the nature of violations.

One can cite many instances in this regard. The latest one is the photographic evidence of violations of four hydropower projects presented in this issue of *Dams, Rivers & People*. This was sent to the minister and key officials of the MEF on Jan 31, 2011, we have yet to hear from them. Similar evidence was also sent to the ministry earlier on Feb 17, 2010, without any action. Even when the MEF appointed committee reports violations as in case of Phata Byung & Singoli Bhatwari HEPs in Uttarakhand, the ministry did not take appropriate action. Similarly when the MEF regional office highlighted the repeated violations by the Karcham Wangtoo developers in Jan and May 2009, the MEF did not take any action. One can list many more instances, but these should suffice that even when the violations have been brought to the notice of the MEF, they have not taken action.

In some other cases, the MEF position is farcical. For example when we asked under RTI, who will ensure that the developer releases minimum water flow in the downstream area, the ministry replied that the developer himself will ensure that! But why should the developer bother about this when such releases would reduce his power generation at least in 9 lean season months?

What all this shows is that currently, the Union Environment Ministry is giving environment clearances to hundreds of projects every single month, without having the capacity, the will or even the intentions of ensuring compliance. As we wrote to the current minister in the first month as minister, one way out would be for the ministry to involve local communities in monitoring and ensuring compliance through a legally empowered mechanism. There can be many other possible steps the ministry can take if it has the intentions of ensuring compliance with the law of the land.

SANDRP

Global Crop Water Footprint

The global water footprint related to crop production in the period 1996-2005 was 7404 billion cubic meters per year (78% green, 12% blue, 10% grey). A large total water footprint was calculated for wheat (1087 Gm³/yr), rice (992 Gm³/yr) and maize (770 Gm³/yr). At country level, the total water footprint was largest for India (1047 Gm³/yr), China (967 Gm³/yr) and the USA (826 Gm³/yr). A relatively large total blue water footprint as a result of crop production is observed in the Indus river basin (117 Gm³/yr) and the Ganges river basin (108 Gm³/yr). The two basins together account for 25% of the blue water footprint related to global crop production. Globally, rain-fed agriculture has a water footprint of 5173 Gm³/yr (91% green, 9% grey); irrigated agriculture has a water footprint of 2230 Gm³/yr (48% green, 40% blue and 12% grey). For most of the crops, the global average consumptive water footprint (blue plus green water footprint) per ton of crop was lower for irrigated crops than for rain-fed crops. If one considers the water footprint per kcal, the picture changes. Vegetables and fruits, which have a relatively small water footprint per kg but a low caloric content, have a relatively large water footprint per kcal.

These figures include the water consumed and not water withdrawn. The grid based dynamic water balance model used in this study computes a daily soil water balance and calculates crop water requirements, actual crop water use (both green and blue) and actual yields. The model is applied at a global scale using a resolution of 5 by 5 arc minute. It estimated the water footprint of 146 primary crops.

The global average green water footprint related to crop production was 5771 Gm³/yr, of which rainfed crops use 4701 Gm³/yr and irrigated crops use 1070 Gm³/yr. For most of the crops, the contribution of green water footprint toward the total consumptive water footprint (green and blue) is more than 80%. Among the major crops, the contribution of green water toward the total consumptive water footprint is lowest for date palm (43%) and cotton (64%). The global average blue water footprint related to crop production was 899 Gm³/yr. Wheat (204 Gm³/yr) and rice (202 Gm³/yr) have large blue water footprint together accounting for 45% of the global blue water footprint. The grey water footprint related to the use of nitrogen fertilizer in crops cultivation was 733 Gm³/yr. Wheat (123 Gm³/yr), maize (122 Gm³/yr) and rice (111 Gm³/yr) have large grey water footprint together accounting for about 56% of the global grey water footprint.

The largest green water footprints are found in these six countries: India (716 Gm³/yr), China (624 Gm³/yr), the USA (612 Gm³/yr), Russia (305 Gm³/yr), Brazil (304 Gm³/yr) and Indonesia (286 Gm³/yr). At sub-national level (state or province level), the largest green water footprints can be found in Uttar Pradesh (88 Gm³/yr), Maharashtra (86 Gm³/yr), Karnataka (65 Gm³/yr), Andhra Pradesh (61 Gm³/yr), and Madhya

Pradesh (60 Gm³/yr), all in India. The largest blue water footprints were calculated for India (231 Gm³/yr), China (119 Gm³/yr), the USA (96 Gm³/yr) and Pakistan (74 Gm³/yr). These four countries together account for 58% of the total blue water footprint related to crop production. At sub-national level, the largest blue water footprints were found in: Uttar Pradesh (59 Gm³/yr) and Madhya Pradesh (24 Gm³/yr) in India; Punjab (50 Gm³/yr) in Pakistan; and California (20 Gm³/yr) in the USA. Large grey water footprints were estimated for China (224 Gm³/yr), the USA (118 Gm³/yr) and India (99 Gm³/yr). The figures for some river basins relevant to India from the study are given below:

River basin	Water footprint of crop production Gm ³ /yr			
	Green	blue	grey	total
Ganges	260	108	39	408
Indus	102	117	34	253
Krishna	89	21	8.7	118
INDIA	716	231.4	99.4	1047

Note: The Ganga and Indus basin figures include the trans-boundary basin areas.

The water footprint of a product is defined as the total volume of freshwater that is used to produce the product. The blue water footprint refers to the volume of surface and groundwater consumed (evaporated) as a result of the production of a good; the green water footprint refers to the rainwater consumed. The grey water footprint of a product refers to the volume of freshwater that is required to assimilate the load of pollutants (required for assimilation of nitrogen only from fertilisers leaving out relevant pollutants such as phosphorus and pesticides in this study) based on existing ambient water quality standards.

Limitations The study suffers from a number of limitations due to the assumptions it had to make about the fraction of irrigated crops in different states, the cropping cycles, soil types, water holding capacity of actual farmed lands, sufficient irrigation for crop growth, differing fertilizer use among different classes of farmers, in attention to inter cropping and multi-cropping practices, among others.

(www.waterfootprint.org Dec 2010)

**PHOTOGRAPHIC EVIDENCE: HYDROPOWER PROJECTS OF HIMACHAL PRADESH
VIOLATING ENVIRONMENTAL NORMS WITH IMPUNITY****WILL THE MEF ACT WITH REQUIRED URGENCY?**

Here we are showing the photographic evidence of violation of the environment norms by the hydropower projects in Himachal Pradesh. The photographs are recent, as the dates below show. We have sent this to the Union Minister of Environment and Forests Shri Jairam Ramesh so that he can take appropriate action. We have not yet received any response from the ministry. So much for the will or the intention of the ministry in ensuring compliance with the environmental norms.

Karcham Wangtoo HEP This 1000 MW installed capacity hydropower project is under construction on Sutlej River in Kinnaur district in Himachal Pradesh. The environment clearance to the project was given by MEF on Nov 9, 2005. Below we are giving photos from this project site showing the violations that this project is indulging in muck disposal into the river.

1. Photo showing how the muck is flowing into the Sutlej River. Photo taken a few km downstream from the dam site on Nov 10 2010



2. Photo 2 showing how the muck is flowing into the Sutlej River. Photo taken a few km downstream from the dam site on Nov 10 2010



3. Photo 3 showing how the muck is flowing into the Sutlej river. Photo taken a few km downstream from the dam site on Nov 10 2010



4. Photo 4 showing how the muck is flowing into the Sutlej river. Photo taken a few km downstream from the dam site on Nov 10 2010



5. Photo 5 showing how the muck is flowing into the Baspa River. Photo taken a about 1 km upstream from the confluence of Baspa river with Sutlej river on Nov 20 2010



6. Photo 6 showing how the muck is flowing into the Baspa River. Photo taken about 1 km upstream from the confluence of Baspa River with Sutlej on Nov 20 2010



7. Photo showing how the local water source at Choling has dried up due to the construction of the Karcham Wangtoo project, Photo taken on Nov 19 2010



8. Photo showing the broken flood protection wall along the Sutlej River downstream of Karcham Wangtoo dam is broken leading to muck flowing into the river. Photo taken on Nov 10 2010



9. Photo showing poor housing for workers at the Karcham Wangtoo project site. Photo taken on Nov 10 2010



10. Photo showing how children are playing (or working? In which case it would be additional violation) close to the Sutlej River downstream from the Karcham Wangtoo Dam site. Photo taken on Nov 10 2010. The children of the workers are in dangerous situation here, being so close to the river known to be rapid, turbulent and changing flow patterns. The project developers should have ensured proper place for the children of the construction workers.



Baspa II Project This 300 MW hydropower project of the same group of companies, namely JP Associates was completed in 2003 and is operating on the Baspa River, a tributary of Sutlej River.

11. Photo showing how the river bed of Baspa River is completely dry 5 km downstream of the Baspa dam. Photo taken on Nov 12 2010. This means that the Baspa project is releasing no water downstream from the dam, in complete violation of the Environment norms.



Nathpa Jakhri Project This 1500 MW installed capacity (India's largest operating hydropower project) is located on the Sutlej river just downstream of the under construction powerhouse of the Karcham Wangtoo Project. The Nathpa Jakhri project of Sutlej Jal Vidyut Nigam Limited (a joint venture of GOI and HP govt) is operating since 2005.

12. Photo showing how the Sutlej River is dry about 10 downstream from the dam site of Nathpa Jakhri Project. Photo taken on Nov 19 2010. This means that the Nathpa Jakhri dam is not releasing any water downstream from the dam in complete violation of Environmental norms.



13 Photo showing the Nathpa Jakhri dam, it is clear that there is no minimum flow being released from the dam, contrary to the requirements of environment norms. Photo taken Nov 10 2010



Rampur Hydropower Project This 412 MW hydropower project (funded by the World Bank) is under construction immediately downstream from the power house of the Nathpa Jakhri project. The project of SJVN was given environment clearance on March 31 2006.

14. Photo showing how the muck is flowing into the Sutlej River. Photo taken a few km downstream from the dam site on Nov 9 2010. This dumping of muck into the river is completely illegal and against the environmental norms.



15. This is not the first time Rampur project has been indulging in this. Here is an earlier photo showing how the muck is flowing from the project into the Sutlej River, the photo taken at the adit near the Bahava panchayat in June 2009. When this was pointed out to the World Bank in early 2010, they responded that the damaged wall was reconstructed in three months!!



These are the latest photos that we have just got, showing clear evidence of the violations by the four projects. The Ministry itself does not seem to have the capacity (and the will?) to monitor and ensure compliance to its own conditions and environmental norms. We request the Ministry to take urgent steps when the evidence is presented.

This is not the first time such evidence of violation of these projects has been sent to the MEF. On Feb 17, 2010 we had written to the minister, "As indicated by numerous newspaper reports (two were copied to the minister) and also direct feedback from the area, we learn that a large number of people have died at the site of under construction Karcham Wangtoo Hydropower project. It is clear from available information so far that the deaths have occurred basically because of the negligence of the project authority. This negligence also indicates violation of the conditions under which MEF gave clearance to the project on Nov 9, 2005, including condition regarding safety of the labourers, safe blasting, precautions against landslides and so on. The latest incident happened on Feb 15, 2010, but another landslide had happened at the same location two days earlier. All this indicates violations of the basic safety norms and conditions of environment clearance. Here it may be noted that your regional office's reports of visit to the project site in January and April 2009 clearly show that the project authority has yet to adhere to the basic requirements, including formation of multidisciplinary committee for overseeing EMP measures, submission of six monthly reports, a monitoring committee for R&R measures, among others. The violations of all these are very serious in nature and your ministry has taken no action in this regard." The Minister did not respond to that letter.

