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Dams, Rivers & People

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Lead Piece

Analysis of TAC guidelines and The Decisions of the TAC in recent meetings

The Advisory Committee in the Union Ministry of Water Resources for consideration of techno-economic viability of Irrigation, Flood Control and Multi Purpose Project Proposals (TAC in short) is supposed to discuss the TECHNO-ECONOMIC viability of the irrigation, flood control and multi-purpose project proposals as per the Resolution published in the Union of India Gazette Notification No. 12/5/86-P-II dated Nov 27, 1987. This committee replaced the similar committee that existed earlier in the Planning Commission. Even now the guidelines for the functioning of the committee get issued by the Planning Commission.

The Gazette notification cited above also said, "The committee may also invite representatives of any other Government organizations, scientific body of experts in the relevant fields to participate in its deliberations." This seems like a window to appoint non government persons in the committee, but this window do not seem to have been used. Among the functions of the committee listed in this notification include, "The functions of the Committee will be to examine projects proposed by State Governments, Central Government or other organizations and satisfy itself that the schemes have been prepared after adequate investigations" and "the need of environment conservation and proper rehabilitation of project-affected persons have been taken into account." Thus the committee has wide ranging mandate, including issues of viability, optimality of the proposals and also social and environmental issues.

As noted in the *Guidelines for Submission, Appraisal and Clearance of Irrigation and Multipurpose Projects, 2010* available on the Central Water Commission website (http://www.cwc.nic.in/main/webpages/publications.html) , "The project proposal, thereafter, is put up to the Advisory Committee for clearance, which is, by and large, like single window clearance." Thus such a single window clearance becomes all the more important. The guidelines further note, "On the basis of examination conducted by the Advisory Committee, decision on techno-economic viability of the projects is taken in the meeting of this Committee. The projects found acceptable by the Advisory Committee shall be recommended for investment clearance by the Planning Commission and inclusion in the Five Year Plan/Annual Plan." This shows how important the role of the TAC is in judging the techno-economic viability of the project and also from the point of view of prudent planning.

Considering the above, there is strong case for clearly defined norms for transparency, participation and accountability in (1) functioning of TAC; (2) The screening process of the projects at initial stages that also happen under these guidelines in the Central Water Commission, based on which approval for DPR preparation is given, (3) the TAC at state levels.

SANDRP (South Asia Network on Dams, Rivers & People) has obtained minutes of some of the recent meetings of TAC using the RTI Act and analysed the decisions taken at these meetings. (The minutes of the TAC meetings were obtained for different purposes at different points of time, hence there is a gap between the 95th and 103rd meeting; the minutes of the meetings between these two meetings are not yet available.) The table below gives and overview of the decisions taken at these meetings and the subsequent tables gives overview of the proposals and decisions taken at each of these meetings.

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Conflicts over water in Chile – Between Human Rights and Market Rules

Conflicts Over Water in Chile – Between Human Rights and Market Rules (by Sara Larrain & Colombina Schaeffer, Sept 2010) provides an in-depth analysis and knocking critique of water privatisation in Chile. Privatisation began in the country with the enactment of the "1981 Water Code". It cleared the road to full commodification of water sector and created a market economy based on private water rights.

The report provides an overview of the water situation in Chile covering aspects like private control of water resources, over-exploitation by industries, pollution, decreasing domestic water-use, highest water tariffs in S America and conflicts. It provides specific case studies from the north, central & south bringing out the conflicts, infringement and destruction, detailing how the indigenous people's right to water and ancestral lands is being usurped blatantly by corporations under state encouragement.

The Chile Water Code-1981 In 1973 the worsening economic situation led to the overthrow of the Salvador Allende's govt in Chile. The military govt of General Augusto Pinochet started adopting free-market policies & signed a new constitution in 1980. The new constitution pushed the "Water Code of 1981". The Water Code also known as "Chilean Model" in water resources management is characterised by use of free market principles & water markets to allocate water to highest value use. The report states that the Water Code of 1981 defines water as "a national public good", but at the same time as "a market asset", authorizing the privatisation of water through the granting of rights for free and in perpetuity, not setting limits on said grant. The Water Code has "a strong pro-business bias; one that allowed water property privatization and, for the first time in Chile's history, the separation of land control from water control in order to allow for its unrestrained purchase and sale, transforming it into mere merchandise".

Water Privatisation – Control of MNCs The northern, central and southern regions in Chile face varied problems due to the free market principles and private water rights regime. The northern water scarce and arid zone is facing serious conflicts between the indigenous local communities and peasants against mining companies, whose exploitations and ventures are concentrated in these arid regions. In the central part exploitation of surface and groundwater resources by mining, hydroelectric and agribusiness resulted in degradation of watersheds creating tension between different sectors like mining and agriculture. This also caused a shortage of drinking water in villages.

In south water rights ownership is concentrated in the hands of hydropower corporations. These water bodies are also being contaminated by the pulp and paper industries, creating serious conflicts between power companies and rural communities, and pulp industries and urban-coastal communities. Water pollution has damaged economic activities such as tourism & fishing.

According to the Chilean Water Code, once water rights are given to an individual or a private company, the state no longer intervenes and the reallocation of these resources is done through what is called the "water market" where the private owner of the water rights can rent, buy or sell them, the same like any other asset.

This transaction mechanism between private water rights favours an extreme concentration of ownership of this resource; to such an extent that currently only three companies concentrate 90% of the ownership of water rights for power generation nationwide. Similarly, in mining sector water rights are held by private companies which have accrued rights of surface and groundwater in areas of high water scarcity in the north. In the case of the Antofagasta Region for example, mining uses over 1000 litres/ second of surface water & has almost 100% of the groundwater rights.

Privatisation in Urban Water – Rising Tariffs, Decreasing Use In the urban water supply systems privatisation happened during the period 1994–2005. At present all the water service providers in all the urban areas are private corporations except one municipality of Maipu, east of Santiago Metro region. There were two main reasons given for the reforms – one, the private companies would more efficiently resolve the problems of access and coverage and two, to privatise competition is required, hence deregulate the sector, remove entry barriers for MNCs to invest.