Moreover in July 2010, the one man committee headed by Avay Shukla, the additional Chief Secretary of Himachal Pradesh in its report to the Himachal High Court had said that under construction Karcham Wangtoo and Rampur hydropower projects were violating a large number of environmental norms. The MEF has been made a party in that case taken up *suo motto* by the HP High Court, so the MEF knows about that evidence too. It may be added here that the muck so dumped into Sutlej ultimately ends up in the downstream Bhakra Dam, considered lifeline of Northern Indian states of Punjab, Haryana and Rajasthan, reducing the water storage capacity of Bhakra.

River schools can make the future look bright!

Of all the positive elements and assets, the most important ally of our environment could be the future generation. Seeds of sustainability and sensitivity when sown at a young age, can blossom into responsible individuals. And you need to be in touch with the land to sow those seeds. The Central and State Boards of Education in India have made Environmental Science a compulsory subject for schools and junior colleges. But Environmental Sciences is not to be studied in the classrooms alone. For example, in order to understand the erosion and deposition processes of a river, students need to visit a river bend in their city and in order to instil a lifelong aversion to plastic bags, a landfill and dumping grounds need to be seen.

However, many students, lucky enough to be residing near beautiful rivers and forests are now getting a chance to study the entire riverine ecosystem, its interconnections, and the after effects of dams and diversions with experts who work on these rivers. This article is a small attempt of show casing some of these inspiring initiatives around the country and if the readers are aware of more such efforts, we would be glad to feature them.

Schools for Rivers, River Research Centre, Kerala



Above: Children studying a map of the Chalakudy Basin
Photo: RRC

The RRC started its ongoing 'Schools for Rivers' program in August 2009, with an aim of sensitizing the students about rivers and river conservation. Six schools and more than a hundred students have participated in the program, which includes classroom lectures, treks and a 3-day river camp, where the students get a chance to study and celebrate their river.

During the trip to the latest River Camp to Valparai in the Anamalai Hills via the Chalakudy – Anamalai forest road, students travelled along the length of river Chalakudy, which is threatened by the proposed Athirappilly Hydroelectric Project near the famous Athirappilly falls. The students could see for themselves Athirappilly falls, Athirappilly dam site, Vazachal tribal settlements,

proposed site for tribal relocation, etc. During the camp, students also organised a road campaign to help stop the accidental deaths of Lion Tailed Macaques (an endangered species of monkeys, endemic to the Western Ghat Forests) that cross the hill roads. The fallout of this activity has been that the Forest Department and River Research Centre, with the help of schools working in this Program, are holding such student campaigns on Saturdays and Sundays wherein the students talk with the travellers about driving with care in the forest section and banning the use of plastic.

Rustic Valley Tours, Gomukh Trust, Pune Gomukh



Above: Students exploring urban streams in Pune
Photo: Parineeta Dandekar



Above: Students Stream Monitoring Committee at Wavoshi Village
Photo: Amol Galewar

Trust has been organising River interaction camps for students since the past nine years. These 'Rustic Valley Tours' take the students on a journey to the origin of Rivers Mula, Mutha in the Mulshi valley and River Bhima at Bhimashanker.

From here, students get to see the different facets of the river, its uses to different communities, the habitats it provides for different species and the impact of growing anthropogenic pressures on its fragile balance. Students have their breakfast and lunch in a local village, thus providing some income to a local family. A local guide is hired, who is also a student and she shares the wonders of her village and her river with her city friends. Through a single river trip, an entire Chapter on river ecology, pollution control, aesthetics, social sciences, history and mythology is experienced.



Above: Students observing their stream and structures **Photo:** Amol Gajewar

Nirmal Ganga Abhiyaan, Ecological Society, Pune and Konkan In 2007, The Ecological Society, Pune announced a competition for villages in Maharashtra, to draw up a plan for ecological restoration of their streams or rivers. What started as a competition turned into a vibrant process of stream restoration which was spearheaded by schools from about nine villages.



Above: A group of students desilting the river **Photo:** G-J College

The program began with an introduction to stream and river ecosystems and led to practical restoration work including bank stabilisation, creation of riparian corridors, construction of loose boulder structures, making check lists of stream assessment in dry and wet regions, evolving a unique environment education campaign with the participating schools and students. Most of the fieldwork is currently being done by students and while working with the experts, they are also learning interesting things about their stream, ecology, agriculture, social sciences, etc.

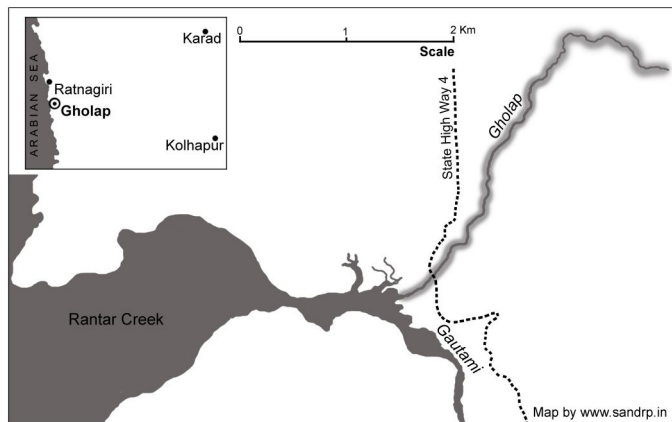
Desilting the River Gholap, Ratnagiri Perhaps the most dramatic tale of students working for rivers has been witnessed by village Gholap in the Ratnagiri District, Maharashtra. The village consists of 24 *waadis* or settlements with a population of 3500 and a small river 'Gholap' flows through the village for about 14 kilometres. Due to continuous erosion from the surrounding hill slopes and the intrinsic nature of lateritic basalt found in konkan, the river bed has been heavily silted and the 7 Kolhapur type weirs along the river now hold only silt.



Above: The silted Gholap River and weir before and after desilting **Photo:** G-J College

On 26 Dec, 2010, around 870 students volunteering for the National Service Scheme from the states of Rajasthan, Gujarat, Madhya Pradesh, Karnataka, Goa, Diu Daman and Andhra Pradesh came to this village

Gholap for their year-end camp. They were initially viewed with suspicion and unease as it was difficult to accommodate such a large number of students in the Waadis and the villagers were not sure of what exactly the students could achieve.



On the 27 Dec morning, students entered the river and started taking out silt manually. Hundreds of *paatis* (buckets) of silt was removed from the river bed. On the 27th evening, the first KT Wier on the upstream was cleaned completely. And almost miraculously, by the next evening, it was brimming with water!

Looking at the increasing water level (and also the huge quantity of silt), a Mumbai based charitable trust agreed to hire two JCBs to help the students in the desilting work. Groups consisting of 60-70 students each worked on the entire stretch of the river to clear the clogged springs. By the time the students finished their job, the river and the weirs had ample water in them. Water levels rose in wells near the river. After noticing that the efforts of the students are leading to dramatic rise in water levels of wells, villagers also pitched in and nearly 1200 people in total worked on the Gholap River for 6 days, to remove more than 500 truckloads of silt.

According to Dr. Surendra Thakurdesai, Professor of Geography and NSS coordinator for Gogate-Joglekar College, water levels in the downstream wells increased by an average of 1.5 feet in these 7 days. Entire stretch of the river, which earlier held very little water in intermittent puddles, became a flowing river again. So much so that in order to desilt the downstream weirs, students actually had to build 9 temporary stone weirs across the river to contain the water and complete their work! Traditional Irrigation channels drawing water from

the river, made along the river and criss-crossing the riparian fields also started flowing.

Some of the silt was deposited on the lateritic plateaus of the village and has been secured with small impoundments built around it. Many dumper-loads of silt were also deposited in private fields and farms of the villagers. Students carried out bank stabilisation and pitching works for which considerable silt was used. Through the Shri Charitable Trust (a Trust based in Mumbai, working in the Pawas area where the shrine of Swamy Swarupanand is located) a part of this silt was transported along the Ratnagiri-Pawas Road and was used for tree plantation.

Mr. Ulhas Paranjpe of the Jalvardhini Pratishthan, Karjat, trained students the basics of watershed management. For example, a simple contour marker was made on site, by making an equilateral triangle using three sticks, with a stone suspended from an apex. Similarly, the students learned to calculate river flow simply by floating a leaf in one of the irrigation channel and measuring the cross section of the channel and distance covered by the leaf in one minute. When this author visited Gholap River and the team on 23 Jan 2011, it was difficult to believe that this same river was choked with silt exactly a month back. I also visited a village jackwell where the recorded water level had risen by 1.5 feet. The NSS students who accompanied me to the river were assisting the survey team and Mr. Paranjpe in recording water levels in the riparian wells.

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The entities which made this happen were the Gogate-Joglekar College, Ratnagiri through the National Service Scheme (the College was the official host of the NSS group), Shri Charitable Trust, which has been working on plantations and rural employment generation activities around Ratnagiri and Orange County Foundation. As the work

progressed, villagers and tourists also chipped in.

According to Vilas Gogate of the Orange County Foundation, students who had to skip their baths in the first couple of days due to water shortage in the village actually swam in the river waters on the last day! There cannot be a stronger and a more lasting lesson on watershed management, river restoration or community participation than this. Students who experience such initiatives will carry the seeds of hope and possibilities with them wherever they go.

With more such initiatives happening in our schools, colleges and universities, there could be some hope for the future of our rivers.

Parineeta Dandekar

CLIMATE CHANGE & WATER SECTOR

How crops are affected by Climate Change Some impacts of climate change on crops already observed in India include:

- **Coffee** In the south, erratic rain patterns are causing the coffee crop to fruit twice and sometimes three times, resulting in inferior beans. The Coffee Board of India has instituted an insurance program to help coffee growers in Karnataka deal with the declining yields.
- **Rice in Kerala** In the Kuttanad region of Kerala in the southwest, considered the state's Rice Bowl, heavy rains delayed the normal sowing season, which begins in October, until December, which triggered an onslaught of pests.
- **Grapes** Changing weather patterns are also affecting the cultivation cycles of the western state of Maharashtra's 444,790 acres of grapes. Mahendra Sahir, president of the Maharashtra State Grape Growers Association, says rainfall in November for the last three to four years has delayed pruning and thus harvesting, making it increasingly difficult to meet deadlines for supplies of grapes sent to the European Union.
- **Tea** D P Maheshwari, president of the Tea Association of India, said incessant rain, followed by a severe attack of pests, caused a massive crop loss in 2010. Maheshwari estimated that some tea plantations throughout the country suffered losses up to 20 to 30 percent on the previous year's output. Of particular concern is the change in the quality of Assam tea, known for its strong brew. The Assam region, in the northeastern part of the country, accounts for 52 percent of India's tea production. Last year the area saw a drop of 33 million pounds of Assam tea, compared to the previous year. (UPI 010211)

Four Himalayan nations to develop adaptation plan

Governments of four Eastern Himalayan states have announced plans that will lead to the development of a unified climate change adaptation plan for the mountainous region. Delegates from Bangladesh, Bhutan, India and Nepal met in Thimpu on January 27-28 to start planning 10-year national and regional adaptation frameworks that will be tabled later this year. Key concerns to be addressed by the decade-long framework include ensuring food, water and energy security as well as maintaining high levels of biodiversity in the region's temperate and alpine forests. Working groups based in each of the four nations will hammer out details on food, water, biodiversity and energy targets over the following months. Final plans will be tabled at the Climate Summit for a Living Himalayas scheduled for 14 October 2011 in Thimpu, Bhutan.

The Eastern Himalayas encompass Bhutan, northeast India, Nepal, southern parts of Tibet and the north of Myanmar. The area is home to the world's highest

mountains and deepest gorges, subtropical jungles, temperate forests, grasslands, savannas and alpine meadows. Its glaciers and ice fields feed some of the world's most important river systems, on which millions of people depend. It is also home to thousands of rare species of plants and animals, including snow leopards and one-horned rhinos.

This diverse region is extremely vulnerable to variations in temperature, rainfall, and extreme weather events. Projections indicate that climate change will not only amplify human impacts but also have far-reaching consequences on the region's biodiversity, freshwater resources and the socio-economic conditions of the people living there. Increasing human activities are also threatening much of the Himalayan region's biological wealth. Reckless use of natural resources is degrading forest ecosystems, reducing their ability to regenerate and provide essential goods and services. The Climate Summit for a Living Himalayas is supported by WWF, the MacArthur Foundation, International Centre for Integrated Mountain Development (ICIMOD), UNDP, FAO and the International Fund for Agricultural Development (IFAD). (WWF International 280111)

SRI taken up as a climate friendly technique in Bihar

The Bihar Chief Minister Nitish Kumar has said, "The entire world is undergoing this climate change problem but India seems to be least bothered about it and not charting out long-term strategies to combat this challenge. Eastern states, particularly Bihar, still have potential to increase production. What is needed is evolving new scientific methods to enhance foodgrains production". The CM praised the efforts of Jyoti Devi of Fatehpur block in Gaya who has turned vast barren land into green belt with SRI technique and other indigenous methods. He said Jyoti, now JD(U)'s MLA from Barachatti, and other farmers like Ramsevak of Dobhi (Gaya) and Kisan Chachi of Muzaffarpur are role models who innovated new methods of farming and increased production. Agriculture Production Commissioner A K Sinha said in the first phase SRI technique would be implemented in 3.5 lakh ha of land. Currently, Bihar is producing around 50 lakh tonnes of rice, which could be increased to 65 lakh tonnes with the new technique. "This will herald a new Green Revolution," Sinha said. (The Times of India 280111)

How debris affect Himalayan Glaciers More than 50% of the glaciers in the Karakoram region of the northwest Himalayas are stable or are advancing, the scientists have reported in Nature Geoscience journal. Dirk Scherler and Manfred Strecker from Potsdam University, Germany and Bodo Bookhagen from the University of California Santa Barbara used remoter sensing images to track frontal changes and surface velocities of glaciers in the greater Himalaya between 2000 and 2008. They studied 286 glaciers between the Hindu Kush on the Afghan-Pakistan border to Bhutan, taking in six areas.

The research paper argues that the variations are a result of differences in the debris cover enjoyed by different glaciers – a factor that has so far been neglected while studying the impact of climate change on glaciers. The scientists found that more than 65% of all Himalayan glaciers studied were retreating. However, the glaciers in the Tibetan plateau, where debris cover is largely absent, are retreating fastest. The glaciers in the western Himalayan Mountains experience the highest retreat rates of up to 8 m per year. Glaciers in the central Himalaya region are relatively better covered by debris & typically have stable fronts, the scientists said.

Bookhagen explained the difference between debris and coverage by soot, and dust on glaciers. "The debris cover has the opposite effect of soot and dust on glaciers. Debris coverage thickness above 2 cm, 'shields' the glacier and prevents melting. This is the case for many Himalayan glaciers that are surrounded by towering mountains that almost continuously shed pebbles, debris, and rocks onto the glacier." Thus the glaciers in the steep Himalayas are also affected by debris, in addition to temperature and precipitation and have less predictable and un-uniform response. (The Hindustan Times 250111, London Telegraph 270111)

CWC work under National Water Mission The Central Water Commission Annual Report for the year 2009-10 notes, "Reassessment of basin water using latest technologies including remote sensing, satellite data, mathematical modeling with observed data and review of data collection networks of various hydrological parameters are a few important activities which have been taken up by CWC under National Water Mission."

In pursuance to this, discussions were held with National Remote Sensing Centre for formulating the methodology for assessment of water resources using satellite remote sensing data based geo-spatial approach. It has been decided that the study would first be taken up on a pilot basis for two river basins namely Godavari and Brahmani-Baitarni and then depending upon the outcome of the study for these two basins, further course of action would be decided.

In this regard, a working group consisting of the officers of CWC and NRSC has been created to discuss the methodology to be adopted. Based upon the progress of working group, the different aspects have been discussed in three meetings chaired by Member (WP&P) at New Delhi with the group and accepted by the committee headed by Member (WP&P), CWC for the study of pilot basins. (CWC Annual Report 2009-10)

Expert: clear flood prone zones to avoid damages Even as Queensland (Australia) is reeling under record floods and the United Nations is urging the world to prepare for 'Man-Made' Disasters, an international disaster expert, Ed Blakely, professor of urban policy at

Sydney University says "Some areas of Queensland are so flood-prone they should never have been built on and should be declared no-go zones." The professor, who ran the recovery of New Orleans after hurricane Katrina and was involved in New York's recovery after 9/11, warned: 'We shouldn't regard this [flood] as freakish. We should assume they are going to occur because of climate change. They are becoming increasingly frequent and far more devastating.' (<http://www.iwapublishing.com/template.cfm?name=news616>) At least nine people have died and 72 are missing after flash flooding hit the city of Toowoomba and the Lockyer valley. Queensland's government also announced that the state's worst floods in 50 years have had a devastating effect on the road network, with a final bill possibly worse than the combined bills of 1974 and 1991 floods. (<http://www.iwapublishing.com/template.cfm?name=news598>)

The warning of respecting the flood plains of rivers and no go areas are very important for India too. We have been building in our riverbeds and on flood plains, with impunity. While the Hon'ble LG of Delhi has declared a moratorium on any new construction in the river bed / flood plain of river Yamuna in Delhi and a 'stop work' and 'vacate the river bed immediately', order has been given to the relevant authorities by the Delhi Urban Arts Commission, the DTC bus parking, the residential complex of DMRC and several other structures built for the common Wealth games, 2010, are still standing in the Yamuna River in New Delhi. The Yamuna Jiye Abhiyaan, a network in New Delhi has been sending daily reminders about this to all the concerned authorities since Dec 25, 2010.

2009 emission data *The Guardian* has reported CO2 emissions data for 2009, from the US EIA. Most countries are down about 7-8%, including the US, Russia, other countries in Europe, etc due to ongoing recession. Yet the overall emissions have remained almost unchanged, at little over 30 Billion Tonnes (BT) (almost double the Earth's current absorption capacity). China has a spectacular rise, up 13% at 7.7 BT and way ahead of second-placed US (5.4 BT, down from 5.8 BT the previous year). India is third at BT.

DAMS

MEF to AP: Implement FRA in Polavaram area Andhra Pradesh Chief Minister N Kiran Kumar Reddy has been asked to look into complaints about the non-implementation of the Forest Rights Act in the Polavaram project area. Environment Minister Jairam Ramesh had written to Kiran Kumar's predecessor K Rosaiah on Nov 22, 2010. The lack of response from the state government prompted Ramesh to send a reminder on Jan 25, 2011. No benefit will accrue to the Telangana region from this project, instead vast tracts of Telangana will be submerged. Political parties across the spectrum in Telangana have opposed the project. Over 250

villages will be affected by the project, and more than 200,000 persons are to be displaced. Most of the population in the area is tribal. This makes the non-implementation of the crucial forest rights law an extremely serious problem. The complaints were sent by SANDRP and others to Ramesh and Forest Advisory Committee in Sept 2010. (The Times of India 300111, The Economic Times 310111)

HC questions GOG over rights of Ukai displaced

The First Bench of Gujarat High Court comprising Chief Justice SJ Mukhopadhyay and Justice KM Thaker has on Feb 3, 2011 questioned the government authorities on an issue of violation of fundamental rights of residents of villages that were displaced due to the Ukai dam constructed over Tapi river in South Gujarat in 1972. The petitioner, Fulsingbhai Gamit, in his petition filed through his advocate SH Iyer, has raised the issue of violation of more than 2500 persons residing in a colony over two decades and still not having any access to their rights. The petition stated that for the purpose of the construction of the reservoir, residents from four villages Mogalbara, Limbasiti, Pethapur and Nanchhal were displaced. The entire area of re-settlement of all four villages is now known as Chikhli. The petitioner said that this place has not been given the status of 'village' as contemplated by Article 243(g) of the Constitution of India. "Their names do not figure in the voters list of any of the nearby village Panchayats as contemplated by the Gujarat Panchayats Act, 1993 and consequently, they are being deprived of the statutory benefits flowing from the various statutes like Part IX of the Constitution of the India". The matter will now be heard on March 8. (Lawetahnews.com 030211)

BBMB refuses irrigation water to Bhakra oustees

Bhakra oustees from Una district have demanded irrigation from the Bhakra reservoir, but BBMB has refused to provide water to the dam oustees. There are about 1,281 families from Una district who lost their land to the Bhakra Dam project in 1960s. Most of their families were allotted land in Hisar district of Haryana at that time. However, due to various reasons like revenue anomalies and misfit with culture these families did not move to lands allotted to them in Haryana. Most of them belong to the Kutlehar Assembly constituency in Una district. Since the people have lost most of their fertile lands to Gobind Sagar lake of the Bhakra Dam, the Kutlehar is now one of the most backward areas of Una district. Bhakra oustees Bhakra oustees said though they were living on the banks of the biggest man-made fresh water lake of the country, their fields remain dry.

"Our entire agriculture is dependent on rain. We have urged the state government to install lift irrigation schemes from Gobind Sagar lake for our fields so that we are not at the mercy of nature, the oustees said. The oustees had also demanded that since they had sacrificed their land for the dam, the Bhakra Beas Management Board or the state government should also

give them power at subsidised rates. They had also put up their demands before the committee formed by the state government to look into the demands of the Bhakra oustees. The state government had requested the BBMB for the installation of the lift irrigation scheme from Gobind Sagar lake in the Kutlehar area several times, but the latter had declined the request. The BBMB is declining the request as most of the Kutlehar area of Una district falls near the live storage area. (The Tribune 060211)

Dams for Mumbai are destroying Tansa WLS

In June 2008, Additional Forest Conservator of the 355 sq. kilometre Tansa Wildlife Sanctuary near Mumbai said in an interview (Indian Express 150608) that the Sanctuary holds only one leopard and the main reason for the dwindling wildlife is encroachments. What he forgot to highlight was that the Sanctuary and its neighbouring forests are home to two dams that supply water to Mumbai. The Tansa and Vaitarna dams are located inside the sanctuary whereas the upcoming Middle Vaitarna lies very close to the Sanctuary and two new dams which are planned will again deforest considerable part of the neighbouring forests and sanctuary. The Tansa sanctuary is located in four talukas of Thane district — Jawhar, Wada, Mokhada and Shahpur.

According to Mr. Punam Sigavi, Thane's honorary Wildlife Warden, the Middle Vaitarna Project which is now nearing its completion, resulted in the felling of more than one lakh trees. At the same time, Mumbai is now planning to 'fast track' two projects which will lead to deforestation over thousands of hectares near and inside. The Gargai and Pinjal dams planned on the respective rivers are expected to cause huge deforestation. Officials in Brihanmumbai Municipal Corp are more worried only about the 'delay' this will cause in getting the requisite environmental clearances.