However, the direct impacts of privatisation were on the other fronts including higher levels of inequality and conflicts in access to water due to increasing water tariffs. The tariff hikes lead to reduction in water consumption because households did not have sufficient income to meet rising potable water rates. Further there were job losses in water utilities because of massive layoffs, which increased from 30% in 1999, to 60% in 2002.

Evidence shows that private participation in water utilities has not meant an improvement in the coverage, or access to water resources by people. The percentage of the population covered by drinking water and sewage services is almost same before privatisation (1998) as it was 10 years after (2008). The water MNCs involved are Suez, Thames Water & Anglian Water; there are the local private consortiums like Luksic Group, Solari Group and Icafal-Vectra. Some of the water utilities are being sold to financial investment companies.

Lessons for other Countries like India The report is timely in bringing out the realities and actual impacts of privatisation in the water sector. It shows that there is not much substance in the claims that privatisation of water services has done miracles in Chilean water services, rebutting the claims of the proponents of water privatisation including the World Bank. We in India need to draw lessons on the direction privatisation and free market principles would take our water sector. Similar kind of pro-privatisation policies are also being pursued aggressively here. However, we are still in infancy compared to what has happened in Chile & there is still time for course correction. The privatisation model has failed seriously in Chile and should not be pushed elsewhere in the world.

Gaurav Dwivedi (Manthan Adhyayan Kendra)

(Continued from page 1)

Meeting no	Date of meeting	No of projects considered	No projects approved	No of projects deferred	No of projects rejected	Total cost of the accepted projects, Rs Crore
95th	20.01.2009	18	17	1	0	**15807.19**
103rd	11.03.2010	14	12	2	0	**51550.63**
104th	12.05.2010	20	20	0	0	**3193.78**
105th	25.06.2010	12	11	1	0	**4656.53**
106th	16.09.2010	17	14	3	0	**16674.26**
107th	27.10.2010	12	7	5	0	**560.57**
TOTAL		**93**	**81**	**12**	**0**	**92442.96**

Conclusions Some obvious conclusions from the reading of the minutes of these TAC meetings are:

- No projects have been rejected.
- At the most, the decisions are deferred to future meeting; most such projects are accepted in subsequent meetings. The most frequent reasons for deferring the decisions are: the approval of State Finance Committee is not available, all other approvals are not available, full information is not submitted.
- The projects involve massive economic decisions. In just six meetings, the committee has approved projects costing Rs 92442.96 crores, so on an average, in each meeting, projects costing over Rs 15000 crores are approved.
- The projects involve massive social, environmental and other impacts.
- There is no discussion about the technical viability of the projects. Nor is there any discussion about whether the project is a desirable project, if there are other options available, if this is the best option and so on. Even when the proposal is to allow huge increase in cost of the projects with huge time over run, the proposals are accepted with little scrutiny about the reasons or justifiability for such escalations.
- There is little application of mind if the projects are indeed viable, desirable and optimum.
- There is no independent, critical voice in the meetings. The agenda, proceedings, or decisions of the meetings are not even in public domain.
- There is no mechanism to hold the TAC accountable for any wrong decisions taken.
- The TAC is clearly not fulfilling the mandate given to it in the guidelines for TAC meetings. The guidelines themselves need revision from several points.
- There is no attempt to assess the justifiability of the kinds of projects that are being accepted and if they are indeed delivering the promised benefits.

Ramaswamy R Iyer, former Secretary, Govt of India, EAS Sarma, former Secretary, Govt of India, Vishakhapattanam, Gopal Krishna, Water Watch Alliance, Latha Anantha, River Research Centre, Kerala, M S Vani, Development Centre for Alternative Policies, Manoj Misra, Yamuna Jiye Abhiyan, Pijush Das, Save Barak Campaign (Assam), Rukmini Rao, Gramya Resource Centre for Women (Andhra Pradesh), Sachin Warghade, Prayas (Maharashtra), Shripad Dharmadhikary, Manthan Adhyayan Kendra (Mah), along with SANDRP, has written to the Union Water Resources Minister, Chairman, Central Water Commission, Planning Commission Deputy Chairperson and Member (Water) and also the National Advisory Council, suggesting norms for basic transparency, Accountability and Participation in the functioning of the TAC. The letter said, “The TAC considers dozens of such projects with huge economic, social, environmental and other implications for the country in every one of its meetings. All of these projects are supposed to be public purpose projects, and are taken up using public resources. The Planning Commission accords investment clearance to the projects only after the TAC clearance. This Committee's decisions are perhaps the ones which impact on India as a whole the most - as they relate to land and water - which are the basic life sustaining and livelihood providing resources for the people.”

The letter made following specific suggestions:

1. Put up the agenda notes and minutes of the TAC meetings on the website. The agenda notes should be on the web site at least a couple of weeks before the meeting, the minutes of the meeting should also be up before the agenda notes of the next meeting is put up. The documents related to the proposals included in the agenda notes should also be available on website of the project proponent with links for the same on the websites of CWC/ MWR/ PC.
2. The agenda notes should also invite representations from all concerned on the proposals to be discussed at the TAC meeting and such representations should be discussed when discussing specific proposals.
3. The TAC also needs to have credible non governmental members, who have shown track record of taking independent position and for whom there is no issue of conflict of interest.
4. Similar guidelines for state level appraisal should also be formulated and states encouraged to follow them.
5. The guidelines for the appraisal of the projects needs to be updated considering the experience of the past projects, possible new and emerging issues including climate change, dominance of groundwater, including in costs the forgone value of services provided by rivers, proper options assessment (including optimising performance of existing projects), evolving policy on displacement/ rehabilitation, participation of people right from planning and decision making stage.
6. The fundamental issue is the concept of eminent domain that underlies the guidelines. In stead, the underlining theme of the TAC and the MWR should be public trust doctrine.

TAC decisions at 95th meeting (20.01.2009)

Proposals Accepted: TOTAL Cost of approved projects: **Rs 15807.19 crores**

SN	Project	Dist/ State	Appr. year	River/ Basin	Ht/ L of Dam (m)	Original (revised) Cost-CrRs	CCA (Ha)	Annual Irrigation (Ha)	Decision
1	Protection of Sialmari Area from the erosion of Brahmaputra	Morigaon/ AS	2002	B'putra	NA	14.29 (25.73)	NA	NA	Committee accepted the proposal.
2	Protection of Bhojaikhati, Doligaon and Ulubari are from the erosion of Brahmaputra	AS	2002	B'putra	NA	14.52 (27.92)	NA	NA	Committee accepted the proposal.
3	Protection of Majuli Island from flood & erosion, Ph II-III	AS	New	B'putra	NA	116.02	NA	NA	Committee deferred the proposal with the suggestion to prepare the cost estimate based on current price level.
4	Raising & strengthening Brahmaputra Dyke from Sissikalghar to Tekeliphuta including closing of breach by retirement and anti erosion measures	AS	New	B'putra	NA	142.42	NA	NA	Committee accepted the proposal.
5	Raising, Strethening and construction of Bitminous Road over Eastern & Western Kosi Embankments	BH	New	Kosi/ Ganga	NA	339.39	NA	NA	Committee accepted the proposal.
6	Raising, Strengthening & Extension of existing embankments along Bhutahi Balan River	Madhubani / BH	New	Bhutahi Balan/ Ganga	NA	37.14	NA	NA	Committee accepted the proposal.
7	Breach closure of Eastern Afflux Bund in Nepal	Nepal	New	Kosi/ Ganga	NA	143,42	NA	NA	Committee accepted the proposal.
8	Proposal of Kosi Barrage restoration work	Birpur / BH	New	Kosi	NA	86.65	NA	NA	Committee accepted the proposal.
9	Kelo Irrigation Project	CG	New	Kelo/ Mahanadi	NA	606.91	24369	22,810	Committee accepted the proposal.
10	Channelisation of Bata River	Sirmour/ HP	New	Bata/ Yamuna	NA	34.67	NA	NA	Committee accepted the proposal.
11	Widening, strengthening, providing 10 m wide road on Alipur Bund	Baghpat / UP	2006	Yamuna/ Ganga	NA	42.20 (46.17)	NA	NA	Committee accepted the proposal.
12	Indira Sagar (Polavaram) Project	AP	2009	Godavari	30.48	10151.04	2,91,000	4,36,000	Proposal accepted with some observations.
13	Utawali Medium Irrigation Project	MH	2004	Tapi	NA	109.64	4650	4394	Committee accepted the proposal.
14	Lower Panzara Medium Irrigation Project	MH	New	Tapi	NA/ 3226	34.73	9980	7585	Committee accepted the proposal.
15	Nandur Madhameshwar Project	MH	1991	Godavari	Na	72.66 (941.33)	5443	45,124	Committee accepted the proposal.
16	Kamani Tanda med Irr Project	MH	2002	Tapi	NA	78.49	NA	NA	Committee accepted the proposal.
17	Kandi Canal Extension from Hoshiarpur to Balachaur	Punjab	2002	Sutlej	NA	147.12 (156.35)	NA	NA	Committee accepted the proposal.
18	Teesta Barrage Project sub stage-1 Phase 1	WB	1975	Teesta	NA	69.72 (2988.61)	304,000 (342,000)	NA	Committee accepted the proposal.

TAC decisions at 103rd meeting (11.03.2010)

Proposals Accepted: TOTAL Cost of approved projects: **Rs 51550.63 crores**

SN	Project	Dist/ State	Appr. year	River/ Basin	Ht/ L of Dam (m)	Original (revised) Cost-CrRs	CCA (Ha)	Annual Irrigation (Ha)	Decision
1	Champamati Irrigation Project	Chirag /Assm	1980	Champamati/B'putra	NA/ 258.50	15.32 (309.22)	17,414	24,994	Proposal Accepted
2	Sardar Sarovar Project	Guj	1988	Narmada	138.68	6,406.06 (39,240.45)	21,20000	17,92,000	Proposal Accepted
3	canals modernization, Rehab; drains renovation to recharge groundwater	Harya na	NA	Yamuna	NAP	67.28	NA	28,822 (Restoration)	Restoration of six branch canal systems: Narwana, Fatehabad, WJC main branch, Hansi, Butana and Jawahar Lal Nehru feeder. Project accepted.
4	Restoration & Modernisation of main Ravi canal & its network	J&K	NA	Ravi/ Indus	NA	62.27	26,600	50.749 (restoration of 15,016)	The SFC had not been obtained yet due to ongoing annual plan discussion in Planning Commission. The Committee deferred decision.
5	Modernisation of Chandrapalli Project-ERM	Gulbar ga/ Krntk	1976	Krishna	NA	2.06 (14.93 for restoration)	5223	8446 (reduced to 6511; restoration of 1935 Ha)	Committee accepted the proposal
6	Modernisation Hattikuni Project	Gulbar ga/ Krntk	1961	Hattikunni/ Krishna	NA	0.58 (6.75 for restoration)	2145	2145 (reduced to 1189; restoration of 956 Ha)	Committee accepted the proposal.
7	Modernisation of Uper Mullamari Project	Bidar/ Karnat aka	1978	Mullamari/ Krishna	28.4/ 810	3.28 (8.21 for restoration)	3229	3279 (reduced to 1779; restoration of 1500 Ha)	Committee accepted the proposal.
8	Mahan (Gulab Sagar) Project (Revised Major)	Sidhi/ MP	2003	Mahan/ Sone	46/ 182.50	140.51 (486.96)	14,000	19,740	Activities relating to CAD are yet to be taken up. The work programme under NREGA could be tied up with CAD works of this project. Proposal accepted
9	Jobat Project	Alirajpu r/ MP	1985	Hatini/ Narmada	38.6/ 485.50	30.75 (230.61)	9848	12,507	Committee accepted the proposal
10	Ghungshi Barrage Medium Irrigation Project	Akola/ Mahar ashtra	New	Purna/ Tapi	NA/ 185	170.15	7048	6660	Chairman, CWC enquired to know about the impact of ongoing Purna project on the Ghungshi Barrage project. Committee accepted the proposal
11	Extension, Renovation and Modernisation of Canals from river Sutlej	Punjab	NA	Sutlej	NA	734.46	13,59,000	(restoration of 198,000, additional irrigation 8144 Ha)	Views of BBMB to be obtained before investment clearance by the Planning Commission. BBMB to ensure that water for the scheme was drawn within the allocated share of Punjab. Proposal accepted
12	Narmada Canal Project	Rajast han	2003	Narmada	138.68/1210	467.53 (2481.49)	2,46,000	1,51,000	Committee accepted the proposal.
13	Saryu Nahar Pariyojna	UP	1978	Saryu/ Ganga		78.68 (7270.32)	3,54,000	2,66,000	Committee accepted the proposal
14	a. Taral Lift Irrigation b. Rajpora Lift Irrigation c. Modernisation of Lar canal d. Modernisation of Grimtoo Canal	J&K	--	Jhelum	--	--	--	--	Projects of J&K deferred due to non submission of SFC