The Gargai dam is to provide up to 227 million litres of water per day to the city. A tributary of the Pinjal river, Gargai is located in Ogade, 120 km from Mumbai, and runs through a thick forest area. "Due to the vast forest cover, we will have to carry out deforestation on a large scale for building the dam and it will require a go-ahead even from the Central ministry of environment and forest," says Chief Engineer, Civic Water Supply Projects Department, A. Pednekar. He also said that though the exact dam location has not been finalised, the actual dam site will be in the forest area and a significant portion of a wildlife reserve sanctuary will be affected. (Indian Express 261210)

River pollution a threat to Kalpasar proposal

The Gujarat government has put Kalpasar project on fast track, however along with a number of other problems, there are pollution related obstructions that are now delaying the final report of the project. (For a detailed critique of Kalpasar project see: http://www.sandrp.in/dams/Why_Modis_54000_crore_legacy_project_

KALPSAR is doomed Nov 2010.pdf.) Water from all its source rivers is polluted. It has been reported that, Dr. M.S.Patel, Secretary of Kalpasar Project has sent a letter to state's industry department Principal Secretary Shri Maheshwar Sahu on 8 Dec, 2010 stating that the six rivers that meet Arabian sea in Kalpasar project's proposed area are creating so much pollution that the issue is creating problem when the department is in process to prepare the final report. The letter states that the quality of dam water would be very important in Kalpasar project, because it would be used for drinking, irrigation and industrial purposes. The industries located on the banks of the rivers are dumping pollution to the rivers which ultimately mixes in the sea. GIDC does not take enough steps to prevent this and thus the body is not helpful. (Gujaratmoney.com 04111)

Subarnarekha gets NBWL green signal The National Board for Wild Life has agreed to let the Jharkhand state government utilise forest land for the almost three-decade-old Subarnarekha Multi Purpose project in Jharkhand's East Singhbhum district. The decision was taken at a meeting of the NBWL in New Delhi on January 24, 2011. The SMP is now included under the Centre's Accelerated Irrigation Benefits Project that is expected to make the Union Ministry of Water Resources and its counterpart of this state share its revised cost of Rs 6613.74 crore. (Indian Express 260111)

SARDAR SAROVAR

Land for afforestation diverted by SSP officials Several senior IAS officers have been accused of grabbing land belonging to Sardar Sarovar Narmada Nigam Limited in this case. The court indicated that if facts do not emerge clear soon, an independent agency may be asked to probe the matter. In the Aalloa case, after roping in the Centre as a party on Jan 31, 2011, Gujarat high court bench headed by the Chief Justice on Feb 7, 2011 sought to know if the revenue records of the 92-ha plot near Gandhinagar had been tempered with. The land, between Aalloa and Pindarda villages, was given by the state govt on lease to SSNNL for afforestation. The high court asked the state government to produce the notification published in the gazette on Oct 16, 1998, about the consolidation scheme. The chief justice has sought clarification about the ownership of the disputed land which is plot number 219 on survey number 355. During the hearing, the judges also warned the respondent Aalloa Non-Trading Association not to confuse the court any further.

Gujarat's IAS officers are accused of constructing sprawling private bungalows on government land. The court decision to make the Union of India a party came after suspicion was raised on survey done by local revenue authority in the land grabbing case. Earlier the court had ordered a survey of the area by Gujarat Revenue department, but the petitioner alleged that the

revenue authority's survey was not correct as the official conducting the survey actually worked under the senior bureaucrats, who have allegedly encroached upon the government land.

At present, the court is relying on measurements taken by district inspector of land records. After the petitioner, Ghanshyamsinh Waghela, raised questions on credibility of the state measurement agency, the high court directed the Centre to become a party to resolve the issue. The allegations in this petition are that some bureaucrats have fraudulently changed revenue records to show certain parts of the SSNNL plot as private land. The plot was allotted to SSNNL in 1993 for afforestation on the Sabarmati riverbank. The land was not returned back to the state government in 2007 as per terms of the contract to green the area. The high court has kept further hearing on March 16 with instruction to the respondents to clear the confusion about title of the land in a short submission, or else they should be ready to face an independent inquiry. (The Times of India 010211, 080211)

GROUNDWATER

Draft of AP Community Managed Groundwater Bill

The bill seeks the setting up of Groundwater councils at the panchayat and district level. The Panchayat Groundwater Council is tasked with coming up with the Village Water Security Plan, and has some legal powers to enforce norms. However there are no guidelines as to how to regulate groundwater use and one wonders how many Gram Panchayats have capacity to create and enforce good water security plans. (India water portal 270111)

Water table falls alarmingly in Punjab The water table in 9,058 sq km of central Punjab has gone down by more than 20 metres in the past one decade and the trend is continuing with some districts registering a fall despite a good monsoon last year. The latest study of water-level data for both the pre- and post-monsoon periods collected by the Agriculture Department paints a grim picture. The water table has gone down all over the state in the one-year period from June 2009 to June 2010. Some areas have even registered a fall in the post-monsoon period last year.

The June 2009 to June 2010 data shows that central Punjab has been most affected. The districts of Sangrur, Barnala and Moga, which are known as the granary of Punjab, have shown alarming dips in their water table. Moga has registered a dip of 1.75 metres followed by Sangrur with a fall of 1.50 metres and Barnala with a dip of 1.25 metres. Other districts affected in central Punjab include Ludhiana that witnessed a fall of 84 cm.

What is even more alarming is that areas in central Punjab have witnessed a dip in the water table even post-monsoon last year. This is the time when the water table invariably goes up, says the Agriculture

Department Director, Dr Balwinder Singh Sidhu. Water readings taken in October 2010 that have been tabulated now reveal that Barnala witnessed a drop in its water table by 91 cm followed by Moga by 70 cm and Sangrur by 63 cm. He says post-monsoon recordings taken for the last 10 years have shown an annual fall of more than one metre in central Punjab districts. The Agriculture Director, Dr BS Sidhu, says the area under hybrid maize, which is being looked as an alternative to paddy, is stagnating at 1.50 lakh hectares.

Out of total area of 3737 sq km in Sangrur, 2609 sq km has seen fall of over 20 m in last decade. The figures for Patiala are 2488 out of 3303 sq km and that for Moga are 885 out of 2172 sq km. (The Tribune 030211)

HYDRO PROJECTS

NHPC sales, profits down The NHPC has reported 48 per cent decline in net profit to Rs 300 crores for the quarter ended Dec 31, 2010. The company had recorded a net profit of Rs 581.61 crore for the quarter ended Dec 31, 2009. On being asked about the reason for drop in profit, NHPC Chairman and Managing Director A B L Srivastava said, "In the corresponding quarter (Dec 31, 2009) we received arrears for the revised tariff of our Dulhasti and Chamera power projects." The company received Rs 500 crore arrears for the revised tariff of the 390 MW Dulhasti and 231 MW Chamera projects. The net sales of the company nosedived % to Rs 709 crore in the quarter ended Dec 31, 2010, compared to Rs 1,213.4 crore in the same quarter of the previous financial year. (PTI 280111)

Inflated Water figures used for Athirappilly The Chalakudy River Protection Forum has criticised the Central Water Commission's assessment of water availability for the proposed Athirappilly hydel project. The CWC has not looked into the amount of electricity that can be generated by the proposed project and reduced flow on account of water diversion to Idamalayar said S. P. Ravi, Forum convener. He added that the CWC's assessment about water availability would not justify the Athirappilly Project. According to the Detailed Project Report by the Kerala State Electricity Board in 1999, the water availability was 1,269 MCM (Million Cubic Meters). It was 1,169 MCM according to a DPR in 2003. In its review in 2005, the CWC pegged water availability at 1,056 MCM. The figures cited in each review show that water availability has been consistently going down, he said. The Environment Impact Assessment by Water and Power Consultancy Services Ltd was done on the basis of water availability of 1,269 MCM. A reduction by nearly 20 per cent will totally alter the scenario especially regarding the water needs downstream. He said the KSEB had furnished different figures for powerhouse discharge from Peringalkuthu for the same period. (The Hindu 130111)

Private hydro to be under tariff-based bidding The Power Ministry has proposed a key change in the national tariff policy that would make it mandatory for private players to participate in bidding for the allocation of hydro power projects. The move is aimed at creating a level playing field between private and public sector companies and keeping in check electricity tariff by restraining private players from offering upfront premium to state governments to bag projects. The policy change is part of a Cabinet note being finalised by the ministry. Tariff-based bidding has become mandatory in the power sector from January 6, 2011 but private players are still exempted from tariff based bidding for hydro projects. At present, hydro projects are offered to companies under a memorandum of understanding route. Under this, companies are expected to offer host states some free power and sign power purchase agreement with other beneficiary states. While Public Sector Hydro Undertakings are not allowed to pay upfront premium for the allocation of projects, private companies are exempt from this and many companies like Reliance Power, Lanco, etc. have bagged projects earlier as they offered premium and additional free power to the state governments. (Financial express 170111)

Ratle HEP on Chenab Pre Construction work of the Ratle Hydroelectric Project on Chenab River in Kistwar District of J and K has begun. Secretary Power said that G V K Hydro Pvt Ltd, which was allotted the project on tariff based bidding, had hired a foreign engineering consultant for the 690 MW project. The Rs 5,000 crore HEP has been allotted on a Build, Own, Operate and Transfer basis for a period of 35 years. The survey for identifying the land for the project has started. As per the agreement the state is expected to get 15% electricity free while having the first right of refusal to purchase the remaining energy at Rs 1.4/unit. The Union Power Ministry and Central Electricity Authority have accorded preliminary clearances. It involves construction of over 120 m high concrete dam and over 400 ha land would be submerged. (Greaterkashmir.com 290111)

HYDRO PROJECTS IN NORTH EAST INDIA

Review all Arunachal dams: Assam CM to PM The Assam chief minister Tarun Gogoi has written to Prime Minister Manmohan Singh asking for a review of the over 100 dams planned in Arunachal Pradesh and a comprehensive assessment of their impact downstream on Assam. Gogoi warned that the 100-plus dams Arunachal Pradesh is planning would lead to "flash floods in the downstream areas of Assam when there is sudden and excessive discharge of waters after heavy rainfall". His letter to the PM comes after environment minister Jairam Ramesh wrote to the PM alerting him to the dangers of the Arunachal dams. The PM has twice cancelled meetings of a group of ministers on the issue as a reaction to Ramesh's letter. (The Times of India 050111)

Ranganadi HEP d/s affected demand compensation

The Lichi Cher Ranganadi Project Affected Area Management Committee has demanded immediate compensation for downstream impacts due to the operation of the existing 405 MW Ranganadi Hydro Electric project. In a memorandum to the visiting parliamentary committee on welfare of ST and SC, the affected people said that many domestic animals and paddy fields have been washed away by the flood water since the construction of RHEP in 2003. It demanded NEEPCO and other competent authorities compensate the families who lost their paddy fields and domestic animal. Demanding that MoU signed between the state Govt and NEEPCO on RHEP should be made public, the memorandum said the downstream people of the project had submitted a number of memorandums to the NEEPCO for solution to their grievances, but the corporation did not pay heed. The Committee also demanded anti-erosion measures at flood vulnerable areas, rehabilitation of villages likely to be affected by dam breakage in future, group C and D category jobs, free electricity supply for downstream affected people and release of at least 30 per cent of Ranganadi river water to maintain ecological balance in the downstream area. It further said that a high-level team of the state Govt and RHEP should visit the downstream area of the project to verify the ground reality. The memorandum said that its demands be fulfilled within a month's time to avoid any stir. (The Arunachal Times 080211)

NHPC gets ok for Tawang I & II HEPs The expert appraisal panel on River Valley and Hydropower projects has in its meeting on Jan 21-22, 2011 cleared NHPC Ltd.'s plans to set up two hydroelectric projects on Tawang Chu, a tributary of the Brahmaputra in north-east India. The projects, to be located in Arunachal Pradesh state, will have a total generation capacity of 1,400 MW and are likely to cost 112.4 billion rupees (\$2.47 billion). (EAC minutes 210111)

HYDRO PROJECTS IN HIMACHAL PRADESH

HC asks JP pay for violations of guidelines Even as the Karcham Wangtoo Hydroelectric project on Sutlej in Himachal Pradesh is flouting norms of muck disposal and its Baspa Hydropower project is killing the river by not releasing any water in the river downstream from the dam, another anomaly has come into light. Jaypee Powergrid Limited has been ordered by the Himachal Pradesh High Court to pay compensation of Rs. 50,000/- to aggrieved petitioners for violation of procedure while laying a high voltage "Karcham-Wangtoo- Abdulapur Transmission Line" in the Rajagrh area of Sirmour District, Himachal Pradesh. The HC bench noted, "A bare reading of these provisions (Telegraph Act, 1885) clearly shows that the authority gets the powers of the sovereign to enter into any immovable property of any person. When such great powers are vested in an

authority it is expected to exercise restraint in the exercise of such powers. A private Company seeking such wide powers must comply in letter and spirit with the procedure prescribed. They cannot be heard to argue that the procedure is only in the nature of guidelines and not mandatory." Jaypee Powergrid Limited did not give the prescribed two months notice to the villagers to file objections before laying the lines, nor did it publish the news in two newspapers, the petitioners also said that names of the villages were not mentioned in the notice, adding to confusion. Significantly, the Bench has further noted that not only should such a notice be published in local newspapers, but unconventional methods like beating of drums, handing leaflets, etc. must be used to ensure that the news is conveyed to far flung places. The court also recommended CERC to modify the guidelines to ensure that illiterate and poor villagers in remote areas are made aware of their rights of filing objections and they are heard at a place which is convenient to them. (Law et al. News Network 030211)

SC: Centre neglected HP interests in BBMB projects

While hearing the long pending suit of Himachal Pradesh regarding its share in Bhakra Beas Projects, the Supreme Court has reprimanded the centre for neglecting the interests of HP. It said centre was non serious and should have been unbiased with respect to other states while hearing the suite filed in 1996. HP argued that it was getting no share from the Pong dam, was getting only 15 MW from the 990 MW Pandoh project and only 2.5% from the Bhakra Nangal Dam. The advocate for the centre blamed the disputing states of Punjab, Haryana and Rajasthan for the dispute. HP has demanded that it should get 12% free power from all the Bhakra Beas projects, as per the policy centre has been following for hydro projects since 1990. The SC bench noted that the centre did not have the "courtesy of holding even a single meeting" of substance with the disputing states since the court's order on April 29, 2010. (The Tribune 130111)

IRRIGATION

CAG again indicts AIBP The Comptroller and Auditor General of India has done a fresh review of the Govt of India's scheme Accelerated Irrigation Benefits Programme, started in 1996-97. The latest guidelines for the scheme were approved by the Union Cabinet in Dec 2006, according to which the centre will provide grants for last mile irrigation projects that have been approved by the Planning Commission and that can be completed in 4 working seasons. Some of the key CAG findings in its report for the year ending on March 31, 2009 are:

- AIBP has failed to deliver benefits of providing water to farmers despite 13 years of funding and release of nearly Rs 26000 crore of GoI assistance! (Rs 36372.7352 by March 2010)
- Audit shows a wasteful expenditure of Rs 403.8 crore

- Rs 186 crore of undue benefit to contractors
- Poor management of contracts in 8 Major, 3 Minor and 28 Minor test checked in various states. CWC/ MoWR does nothing but sanctions funds.
- No data on actual utilization of Irrigation potential created was furnished by Ministry of Water Resources/ CWC. MoWR merely intends to fund large scale projects without ensuring irrigation benefits to farmers.
- Notwithstanding numerous changes in scope, nature of AIBP, the status of completion of projects under AIBP continued to be poor.
- Not implemented in phases as required in guidelines
- No Utilization Certificate & Statement of Expenditure, yet funds were released to State Govts by Govt of India
- Non-conversion of Grant to Loan. 166 crore for Narmada Canal should have converted into Loan as the project not completed by due date. Did not happen.
- Inadequate monitoring by Central Water Commission. Only 57 out of 8699 MI projects were monitored.

These are only a few of the critical observations of CAG based on limited audit. This is the second audit of AIBP by the CAG (the first one was in 2003-04) where CAG has strongly criticised AIBP, but there is no impact on AIBP. In response to SANDRP RTI to MWR and CWC, both replied that there has been no change in working of the AIBP since the CAG audits. The mid term appraisal of the Planning Commission for the 11th Five Year Plan has strongly criticised the AIBP performance. There is little reason for continuation of this scheme. (CAG performance audit of AIBP, 2010 for year ending 2007-08)

New Report on Water Logging and Salinisation After many years the govt has come out with a new report on assessment of water logging and salinisation in Irrigation Commands of Major and Medium irrigation Projects of India. Titled "Assessment of Waterlogging and Salt and / or Alkaline affected Soils in the Commands of all Major and Medium Irrigation Projects in the Country using Satellite Remote Sensing", the report dated January 2009 is the result of joint efforts of by the Jodhpur based Regional Remote Sensing Service Centre of the Indian Space Research Organisation and the Central Water Commission.

The major conclusion of the report is: "Satellite derived information synergistically combined with soil analysis data and ground intelligence is capable of provide near real time estimate of waterlogging and salinity/alkalinity at a cheaper cost and timely manner. Moreover the spatial extent and their dynamic nature could also be monitored."

"Total 1701 irrigation commands (major and medium) covering 88895.620 Th ha (27.04% of the geographical area of the country) have been studied under this project. Number of major and medium irrigation commands are 429 and 1272, respectively. Total waterlogged areas based on remote sensing techniques for the year 2003-2005 within major and medium

irrigation commands in the country is 1719.279 Th ha which is 1.93% of the command area. Perennial waterlogging covers 173.145 Th ha where as seasonal waterlogging covers 1546.134 Th ha. On the other hand, salt affected area occupies 1034.541 Th ha which is 1.16% of major and medium command areas studied. Total 16558 soil samples were collected and analysed to identify salinity/alkalinity along with severity classes. From ground water table rise point of view, 0.14% of the area under major and medium irrigation commands occupies most critical (upto 1 m) category in pre monsoon season which increased to 1.95% in post monsoon season. The critical category (1-2 m) which occupies 2.75% of command area during pre monsoon increased to 12.35% in post monsoon. There was no significant correlation between surface waterlogged areas and ground water rise in most of the places."

Strangely, the executive summary of the report says, "Since independence the area under irrigation through major and medium commands has been increased from 9.70 m ha to 55 m ha during 10th Five Year Plan." In reality, 55 m ha is more likely to be the TOTAL irrigated area in India in March 2007 at the end of 10th Plan and not under M&M commands as the report notes. The Net Irrigated Area under M&M projects in March 2007 was 16.87 m ha. It is shocking that the report commits such gross blunders when the Central Water Commission, India's premier technical body on water resources is co author of the report. The merits of the report become somewhat doubtful considering such gross errors. The report is available at: <http://india-wris.nrsc.gov.in/php/reports/INTRODUCTION.pdf>.

538-crore scheme for Gang Canals repair The Union Government has sanctioned a scheme worth Rs. 538 crore for the Gang Canal Project region in northern Rajasthan. The five-year scheme is likely to cover 1.83 lakh hectares command (coming to mind blowing Rs 29400 per Ha) by 2014-15. The scheme - for which the Irrigated Area Development and Water Utilisation Department would shortly launch the work - is to benefit areas of the five tehsils of Sriganganagar district. The Gang Canal gets the Sutlej-Beas river waters from the Harike Barrage in the neighbouring Punjab. The irrigation capacity in Padampur, Karanpur, Anupgarh, Raisinghnagar and Sriganganagar tehsils is promised to improve by 62 % (looks very high figure, it is doubtful if such level of improvement is possible) by plugging the loopholes in the supply system and by constructing durable distributaries. (The Hindu 270111)

WATER POLLUTION

Punjab to clean rivers by Nov 2011 The Punjab government has promised that the Sutlej and Beas rivers will be cleaned up by Nov 2011. The effluents from the 45 cities on the banks of these rivers and the industrial units will be diverted for irrigation after treatment. (The Tribune 28011)

Tamil Nadu High Court: Shut down polluting Tirupur dyeing units

Taking strong exception to the continuing discharge of effluents that have poisoned Noyyal river, the Madras High Court on Jan 28 2011 ordered that all dyeing and bleaching factories in and around Tiruppur, Tamil Nadu's textile hub that supplies hosiery and knitwear to much of India, be immediately closed down. A Bench of Chief Justice MY Eqbal and Justice TS Sivagnanam, hearing a petition filed by Noyyal River Ayacutdars Protection Association, also directed the State Electricity Board to cut power supply to these units. There are hundreds of small and medium-sized dyeing and bleaching units in and around Tiruppur.

"We are fully convinced that unless stringent and deterrent action is taken by ordering immediate closure, the water of Noyyal River cannot be made free from the poisonous substances discharged from these units," the court said. The units cannot operate until they achieve "zero-liquid discharge" as directed by the court four years ago, the High Court said. All units should be inspected and reports prepared individually for each of them. These reports will be the basis for assessing whether they should be granted permission to operate again, the High Court added.

Pointing out that the authorities had failed to take action on the court's previous directions on the issue in 2003 and 2006, the plea sought strict action against the officials concerned. The court directed the Pollution Control Board to furnish names of its officers who were in-charge during the period the units failed to comply with the orders of the court "so that appropriate action might also be taken against them." The court will now hear the matter on March 21.

One of the desperate proposals that the Dyers Association of Tirupur have come up with is to buy twice the quantity of freshwater and dilute the effluent with it in the ratio of 2:1 (two parts freshwater and one part effluents), hoping that this will reduce the concentration of pollutants to 2100 PPM of Total Dissolved Solids. The DAT has asked the permission of the Tamil Nadu Pollution Control Board to release effluents with TDS of 2100 PPM. However, there is big question as to where will so much freshwater will come from in the parched Tamil Nadu.