TAC decisions at 104th meeting (12.05.2010)

Proposals Accepted: TOTAL Cost of approved projects: **Rs 3193.78 crores**

SN	Project	Dist/ State	Appr. year	River/ Basin	Ht/ L of Dam(m)	Original (revised) Cost-CrRs	CCA (Ha)	Annual Irr (Ha)	Decision
1	Karra Nala Irrigation Project	Kabirdham/ CG	New	KarraNalla/ Mahanadi	NA/ 68 (barrage)	99.19	4100	NA	After discussion, the Committee accepted the proposal
2	Ghumariya Nala Irrigation Project	Rajnandgaon/CG	New	Ghumaria Nalla/M'nadi	9.5/ 1219.6	47.79	4173	3200	The proposal accepted with the condition that it will be completed by March 2012 & no further cost/time revision will be considered
3	Sutiapat Irrigation Project	Kawardha/ CG	2007 (Revised)	Silheti/ Mahanadi	30/ 450	46.95 (98.62)	6571	6960	Committee accepted the project
4	Improving Irrigation Intensity of Hardoi Branch	Hardoi/ UP	2006	Sharda/ Ganga	NA	105.30 (135.17)	6,24,605 (Restoration of 95,961 Ha)	3,06,055	Proposal accepted with the condition that no further time/cost revision will be considered by this committee.
5	Rajiva Sagar (Bawanthadi) Project	Balaghat /MP	1999	Bawanthadi / Godavari	31/ 6,420	161.57 (1407.19)	48,848	57,120	The proposal accepted with the condition that no further time/cost revision will be considered by this committee.
6	Purna Barrage-II	Akola/Mh	New	Purna/ Tapi	NA/ 216	179.28	8,693	7,302	After discussion, the Committee accepted the proposal
7	Upper Manar Medium Irrigation Project	Latur/ MH	1997	Manar/ Godavari	NA/ 975	26.18 (525.40, recast Rs 424.5)	8750	8,280 (12,420)	Such high conveyance efficiency is not practicable. The scope should be same as in original proposal approved by the Pl Com in April 1997. TAC asked to recast the estimate, delete the lift component. Recast estimate of Rs 424.5 cr accepted
8	Modernisation of Zaingir Canal Irrigation Project	Baramula/ J&K	New	Madhumati Nalla/ Jhelum	NA	73.51	5100	7100	After discussion, the Committee accepted the proposal
9	Raising, Strengthening of L and R Embankments	Muzaffarpur/ BH	NA	Noon/ Gandak	NA/150 km emb)	26.71	NAP	NAP	After discussion, the Committee accepted the proposal
10	Flood threat of River Jhelum – Urgent works	Srinagar/ J&K	New	Jhelum/ Indus	NA	97.46	NAP	NAP	Committee accepted the proposal.
11	Regulation of flood water in Kayal area, 4-5 paddy fields	Kuttanad / Kerala	New	NA/NA	2.3 (Embt)	46.73+ 72.18 (118.91)	NAP	NAP	TAC directed CWC to merge the two proposals in to one due to same objectives and same area. The integrated proposal accepted
12	flood protection works of Yamuna Basin	Saharanpur/ UP	New	Yamuna/ Ganga	NA	28.13	NAP	NAP	After discussion, the Committee accepted the proposal
13	Flood Protection work along L and R bank of River Rapti	Gorakhpur/ UP	New	Rapti/ Ganga	NA/53620 (emb)	68.82	NAP	NAP	After discussion, the Committee accepted the proposal
14	Flood protection works along left & Right	UP	New	Yamuna/ Ganga	NA	43.80	NAP	NAP	After discussion, the Committee accepted the proposal
15	Embankment along left bank of River Ganga	UP	New	Ganga/ Ganga	NA/14900 (Emb)	33.23	NAP	NAP	Proposal accepted with conditions. GFCC to monitor to ensure that CEC/SCourt conditions are compiled with before construction
16	Anti-erosion works on R bank of River Ghaghra	Lakhimpur/ UP	New	Ghaghra/ Ganga	NA/1850 (emb)	30.4	NAP	NAP	Committee accepted the proposal
17	Anti-erosion work to protect villages on L & R banks	Lakhimpur/ UP	New	Sarda/ Ganga	NA/2410 (emb)	25.04	NAP	NAP	Committee accepted the proposal
18	Modernisation of Lar Canal	Budgam/ J&K	NA	Lar/ Jhelum	NA	47.72	2231	NA	Proposal deferred in the 101st meeting, as SFC was not submitted. Now submitted. proposal accepted
19	Restoration, Modernisation of main Ravi Canal & distribution network	J&K	NA	Ravi/ Indus	NA	62.27	26,600	56,749	Proposal deferred in 103rd meeting. The reason for the sanction of SFC for a lesser amount than a finalized cost by CWC to be clarified. The state has submitted the same. Proposal accepted.
20	Modernisation of Grimtoo Canal	J&K	NA	NA	NA	99.09	NA	NA	Same as above (19)

TAC decisions at 105th meeting (25.06.2010)

Proposals Accepted: TOTAL Cost of approved projects: **Rs 4656.53 crores** (except Halon Project, for which cost not given in the minutes)

SN	Project	Dist/ State	Appr. year	River/ Basin	Ht/ L of Dam (m)	Original (revised) Cost-CrRs	CCA (Ha)	Annual Irrigation (Ha)	Decision
1	Restoration work of Eastern Gandak Canal (revised Major)	Bihar	2004	Gandak/ Ganga	NA/ NA	294.00 (684.78)	4,08,000	6,62,000	Planning Com. informed that CGWB has been carrying out studies of conjunctive use for addressing the problem of water logging in the Gandak canal command area. Chairman desired that the submission of CGWB report may be expedited by the Govt of Bihar and suggested to take remedial measures for water logged area based on recommendations of CGWB. Committee accepted the proposal.
2	Kharung Tank Project (Major ERM-New)	Chhattisgarh	1920	Kharung/ Mahanadi	28.40/ 2214	101.04	NA	NA	Committee accepted the proposal.
3	Maniyari Tank Project (Major ERM-NEW)	Chhattisgarh	New	Maniyari/ Mahanadi	34.15/ 2905	159.95	NA	NA	The chairman enquired that while computing BC ratio of the project, why the old project cost has not been taken in to consideration. Since the SFC has not been obtained, it was decided that the project may be deferred for reconsideration in the next meeting.
4	Halon Irrigation Project (New Major)	Mandla/ MP	NA	Halon/ Narmada	31/ 993	Cost not given	13040	16,782	**Stage-2 forest clearance has still not obtained and work will be started after stage-2 clearance**. Committee accepted the proposal.
5	Man Irrigation Project (Revised Major)	Dhar/ MP	1992	Man/ Narmada	53/ 1804	44.10 (246.03)	15000	NA	Committee accepted the proposal.
6	Upper Narmada Irrigation Project (New Major)	Dindori/ MP	NA	Narmada	33.8/ 2120	683.93	18,616	26,622	Committee accepted the proposal.
7	Shelgaon Barrage Project	Jalgaon/ MH	Na	Tapi	NA/ 419.65	446.49	9589	11,318	Committee accepted the project.
8	Rengali Irrigation Sub-project LBC-II (revised Major)	Orissa	1996	Brahmani	NA	705.15/ (1958.34)	93,501	NA	Secretary (WR) desired that the work schedule should be revised so the project should be completed by March 2015. Committee accepted the proposal.
9	Kachnoda dam project-Revised	UP	2006	Kachnoda/ Betwa	16/ 4100	88.67 (423.45	11,699	10,850	Committee accepted the proposal.
10	Flood protection works to Brahmani-Kejua-Birupa Doab of Brahmani system	Orissa	New	Brahmani	NA	62.32	NAP	NAP	Committee accepted the proposal with the condition that the project should be completed by March, 2013 and no further cost/time revision will be considered.
11	Revised project estimate for construction of Right Marginal Bund on river Ganga from Bhogpur to Balawali	Uttarakhand	NA	Ganga	NA	11.92	NAP	NAP	Committee accepted the proposal with the condition that the project should be completed by March, 2012 and no further cost/time revision will be considered.
12	Scheme for desilting of river Ichamati along the common border portion for better drainage and flood management	West Bengal	New	Ganga	NA	38.23	NAP	NAP	Committee accepted the proposal

TAC decisions at 106th meeting (16.09.2010)

Proposals Accepted: TOTAL Cost of approved projects: **Rs 16674.26 crores**

SN	Project	Dist/ State	Appr. year	River/ Basin	Ht/ L of Dam (m)	Original (revised) Cost-CrRs	CCA (Ha)	Annual Irrigation (Ha)	Decision
1	J Chokka Rao Godavari Lis (Revised-Major)	AP	2007	Godavari	NA/ NA	6,016 (9427.73)	4,05,000	NA	Committee accepted the proposal.
2	Durgawati Reservoir Project (revised-Major)	Kaimur/ Bihar	1975	Durgawati/ Ganga	46.30/ 1830	25.30 (983.10)	NA	42,900	Committee accepted the proposal.
3	Balh Valley (Left Bank) Irrigation Project (Revised-Medium)	HP	2005	Suketi/ Sutlej	NA	41.64 (103.78)	2780	Na	Committee accepted the proposal
4	Gumani Barrage Project (Revised-Major)	JH	1976	Gumani/ Ganga	NA	3.84 (185.76)	16,194	NA	Committee accepted the proposal.
5	Subarnarekha Multipurpose Project (Revised-Major)	JH	1982	Subarnarekha, Kharkai	NA	480.90 (6613.74)	1,54,802	2,36,846	Committee deferred the proposal on account of non clearance for diversion of 145.26 ha land falling under Dalma Wildlife Sanctuary and non submission of SFC.
6	Lower Wardha Irrigation Project (Revised Major)	MH	2008	Wardha/ Godavari	27.80/ 9,464	857.70 (2232.41)	NA	63,333 (Revised to 75,011)	Secretary (WR) asked project authorities to submit proper justification regarding the benefits accrued by the revised proposal. Committee deferred the proposal.
7	Kandi Canal Stage-II (Revised-Major)	Punjab	2002	Sutlej	NA	147.12 (540.24)	29527	NA	Committee accepted the proposal.
8	Modernisation of Ganga Canal system	Rajasthan	2000	Ganga	NA	445.73 (621.42)	NA	NA	Committee accepted the proposal.
9	Badaun Irrigation Project (New-Major)	UP	New	Ramganga/ Ganga	NA	332.12	53,504	37,453	Committee accepted the proposal.
10	Bansagar Canal Project (Major-revised) (Interstate)	UP	1990	Sone/ Ganga	67/ 1020	969.74 (3148.91)	1,50,132	NA	Committee accepted the proposal.
11	Kanhar Irrigation Project (New-Major) (Interstate)	UP	New	Kanhar/ Sone	NA	652.59	26,075	27,898	Committee accepted the proposal.
12	Restoring capacity of Gandak Canal System (New ERM-Major)	UP	1960	Gandak/ Ganga	NA	50.39 (217.12)	3,32,000	NA	Committee accepted the proposal.
13	Raising and strengthening of tributary dyke along both banks of Kopilli River	Assam	New	Kopilli/ Brahmaputra	NA	110.72	NA	NA	Committee accepted the proposal.
14	Assam Integrated Flood River Bank Erosion Risk Management Project	Dibrugarh/ Assam	New	Brahmaputra	NA	61.33	NA	NA	Committee accepted the proposal
15	Assam Integrated Flood River Bank Erosion Risk Management Project	Palasbari/ Assam	New	Brahmaputra	NA	129.49	NA	NA	Committee accepted the proposal
16	Scheme for flood protection works of Rapti –Eastern UP	UP	New	Rapti/ Ganga	NA	52.29	NA	NA	Committee deferred the proposal due to non submission of SFC.
17	Maniyari Tank Project (Major ERM-NEW)	Chhattisgarh	New	Maniyari/ Mahanadi	34.15/ 2905	159.95	NA	NA	Committee accepted the proposal