This will be a stop gap arrangement till a pipeline is built to take the effluents to the sea. The proposed Marine Discharge Project has been approved by the 13th Finance Commission. In the meantime, some of the Dyeing units have requested the High Court to allow them to start operations since they are in a position to run the units on the basis of Zero Liquid Discharge as required by the HC. (Indian Express 290111, Financial Express 050211)

WATER SUPPLY & SANITATION

Bangalore plans for multiple mega dams The Bangalore Water Supply and Sewerage Board has planned multiple mega dams for its future water supply. The plans include a proposal for a dam at Mekedatu (45 tmc capacity with hydropower component with available fall of 470 m), transfer 30 tmc from Alamatti dam (distance 400 km), 12 tmc of which will be for Bangalore and rest for en-route areas, divert west flowing rivers like Nethravathi and Kumaradhara to get 6 tmc water from a distance of 360 km. The current Unaccounted for Water in the city is 36%, the city plans to reduce it to 16-24% with replacement of old pipelines. The city also hopes to get additional 500 MLD from Cauvery Stage IV Phase II. (Deccan Herald 161210)

Delhi (again) tries to go for privatisation The Delhi Jal Board has contracted Infrastructure Leasing and Financial Services Ltd and Stup Consultants to work out the details for the privatisation of distribution of water and collection of Revenue for the Nangloi area in Delhi. Similarly the Rathi Consultants have been hired for the Malviyanagar area. Once the plans are ready, tenders will be invited in a couple of months for hiring firms for a period of 10 years. Delhi had tried to push for privatisation of water under World Bank advocacy in the past but failed to go ahead after strong public pressure. The plans are likely to face similar opposition now too. (The Hindu 280111)

LOCAL WATER BODIES

SC orders conservation of common lands In a noteworthy order on January 28, 2011, the Supreme Court of India has said (CIVIL APPEAL NO.1132 /2011 @ SLP(C) No. 3109/ 2011, Jaspal Singh and Others Vs State of Punjab and others) that common lands of the villages cannot be diverted for other purposes. It has particularly stressed on preservation of Rural Water Bodies. We are reproducing below the paragraphs 17-24 of the said order.

17. In this connection we wish to say that our ancestors were not fools. They knew that in certain years there may be droughts or water shortages for some other reason, and water was also required for cattle to drink and bathe in etc. Hence they built a pond attached to every village, a tank attached to every temple, etc. These were their traditional rain water harvesting methods, which served them for thousands of years.

18. Over the last few decades, however, most of these ponds in our country have been filled with earth and built upon by greedy people, thus destroying their original character. This has contributed to the water shortages in the country.

19. Also, many ponds are auctioned off at throw away prices to businessmen for fisheries in collusion with

authorities/Gram Panchayat officials, and even this money collected from these so called auctions are not used for the common benefit of the villagers but misappropriated by certain individuals. The time has come when these malpractices must stop.

20. In Uttar Pradesh the U.P. Consolidation of Holdings Act, 1954 was widely misused to usurp Gram Sabha lands either with connivance of the Consolidation Authorities, or by forging orders purported to have been passed by Consolidation Officers in the long past so that they may not be compared with the original revenue record showing the land as Gram Sabha land, as these revenue records had been weeded out. Similar may have been the practice in other States. The time has now come to review all these orders by which the common village land has been grabbed by such fraudulent practices.

21. For the reasons given above there is no merit in this appeal and it is dismissed.

22. Before parting with this case we give directions to all the State Governments in the country that they should prepare schemes for eviction of illegal/unauthorized occupants of Gram Sabha/Gram Panchayat/Poramboke/ Shamlat land and these must be restored to the Gram Sabha/Gram Panchayat for the common use of villagers of the village. For this purpose the Chief Secretaries of all State Governments/Union Territories in India are directed to do the needful, taking the help of other senior officers of the Governments. The said scheme should provide for the speedy eviction of such illegal occupant, after giving him a show cause notice and a brief hearing. Long duration of such illegal occupation or huge expenditure in making constructions thereon or political connections must not be treated as a justification for condoning this illegal act or for regularizing the illegal possession. Regularization should only be permitted in exceptional cases e.g. where lease has been granted under some Government notification to landless labourers or members of Scheduled Castes/Scheduled Tribes, or where there is already a school, dispensary or other public utility on the land.

23. Let a copy of this order be sent to all Chief Secretaries of all States and Union Territories in India who will ensure strict and prompt compliance of this order and submit compliance reports to this Court from time to time.

24. Although we have dismissed this appeal, it shall be listed before this Court from time to time (on dates fixed by us), so that we can monitor implementation of our directions herein. List again before us on 3.5.2011 on which date all Chief Secretaries in India will submit their reports.

(For full order see:
<http://xa.yimg.com/kq/groups/25557646/1647036175/name/Common%20land%20supreme%20court%20judgment.pdf>)

Bareilly: over 200 talabs go missing According to Non Govt Organisation Jagar, Bareilly city was supposed to have 212 water bodies, out of which only three could be identified on ground: Choudhary Talab, Axar Vihar Talab and Delapir Talab. Even out of these three, the Choudhary and Delapir talabs are facing encroachment and dumping of urban waste. (Jansatta 281210)

RIVERS

International River Foundation, Australia

International River Foundation (www.riverfoundation.org.au) is working in partnerships around the world to drive the protection and restoration of the world's rivers, lakes and wetlands. As an international and 'not-for-profit' organization, the IRF tries to make meaningful and measurable impacts on individuals and communities by helping them restore and sustainably manage their rivers for improved health, ecological, economic, and social outcomes. IRF provides groups and individuals with the opportunity to be part of the solution and to establish an enduring legacy. The IRF's journey began with a vision of the City of Brisbane and the then Lord Mayor Jim Soorley to put best practice for restoration of rivers onto the global agenda. The vision extended to a prestigious River prize to complement International River symposium, an internationally recognized forum of river management.

The first Thiess River prize awarded in 1999 was an International award valued at Aus \$100,000. A National Aus \$25,000 Prize was introduced in 2001. International River symposium was, at that time part of River festival, an annual celebration of Brisbane's people, culture and environment. There have been 22 River prize winners and over 60 River prize finalists since the establishment of the River prize in 1999. Today, River prize is one of the prestigious environmental awards. The Thiess International River prize (Aus \$350,000) and Australian National River prizes (Aus \$ 200,000) are awarded every year at the International River Symposium. Recently the IRF have appointed 10 Ambassadors worldwide. Dr Shrikant D Limaye, from Pune, India (E-mail: limaye@vsnl.com) is the Ambassador from south Asia. The Applications for the International River Prize of 2011 are now being accepted. Please visit the website http://riverfoundation.org.au/riverprize_entering.php. The last date is 31st March 2011. (This note was sent by Dr SD Limaye for publication in Dams, Rivers & People)

Sand mining of rivers in UP goes to HC Miners are seeing Environment Ministry bias for UP Miners, which is continuing its work without the mandatory environmental clearances. Unabated illegal mining of minor minerals such as sand, bajri and boulders from the riverbed is going on in Saharanpur and Muzaffarnagar districts. While about 30 lease holders in UP have applied to the ministry for environment clearance, the UP government

has taken a stand in a PIL being heard by the Allahabad High Court that no prior environmental clearance was required for minor minerals found in the riverbed. Earlier, the High Court had appointed a committee to verify the allegations that illegal mining was taking place in Saharanpur. The committee supported the allegations. In September 2010, the court issued notices to the state government and the ministry.

The ministry supported the contention of the petitioner that prior environment clearance was mandatory and only after it was obtained a state government could execute the mining lease. It also informed the court that it had prescribed the terms of reference (TOR) to 31 mining projects in Saharanpur and one project in Muzaffarnagar district. The ministry further told the court that the permission to operate a mine merely on the basis of the TOR was not automatic. However, the UP government took the stand that the Environment Impact Assessment notification was not applicable to the minor minerals found in the riverbed. The least the ministry can do in the UP case is to cancel the TORs issued to the miners in that state and stop considering their applications for environment clearance till they stop illegal mining. (The Tribune 050211)

River to be diverted for Mumbai airport The Maharashtra govt has asked the Central Water and Power Research Station in Khadakwasla to submit detailed report for diverting Ulwe River for building the runway at the proposed Navi Mumbai airport. The govt earlier proposed to divert the Gadhi River, but this was not allowed by the Union Ministry of Environment and Forests, but it has allowed diversion of Ulwe River and also filling up one of the channels of the Gadhi River. (Indian Express 130111)

LIVING RIVERS with freshwater flows

Environmental flows for non-riverine inland wetlands The Scientific and Technical Review Panel of the Ramsar Convention on Wetlands are looking for information on studies on the water needs of non-riverine wetlands. Mike Acreman and Stefano Barchiesi are to produce the annotated bibliography of existing/recent work on water needs of non-riverine wetlands. Please send information to StefanoBarchiesi@eflownet.org.

Environmental Flows for non-perennial rivers The University of the Free State, South Africa is involved in a Water Research Commission Project on EF for non-perennial rivers where they are trying to develop a method. Problems identified are that perennial river methods do not work in non-perennial rivers due to highly variable flow. Please send information to WatsonM.SCI@ufs.ac.za.

Report In a joint report (from World Wide Fund for Nature and The Nature Conservancy) titled *"The*

Implementation Challenge: Taking stock of government policies to protect and restore e-flows" authors Tom Le Quesne, Eloise Kendy and Derek Weston lament that though nearly all countries in the world have developed a policy for e-flows, the environmental flows provisions *"remain at the stage of policy and debate rather than implementation"*. Unfortunately for India, we have no policy and very little debate on the issue, forget implementation. New hydropower projects and dams are being planned rapidly and are severely affecting the riverine ecosystems and the goods and services they provide to the communities.

The report is an interesting exercise in analysing the progress of e-flows research and implementation and various country policies, identifying obstacles in implementing e-flows provisions and finally, proving guidelines for overcoming these obstacles. According to the authors, *"This report takes stock of international progress toward achieving effective environmental flow policies, and conveys the emerging lessons."* Interestingly, Chapter 2: *'How far have we come'*, opens with India, circa 1838, when the British authorities devised a plan to divert the flow of Ganga in a canal, with an aim of increasing revenue, and like today, even 170 years back, this was vehemently opposed by Indians. A compromise was reached wherein 400 cusecs freshwater flowed in the natural river bed of Ganga, unhindered.

Predictably, the identified obstacles to e-flow implementation include: *"lack of political will and stakeholder support; insufficient resources and capacity in water management and allocation institutions generally, and for the delivery of those functions tasked with assessing and enforcing environmental requirements; and, institutional barriers and conflicts of interest."*

Some of the suggested guidelines to overcome the difficulties include:

- Undertake a phased approach to implementation.
- Use available opportunities
- Start as early in the decision process as possible.
- Develop a clear statement of objectives for environmental flows policy based on an inclusive, transparent and well-communicated process.
- Develop a clear participatory institutional framework involving local communities, including mechanism for consequences when mandatory norms are violated.
- Conduct proof-of-concept pilot projects.

The report analyses a number of case studies from Lesotho to Mexico to Philippines, the problems they are facing and solutions they are trying out. It is useful for anyone interested in environmental flows, governance, ecology and water management. And if our authorities are serious about implementing e-flow provisions, the report holds some important lessons. (www.eflownet.org News Volume 7 Issue 1)

WETLANDS

Haryana Panel for Wetlands “To ensure conservation of wetlands in the State, Haryana Government will shortly take up a project and will also constitute a State-level experts committee for the same,” a senior official of the Haryana Government said. “The Haryana Government has hired a Kolkata-based agency which will execute the project,” said the official. Wetlands cover over 270.4 sq km in the State. The State has over 1800 wetlands, out of which 1395 are natural wetlands covering 153.25 sq km which is 56.6 per cent of the total wetland area in Haryana. The man-made wetlands, 450 in numeral, cover an area of over 118 sq km. Hissar, Rohtak, Karnal, Sirsa, Gurgaon, Faridabad, Sonipat & Jind Districts have maximum number of wetlands.

Sultanpur Lake Bird Sanctuary, Bhindawas Lake were also identified under National wetland conservation programme as these water bodies. Bhindawas Lake with over 1000 acres is the largest wetland of the State. A recent study in Haryana stated that the places with maximum industrialisation in the State are on the verge of losing water resources due to degradation of wetlands as a prime factor. (Pioneer 020211)

MEF to identify wetlands under notification Over the next few months Union Environment ministry intends to proactively work with States to implement the Wetlands (Conservation and Management) Rules, 2010. “We will prepare a list of wetlands with the information we already have and the help of WWF and other organisations and send it to the States,” Jairam Ramesh said. “States will have to respond within two months,” he added.