TAC decisions at 107th meeting (27.10.2010)

Proposals Accepted: TOTAL Cost of approved projects: **Rs 560.57 crores**

SN	Project	Dist/ State	Appr. year	River/ Basin	Ht/ L of Dam (m)	Original (revised) Cost-CrRs	CCA (Ha)	Annual Irrigation (Ha)	Decision
1	Indira Sagar (Polavaram) Project	AP	2009	Godavari	30.48/ NA	10151.04 (16010.45)	2,91,000	4,36,000	Committee deferred the proposal for next meeting and directed the Member Secretary to send copies of DPR to IFD and Chief Advisor (cost) for their reference.
2	Raisa Reservoir scheme	Ranchi/ JH	New	Kanchi/ Subarnarekha	NA	67.78 (81.11)	3145	3145	Committee accepted the proposal.
3	Tanja Reservoir Scheme	JH	New	Tanja/ Subarnarekha	NA	74.42 (87.76)	6370	5670	Committee accepted the proposal.
4	Subarnarekha Multipurpose Project (Revised-Major)	JH	1982	Subarnarekha, Kharkai	NA	480.90 (6613.74)	1,54,802	2,36,846	Committee deferred the proposal on the ground of non-availability of Dalma Wildlife Sanctuary and the project authorities were asked to expedite the said clearance.
5	Kachhal Medium Irrigation Project	MP	New	Kachhal/ Chambal	NA/ 3150	62.48	NA	3470	Committee accepted the proposal.
6	Upper Kaketo Irrigation Project	MP	New	Parwati/ Yamuna		196.266	NA	3,423	Committee accepted the proposal.
7	Lower Wardha Irrigation Project (Revised Major)	MH	2008	Wardha/ Godavari	27.80/ 9,464	857.70 (2232.41)	NA	63,333 (Revised to 75,011)	After discussion on the justification note and on the advice of JS (Exp), the project proposal was deferred by the Committee and the project authorities asked to submit additional justification in respect of cost & time overrun based on internal audit of accounts for the project.
8	Relining of Indira Gandhi Main Canal (New ERM)	RJ	1958	Sutlej	NA	401.63	5,53,000	NA	Committee deferred the proposal since SFC has not been obtained.
9	Indira Gandhi Nahar Project (Stage-II) Revised	RJ	NA	Sutlej	NA	89.12 (6921.32)	12,44000	NA	Committee deferred the proposal as the BC ratio was not satisfactory.
10	Flood protection works along Banks of River Tunga	Shimoga/ KN	New	Tunga/ Krishna	NA	55.18	NA	NA	Committee accepted the proposal.
11	Flood protection works for Hemawathi River	Hassan/ KN	New	Hemavathi/ Kaveri	NA	25.48	NA	NA	Committee accepted the proposal
12	Scheme for flood protection works of Rapti –Eastern UP	UP	New	Rapti/ Ganga	NA	52.29	NA	NA	Committee accepted the proposal.

Dying Rivers of Goa: Impact of mining on water resources

Goa is the smallest state of India with a population of 1,347,668 as per census 2001 and an area of 3,702 sq. km. Distance between the north to the south is 105 km while the distance between the east to the west is hardly 50 kms. Goa occupies a very strategic location between Arabian Sea to the West and Western Ghats to the East. Western Ghats in Goa covers an area of 700 sq km. The coastal line is only 104 km in length where as the area of this coastal belt is 83 sq km. Almost all of the annual tourist flow of around 25 lakh happen in this coastal area.

Mining has caused severe problems to the ecology and hydrology of the tiny state and most of these have been intentionally downplayed by every office, be it state or the academicians and others.

Geographically Goa can be divided roughly into 3 categories, Sahyadri watershed, middle plateau and the final flood plains/ alluvial flats. Goa's 11 talukas are divided according to these categories with Western Ghat talukas, Midland talukas and Coastal talukas. Though the 4 coastal talukas of Bardez, Tiswadi, Mormugao and Salcett cover an area of only 24% of the total geographical area, they support 59% of Goa's population. The 4 Midland talukas of Pernem, Bicholim, Ponda and Quepem cover 30% area with a population of 29%, where as Western Ghat talukas covers an area of 46% and are home to only 12% of Goa's population.

Potential threats from Mining Mining has caused severe problems to the ecology and hydrology of the tiny state and most of these have been intentionally downplayed by every office, be it state or the academicians and others. Nearly everyone is involved in mining in some way or other and, no one has tried to assess impacts of mining seriously & comprehensively.

Pumping of water from Cavrem Sheikh Salim mine, severely lowering groundwater table in the village. Photo with thanks from: Sebastian Rodriguez, Mand Goa

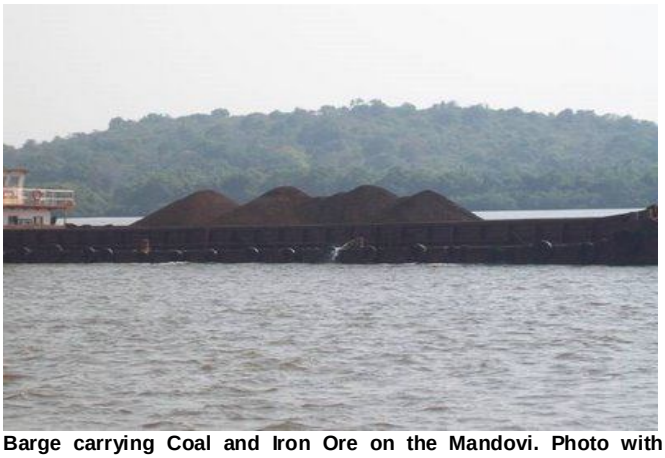
As mentioned above, Goa's North to South length is a mere 105 km length, of which 95 km comes under this mining stretch. There is no parallel in the country to this extensive mining ratio. This stretch literally divides Goa into two parts, West and East. All these mining leases occupy the plateau region of Goa. It is important to note that Goa has 9 major rivers and 42 tributaries which mainly originate in the Western Ghats. During the High tide, tidal influence is felt up to a distance of nearly 40 km inside the river and further upstream movement of the saline water is blocked mainly because of the higher elevation of tributaries and the rivers flowing from the Western Ghats. With the ongoing operation of more than 800 mines in this transition region, it is feared that the insurgence of saline water will move further upstream, severely affecting water availability. The rate at which mining is progressing, this seems to be a matter of just a few more years.

Mining concentrated in four Talukas Mining in Goa is concentrated in four talukas namely, Bicholim in North Goa district and Salcete, Sanguem and Quepem in South Goa district. Some 400 mining leases had been granted in Goa till 2002-03, covering approximately 30,325 ha. Since June 2007, 120 mining projects came up for clearance with ministry recommending clearance for 48 % of the projects .The remaining 52 % of the projects are still pending with ministry but *the environment appraisal committee has not rejected any project.* On an average 2.5 to 3 tonnes of mining waste have to be excavated to produce tones of iron ore and approximately **55 million tones of waste will be generated every year**. This is a huge quantity. The impact would be much more significant as most of the proposed mining leases are surrounded by agricultural field and since rainfall in the region is very high, overflow of mining waste will cause extensive damage to agricultural land and water bodies. If proper action is not taken by Ministry of Environment and Forest, than surely these small projects will eat up the existing forest and natural resources and after few years leave behind exhausted pit filled with water. (Centre for Science and environment *Mining in Goa*)

Mining and Mandovi River-Life line of North Goa River Mandovi is the largest river in Goa and is known as

the life line of Goa. The river emerges in the Western Ghats, moving westward and meets the Arabian Sea after draining a forested area of around 43500 ha. Basin area of Mandovi is of 1549.8 sq km. More than **27 of the largest** mines operate in its catchment area with numerous loading points available to load barges with iron ore for shipment to mainly China since 2004. These mines together generate about 1.01 lakh tonnes of rejects per year (Centre for Science and Environment, *Rich land Poor People: Is Sustainable mining Possible*?). According to studies conducted by Dr Sengupta, from the National Institute of Oceanography, 70000 tons of iron particulates get deposited in river Mandovi every year! With rainfall of more than 120 inches and open cast mining on the hills, huge mountains of mining rejects reach this river which is getting heavily silted.

Mandovi is also known as Mhadei in its upper course in Sattari, one of the talukas from Western Ghat. *There are 6 mining leases here within a distance of just 1 km and a Dabose Water Supply Scheme, supplying drinking water to Sattari and nearby region!*



Barge carrying Coal and Iron Ore on the Mandovi. Photo with thanks from: http://mandgoa.blogspot.com/search/label/Mining

19 mines within 500 m of Selaulim dam: Chief Minister Digambar Kamat agrees The state govt has admitted that 19 mine sites are located within 500 m of Selaulim water reservoir. As per the reply tabled in the legislative assembly by chief minister Digambar Kamat, of the 19 mining sites, 17 are within 200 m of the reservoir. Kamat also conceded that nine of the mines that extract iron ore and manganese, from these sites do not have environmental clearance. (Times of India, 230311)

Mining and River Zuari- Life line of South Goa If Mandovi is most important river of north Goa, Zuari is the lifeline of South Goa. This river has a basin area of 973 sq km and also emerges from the Western Ghats. More than of the 10 largest mines operate along the river and play havoc with it. These mines are generating 3330 tonnes of rejection /day, which ultimately find place in the river during monsoon, get deposited on the river bed and affect the riverine ecosystem very severely. The river banks are dotted with numerous loading points, destroying its riparian belt.