“States may not want to notify any of the wetlands that we identify,” he admitted, “But we have got the Central rules, I am prepared for confrontation with the States because we have reached a stage when we cannot allow the wetlands to be taken over in the name of development.” Mr. Ramesh listed various recent threats. “There is the Nirma plant in the wetlands in Gujarat, there are the power plants in Sriakulam [in Andhra Pradesh], and there are high-rises threatening the wetlands of Coimbatore...Wetlands have an environmental and social value that must be protected,” he emphasised. Several State officials pointed out that many communities depend on the wetlands for their livelihood, and the Minister promised that existing claimants would be protected. “But this is only for livelihood, there can be no commercial activities permitted in the wetlands,” he said. (The Hindu 030211)

AGRICULTURE

GOI's mad rush for GM Crops India is planning to replace the rules under the Environment Protection Act with a Biotechnology Regulatory Authority of India (Brai) Act. This will give genetically-modified organisms

(GMOs) fast-track approvals and throw its critics into jail. The recently-appointed minister of science and technology, Ashwini Kumar, has announced that the Government of India is planning to introduce four bills in the upcoming Budget session — Brai Bill, DNA Profiling Bill, Regional Centre for Biotechnology Bill and the Public Funded R&D (Protection and Utilisation of Public Funded Intellectual Property) Bill. The Prime Minister's Office has already written to various state governments suggesting partnerships with corporations in the seed sector. This rush to push genetically-modified and patented seeds ignores evidence that GMOs will not be able to provide food security. A failed and hazardous technology such as genetic engineering can only be pushed through dictatorial means. GMOs and democracy cannot co-exist. GMO-free food and agriculture is necessary for creating food security and defending food democracy. (Vandana Shiva in Deccan Chronicle 020211)

Govt allows export of 5 lakh T sugar The Govt of India has allowed export of 5 lakh T of sugar this year as the production of sugar this year is likely to be 24.5 MT, up from 18.8 MT last year. The consumption this year is expected to be 23 MT. The govt has distributed the export quota among the 661 sugar mills. The export would imply India is exporting Billions of litres of (virtual) water. (The Hindu 040111)

Agri Growth target at 4% for the 12th Plan The Planning Commission has fixed the agriculture growth target for the 12th plan (2012-17) at 4%, same that was in 10th and the 11th plan and which has not been achieved in 9th and 10th plan and is not likely to be achieved in the 11th plan. The last time when Indian agriculture saw growth in excess of 4% was in 8th plan when a growth of 4.72% was achieved. In the 9th and 10th plans, the achievement was 2.44 and 2.13% respectively. In the current five year plan the first three years saw agriculture growth rate of 4.7, 1.6 and 0.2%. Even with an assumption of 6% of growth in current year (2010-11), the maximum that is likely to be achieved in 11th plan is 3.5%. Here the moot point is how much of the 6% growth rate in the current year is due to inflation? (The Tribune 050211)

Greenpeace on decline in Soil Quality Decline in soil organic matter both in quality and quantity, is one of the major reasons for soil degradation and the resultant stagnation and decline in yields. However, our own grass root level experiences showed that support for ecological fertilization is either minimal, scattered or inaccessible even though there are several schemes of the Central Government such as Rashtriya Krishi Vikas Yojana, National Project on Management of Soil Health & Fertility, National Project on Organic Farming etc which has components for supporting the same. While the Government spent Rs. 49,980 crore during 2009-10 to promote chemical fertilizers, the total amount spent on

other four schemes together is Rs. 5374.72 crore, almost one tenth of the amount spent on chemical fertilizers. Considering the fact that ecological/organic fertilization is only a small component in these schemes, the support for the same is negligible. Thus the Government support systems are highly skewed towards chemical fertilisers.

The three broad steps towards ensuring that our soils are brought back to a healthy state and maintained in that manner are:

- Create an alternate subsidy system that promotes ecological farming and use of organic soil amendments.
- Shift the irrational subsidy policy for synthetic fertilisers to sustainable ecological practices in agriculture that will benefit farmers.
- Re-focus scientific research on ecological alternatives, to identify agro-ecological practices that ensure future food security under a changing climate.

As a first step towards ensuring the above Greenpeace has recommended the creation of an Ecological Fertilisation Mission in the Union budget 2011-2012. There is a need to constitute a new and independent mission which should find synergy with flagship rural development programmes such as National Rural Livelihood Mission and Mahatma Gandhi National Rural Employment Guarantee Scheme as ecological/ organic fertilizer production can open up lot of rural employment opportunities. The Ecological Fertilization Mission should have mechanisms to:

- Support generation of biomass, for bulk addition of organic matter in the soil for maintaining proper soil health: This includes promotion of livestock as integral part of the farm, providing infrastructure facilities to farmers for proper collection and usage of livestock manure. *In situ* generation of biomass through sole cropping/ intercropping/ bund cropping of green manure crops, planting of Green manure trees etc.
- Promote nutrient intensive ecological fertilizers (such as composts).
- Encourage and promote the use of bio fertilizers.
- Recycle farm and house hold waste. Burning of biomass/ farm waste, as seen in many paddy growing belts, should be banned.
- Promote crop rotations to enrich soil (e.g.: to include pulses and leguminous crops) – Multiple cropping which enrich soil should be encouraged instead of mono cropping.
- Provide eco bonus for maintaining soil health.

The Mission should help create an institutional mechanism involving farmer cooperatives, local self governments, women self help groups and civil society organisations & should be run by the coordinated effort of the Ministries of Agriculture & Rural development. (Greenpeace submission to Union Finance Minister 070111)

National Food Security: Views of DDS The bane is centralised food production, centralised storage. If this can be decentralised and each community is provided

sufficient incentives to produce all the food it needs and store it within the community a large part of the problem can be solved. This approach of local production and local storage can transform every village into a robust food producing economy.

Since 1996, in the Deccan Development Society we have tried this experiment which now covers about 125 villages and have found it a revitalising local food system. Farmers are given interest free loans which they must repay with grains [not cash]. The grain is stored by women of the village community using their own traditional storage techniques. The entire community sits together, uses Participatory Poverty Assessment and identifies the poor in the village who are issued jowar ration cards that entitles them to about 150 kgs per year. This system has worked at a ratio of 1.6:1 [one rupee reaching the final beneficiary for every 1.6 rupee spent]. Consider this against the government PDS expenditure of 7:1 [One rupee reaches the ultimate beneficiary out of every seven rupee spent by the government]. From this sense, the country does not need Rs 70000 crores per year as Rangarajan fears. It can do with around Rs 20000 crores which in turn generates over two million livelihoods across India.

This is possible because this system does not need any warehousing structures, uses locally produced wicker baskets for storage [grain is mixed with neem and wood ash for storage], grains are not moved around as is done now from Punjab to Kerala or Mizoram using precious food miles, does not need the leviathan structures such as FCI. [For details see: www.ddsindia.com]

Unfortunately economists such as Dr Rangarajan and Montek Ahluwalias can never identify with such people led possibilities. Possibly such decentralised PDS system also threatens the political class since it makes them redundant.

Satheesh, Deccan Development Society

Views of Devinder Sharma The entire debate on food security has to move beyond PDS. I had expected the NAC to look into the possibility of strengthening the concept of local production-local procurement and local distribution. At the same time NAC should have looked into integrating sustainable agriculture with food entitlements thereby ensuring food security. Such an initiative would have drastically reduced the dependence on a failed PDS system, which would have been automatically pruned and therefore could be more manageable and effective.

Integrating agriculture with food security requires a lot of appropriate policy changes that cuts into seed bill, biodiversity act, pesticides management act, PVPFRA, water laws, biotechnology provisions, WTO, FTA etc. None of these were touched by NAC. We need to take a fresh look at the issue.

Devinder Sharma

INTER STATE ISSUES

AP to take up errors with Krishna Tribunal The Govt of Andhra Pradesh says the Tribunal has made wrong calculations and its assumption of 65% dependability is erroneous and has decided to approach the tribunal to correct such mistakes. It will seek the Supreme Court's intervention as a last resort. (The Hindu 030111)

GoM on Delhi, Haryana water row With the water sharing row between Haryana and Delhi still unresolved, Prime Minister Manmohan Singh has set up a four-member Group of Ministers headed by Home Minister P Chidambaram to work out a compromise between the two states. The GoM, set up earlier this week with Water Resources Minister Salman Khurshid, HRD minister Kapil Sibal and Law Minister Veerappa Moily as members, will attempt to resolve pending water sharing disputes that the two states are engaged in. Delhi and Haryana Chief Ministers will participate as special invitees. Delhi Chief Minister Sheila Dikshit took the matter to the Prime Minister after Haryana refused to give more water through the newly constructed Carrier Lined Channel between Munak and Haiderpur. Delhi's contention has been that it has a right to the water as it has paid Haryana Rs 340 crore for the construction of the 102-kilometre canal. The construction of the CLC, a fully concrete canal running parallel to the Western Yamuna Canal, is supposed to save 80 million gallons of water per day, which was earlier being lost as leakages. Delhi has demanded as much water to boost its supply of raw water for the three treatment plants in Okhla, Bawana and Dwarka. Haryana Chief Minister Bhupinder Singh Hooda, however, has refused to part with the water. (Indian Express 270111)

RIVER LINK PLANS OPPOSED

Padyatra against the Par Tapi Narmada Link Plan Gujarat and Maharashtra have signed an MOU of the Par Tapi Narmada Link which envisages a series of seven dams on 6 rivers in these states. The links, associated dams, canals and tunnels are set to submerge at least 75 villages (an area of about 18500 acres) partly or fully and displace over 25000 people, mainly adivasis from the Dangs district in Gujarat. Local farmers and communities have been resisting this project for some time now. (For details, see: http://www.sandrp.in/riverlinking/Par_Tapi_Narm_1206.pdf).

In January 2011, a 7 day yatra was planned by community groups like the *Par Nar Adivasi Sangathan* and the *208 network* with an aim of linking the affected communities of two states spread over three districts. During the Pad Yatra, meetings, rallies, street plays and film shows were organised in around 50 villages. The Yatra concluded at the Chasmandva village meeting, which was attended by 3500 – 4000 people from all the affected villages. The youth of affected villages have set

up an immediate-response '208 service' (a spinoff of Gujarat's 108 emergency ambulance service) to provide assistance to this Yatra and the struggle. All the members of 208 are below 30 years and have vowed never to resort to violence in their protests against the project. "We are not allowing surveys to be conducted in the area with the support of the local sarpanchs and the village elders, but no untoward incident has been reported," says the group Secretary. On each day of the Yatra, 3-4 meetings were addressed and a team of adivasi youth performed street plays. Though the yatra was completely non violent means of demonstrating community's opposition to the River linking Project, it did not receive police permissions in many villages. Permission to use microphones and print leaflets was also withheld. Leaders of the Yatra were rounded up, held back, unjustifiably questioned and threatened by the police. Despite this, for example, close to 400 people marched early morning from Chikhalpada village to Gundiya village in Dharampur block of Valsad district. When the co-ordinator of Par-Nar Adivasi Sangathan, had asked for permission to organise Yatra, he was told that since this Yatra is opposing government plans, permission cannot be given. It is indeed tragic to see that the world's largest democracy has no space or tolerance for dissenting opinions of its weakest constituents. (The Padyatra report)

POWER SECTOR

Power Losses Rs 2.5 Trillion Accumulated losses of state owned power distribution companies come close to Rs 2.5 Trillion or Rs 250 000 crores according to W Bengal Power Secretary. (Mint 040111)

Gujarat to set up 50 MW tidal power plant Gujarat Power Corp has signed a memorandum of understanding with the London based marine energy developer Atlantis Resources Corp to set up a 50 MW tidal power plant at a cost of Rs 750 crores by 2013, the capacity can be expanded to 250 MW at latter stages. The tariff is supposed to be competitive with the tariff of power from a large solar project. (Business Standard 150111)

BANGLADESH

Indo-Bangla Teesta water sharing pact The officials of India and Bangladesh have thrashed out an agreement on sharing of water from Teesta and Feni Rivers in the lean season for the next 15 years. This was decided at the secretary level meeting of the Joint River Commission in Dhaka. The meeting also lead to formulation of a working plan on the sharing of waters of some other common rivers: Dharla, Dudhkumar, Manu, Khowai, Gumti and Muhuri. The agreement is likely to be signed during the visit of the Indian Prime Minister to Bangladesh later this year after some remaining details are decided upon. (The Hindu 120111, Indian Express 130111)

PAKISTAN

US report says Climate change can stir conflict Congressional Research Service in its 2010 Report on 'Security and the Environment in Pakistan' prepared for members and committees of the Congress stated that climate change could act as a 'threat multiplier' and has potential to stoke conflict between Pakistan and India. The report said under climate change predictions, the eventual loss of glacier storage may significantly alter water available in the Indus River for use in Pakistan.

A 2010 Dutch study found that melt water from the Himalaya accounts for 60% of the water in the Indus River. The study also found that projected temperature, rainfall and snow would lead to 8.4% decrease in upstream water flow into the Indus by 2050. It pointed out, "Pakistan has one of the highest deforestation rates & currently has approximately 4% of its original forested area intact. Loss of forests has led to soil erosion and altered ecosystems in the region." (The News 070111)

Floods could have been minimised: US Last year's disastrous floods in Pakistan could have been minimised if European weather monitors had shared their data and these had been properly processed, US researchers said. Catastrophic rains that swept through the country in July and August killed thousands, affected 20 million people, destroyed 1.7 million homes and damaged 5.4 million acres of arable land.

"This disaster could have been minimised and even the flooding could have been minimised," said lead author Peter Webster, a professor of earth and atmospheric science at the Georgia Institute of Technology. "If we were working with Pakistan, they would have known 8-10 days in advance that the floods were coming." Using data from the European Centre for Medium-Range Weather Forecasting, Mr Webster and colleagues found the floods could have been predicted if the data "had been processed and fed into a hydrological model, which takes terrain into account." Mr Webster's research has been accepted for publication in a future edition of the journal *Geophysical Research Letters*. But the London-based ECMWF, which includes 33 participating European countries, defended itself saying it "does not give out weather forecasts and weather warnings to the general public or media". "ECMWF provides numerical forecasts to its member and cooperating states and they are responsible to prepare forecasts for the public and advise the authorities in their own countries," ECMWF scientist Anna Ghelli was quoted as saying. The information did not reach the Pakistani people because of a "lack of a cooperating agreement between the forecasting centre and Pakistan". (Dawn 020211)

Pak withdraws interim stay prayer on Kishanganga Pakistan withdrew its interim stay petition during the hearing on the Kishanganga hydropower project under construction in Jammu and Kashmir in India at the

International Court of Arbitration. During the first hearing of the Kishenganga Arbitration Court in The Hague in the Netherlands, both the sides put up arguments regarding construction of the 330-MW project on Kishenganga, a tributary of the Jhelum River. Pakistan had moved a petition for stopping work as an "interim measure" till the case over the disputed project was decided by the court. However, Pakistan withdrew that prayer, some see as a strategy for expeditious final judgement in the case. (Outlookindia.com 140111)

US refuses to fund Bhasha dam, cost up Pakistan is facing problems in arranging funds for much-trumpeted Bhasha dam as the United States, following multinational financial agencies such as the World Bank, has declined Pakistan's call for funds for this project. US has flatly rejected Pakistan's request for funds and instead asked Islamabad to focus on small projects for enhancing its power projection.

The Economic Coordination Committee of the cabinet has allowed the Water and Power Development Authority to raise Rs 20 billion through term finance certificates and Islamic Sukuk bonds for the \$11 billion Diamer-Bhasha dam. The committee has decided to provide government guarantees for the purpose. Wapda already raised Rs 16 billion in 2006-07 for the 4,500MW dam that will store 6.4 million acre feet of water. A government official said the Asian Development Bank had agreed to provide up to \$ 4 billion long-term loan to help the government meet the foreign exchange component of the project. Another \$1.8 billion needs to be arranged from foreign sources. The official said that about Rs 420 billion would have to be arranged locally in seven years through allocation from the Public Sector Development Programme and issuance of bonds in the domestic market. The government has formed a 'special purpose vehicle' to handle the project. Currently, the government is in the process of acquiring land and building housing colonies. Wapda says it will complete the paper work for the project construction bidding by early next year. The project's cost, which was estimated at Rs 895 billion at the time of the announcement of budget in June 2010, has now been updated at Rs 945 billion. (Business Recorder 130111, Dawn 140111)

USAID releases \$ 20m for Gomal Zam Dam The United States Agency for International Development has released the first tranche amounting to US \$ 20 million to the Pakistan Water and Power Development Authority for Gomal Zam Dam Project. Earlier in January 2011, the United States signed an agreement to provide \$66 million to Pakistan to help complete Gomal Zam (\$ 40 m) and Satpara dam (\$ 26 m) projects.

The Satpara dam project, located at Skardu in Gilgit-Baltistan has installed power generation capacity of 17.7 MW. The dam water will irrigate over 15,000 acres of land. It will also provide 3.1 million gallons per day of potable water.

The Gomal Zam project is expected to be completed in 2011. Gomal Zam is a multi-purpose project being built in S Waziristan Agency of Federally Administered Tribal Area. On its completion, Gomal Zam Dam will store 1.14 million acre feet of water to irrigate 163,000 acres, will have installed power generation capacity of 17.4 MW. Gomal Zam Dam Project is expected to mitigate an estimated \$ 2.6 million of potential flood damage annually. (Dawn 070111, The Nation 070211)

BHUTAN

Half of Bhutan's schools lack sufficient water 238 of Bhutan's 576 schools lack sufficient water supplies; water shortages disrupt education as children must spend time that could be spent learning fetching water from streams; children are also falling sick due to poor hygiene and sanitation as a result of limited access to water; water sources in Bhutan are dwindling as glaciers recede making it difficult to provide schools with water. The accelerated development of hydropower projects with all the collateral damage in terms of roads, colonies, blasting for tunnels, drying up of rivers, dumping of muck and deforestation would only worsen the situation with acceleration in melting of glaciers. (Climate Himalaya Initiative 070211)

NEPAL

Sinohydro to build 50-MW HEP State-owned Sinohydro Corp., China's largest hydropower developer, signed a build-operate-transfer deal to construct a 50 MW hydropower plant in Nepal. Sinohydro said that construction of the \$164 million Upper Marshyangdi project will take approximately four years. Under the agreement, Sinohydro will act as operator of the plant for 35 years before handing the rights over to Nepal's state-owned power firms. Sinohydro will hold a 90 percent stake in the plant, while the remaining 10 percent will be held by Nepalese companies. Once operations commence, the plant will have the capacity to generate 331 million units of electricity per year. China's Ministry of Commerce said that the project marks the largest investment by a Chinese company in Nepal to date. (China Business Newswire 120111)

WORLD WATER

Yemen facing crisis Yemen has the second-fastest population growth of any country. It also has very little water. In fact, the country's capital Sana'a is expected to have exhausted its underground aquifers within just six years. Four times as much water is taken out of its river basin as enters it through precipitation each year, so Sana'a is expected to be the world's first capital city to completely run out of water. desalination will be the key to solving the region's problems – but at a very large cost. It is an extremely energy intensive process – one which a country like Yemen may be unable to afford.

"Most of Yemen's population lives at elevations of more than a mile above sea level, making pumping

desalinated drinking water prohibitively expensive," US think tank Centre for Strategic and International Studies said. "Even without pumping costs, desalination would be a heavy burden on a country with a per capita income of less than \$900 a year, and with rapidly vanishing oil resources." Predictably and suspiciously, the think tank advocates desalinisation using nuclear power. (London Telegraph 310111)

US Fracking Firms break law, pump diesel into aquifers Several energy companies may have violated environmental rules by injecting diesel into the ground without permits as part of a controversial natural gas drilling technique, according to findings from Congressional probe released on Jan 31 2011. The probe of diesel use in hydraulic fracturing, a practice that has allowed drillers to tap abundant shale gas, found that oil services firms such as Halliburton and BJ Services injected millions of gallons of fluids containing the fuel into wells during 2005-09. 12 companies were cited in the probe for using diesel without proper permits. Critics say the chemicals used in the process, called "fracking," can contaminate drinking water.

In 2003, the Environmental Protection Agency entered into a voluntary agreement with Halliburton, BJ Services and Schlumberger to eliminate the use of diesel fuel in hydraulic fracturing fluids injected into coalbed methane wells. In addition, a 2005 energy law exempted hydraulic fracturing, or fracking, from regulation under the Safe Drinking Water Act, except when diesel is used. Still, the probe found that no oil and gas service companies sought or were issued permits for the use of diesel fuel in fracking between 2005 and 2009. "This appears to be an area of significant noncompliance with the requirements of the Safe Drinking Water Act," House Democrats Henry Waxman, Edward Markey and Diana DeGette said in a letter to the EPA outlining their investigation. The fracking probe was initiated by House of Representatives' Energy and Commerce Committee last year when it was headed by Waxman. Halliburton said there are currently no federal requirements that companies obtain permits for the use of diesel in fracking and therefore it does not believe its "activities have resulted in a violation of the Safe Drinking Water Act or any other federal environmental law." In addition, Halliburton said its agreement with the EPA only applied to coalbed methane gas development, and the use of diesel attributed to Halliburton in the lawmakers' report was not for that form of development.

Fracking injects a mixture of water, sand and chemicals into rock formations at high pressure to force out oil and natural gas. The spread of the technique to new areas has prompted a backlash from homeowners near shale gas developments who complain the practice has contaminated their drinking water. This should ring warnings for what is likely to happen in India in coming years. (Reuters 020211)

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WRITINGS ON THE WALL

"My stint as chairman of the National Human Rights Commission was an eye-opener. I scanned through 60,000 complaints against the police and the State. I learnt how governance and democracy were functioning. I believe the gutter has come to power in India."

Justice M N Venkatachalaiah, Former Chief Justice of India (The Times of India 210111)

"For years we have been constructing projects across our rivers without taking the minimum flows into account."

"On whether it should have got the (environment) clearance, I would say no to Common Games Village, no to Akshardham Complex (as both are on the Yamuna river bed). I don't think it should have been allowed. The manner in which the Yamuna river belt has been devastated by construction should be a wake up call for all of us. Government seriously wants to formulate river regulation zone on the lines of coastal regulation zone to protect rapidly vanishing river beds."

Jairam Ramesh, Union Minister of state for Environment and Forests (Tribune 080111, The Hindu 110111)

"A river is more than an amenity; it is a treasure. It offers a necessity of life"

Justice Oliver Wendell Holmes (<http://www.state.nj.us/drbc/>)

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