Mining and Drinking Water The River Khandepar is an important river on which the first project to supply water was installed by Portuguese in 1954. Its called Opa project has a capacity of 115 million litres per day (mld) and supplies water to Goa's 30% of the population, including capital city, Panaji, Ponda and 55 villages. This river has 21 mines in its catchment area within a distance of just 1 km! The river is massively silted yet the Water Resource Dept does not take action against the polluters. PWD Engineers, on the condition of anonymity claim that in monsoons, the mineral laden mining dumps clog the pumping system and there are frequent water cuts due to this disruption in pumping. (Times of India 080608)

Destruction of estuarine biodiversity Back in 1986, a report concluded that the benthic (estuarine bottom) fauna like clams in Mandovi and Cumbarjua canal estuarine system of Goa have been severely affected by massive inflow of mining rejects and the resulting environmental stress has caused irreversible ecosystem instability. Reduced dissolved oxygen concentration; high suspended solids and blanketing of bottom deposits by mining rejects, has resulted in more than 70% reduction in clam production; near extinction of resident fauna and the appearance of a low diversity bottom fauna, comprising of tolerant but vagrant species. Ever increasing entry of mining rejects, which has reduced the healthy and highly productive estuarine environment of 1972–73, into an impoverished biotope, in less than 10 years, unless prevented will result in the total extinction of estuarine life in the near future. (A H Parulekar, Z A Ansari, B S Ingole,1986, *Effect of Mining Activities on the Clam Fisheries and Bottom Fauna of Goa Estuaries India,* Proceedings of The Indian Academy Of Sciences Animal Sciences) There are very few such studies available currently which compare the 1986 condition with the current condition, with many fold rise in inflow of the mining rejects.

The turbidity levels of Kahndepar water go beyond 2000 NTU (Nephelometric Turbidity Units) during monsoon whereas the water treatment project has capacity to treat water with maximum turbidity of just 200 NTU! So 30% of the population of Goa gets MINERAL WATER in the true sense, encouraging health problems like dysentery, diarrhea mainly amongst the children and the aged. The siltation has also reduced water holding capacity of the river. Hence the Govt has begun pumping water from another river to add to the water in river Khandepar.

Mining in Selaulim Reservoir Sanguem is the largest taluka of Goa with an area of 836 sq km. This Taluka has to its credit 295 mining leases. It has a forest area of 578

sq km with Goa's largest reservoir called Selaulim which supplies water to 55% of Goa's population. The irony is that people from Salcett Taluka hold maximum mining leases in Sanguem and consume 23% of the total water supplied, where as Sanguem people consume only 2% of tap water. There are more than 15 mining leases in the catchment of this reservoir. There are illegal mining operations in the catchment area, adjoining the reservoir banks, endangering the reservoir and rapidly increasing its siltation rate.

It virtually means that these two water sources which supply water to 85% of Goa's population are under severe threat from mining. This will have impact on drinking water supply to people in near future. The Tourism Department was quoted in Economic Survey (Page 194) of Government of Goa, "The Government pipelines are either dry or do not have capacity to cater to the need of the tourism industry." Suggesting the "...commissioning of the Tillari project (in Sindhudurga, Maharashtra) at the earliest."

Mining near and inside Selaulim reservoir. Photo: With thanks from Sebastian Rodrigues

This is indeed shameful. Goa has 9 major rivers and 49 tributaries, all perennial water bodies, Goa gets 120 inches of rain annually, yet, in order to support its population and the economically important tourism sector, Goa has to look to Maharashtra for water. All this because of absolutely no regulation of the mining sector which is controlled and dominated by the politicians and people in power, making it difficult for the common man to even dare raising voice against the unlawful deeds.

Goa Water Resource Department The WRD does not have any data on the pollution or siltation of the water bodies in Goa due to mining. When asked under RTI on the ground water status for Goa, they provided a report prepared in 2004, jointly by CGWB & WRD–Goa, which is completely misleading. It in no way represents the true picture of Goa, but bases its conclusion on studies done for mere 14% of the total geographical area. All the mining activities are in the talukas having more than 59% of Goa's area where no study is done as per their answer to my specific question related to these talukas! Further out of 105 mines under operation 60% are operating below the ground water level (as per the Regional office MoEF Bangalore, stated in a joint meeting with mining people)!

Looking at the immense harm the Mining sector is doing to the water resources in Goa, one would expect the State Mining Policy to lay guidelines for protecting the water sources. However, the policy does not even acknowledge the impact of the mining on rivers and water bodies and does not lay any guidelines regarding distance of mines from water bodies, sustainable waste disposal, etc.

Policy Responses Goa has a Draft Mineral Policy (2008) and has recently drafted Forest Policy but there is no River Policy or Water Policy. Looking at the immense harm the Mining sector is doing to the water resources in Goa, one would expect the State Mining Policy to lay guidelines for protecting the water sources, however, the Policy does not even acknowledge the impact of the sector on rivers and water bodies and does not lay any guidelines regarding distance of mines from water bodies, sustainable waste disposal, safe transport of ore from rivers, etc.


Mounts of mining waste, with Selaulim reservoir in the background. Photo: Ramesh Gauns

Goa is preparing a Vision Document on the eve of Golden Jubilee year of Liberation, but does not think of having an exclusive policy on water, looking at the threats of mining and pollution threat to drinking water. It is clear that if Goa does not learn its lessons from the harm which has already been done, it will become a water deficient state in few years affecting not only its ecology, but its economy and life support systems too.

Ramesh Gauns (rsdgauns@yahoo.co.in)

Blue Rivers of Meghalaya

The Lukha river, which originates from the Nongkhlieh Elaka and flows along the Narpoh reserve forest of Jaintia Hills, Meghalaya, is one of the main rivers that run through the district and drains itself into the Surma valley in Bangladesh. In January 2007, the colour of the river changed noticeably blue, and a big transformation swiftly followed. "The colour started changing first, and then simultaneously all the fish started dying. There was a foul smell lingering in the air for days, and thousands of dead fish were pushed to the banks", describes the headman of Sonapur village, recollecting the event that shocked the locals.

The Jaintia Hills district is one of the major coal mining areas of Meghalaya, and has several cement plants functioning in the district. Excessive and unregulated mining has left extensive scars on the land and caused extreme environmental damages.

The Blue Lukha River of Jaintia Hills

How the Waikhyrwi River was destroyed

Many rivers in Jaintia Hills have been at the mercy of unregulated and illegal mining especially in Khliehriat Civil Sub-Division, leading to acute water shortage due to the acidic nature of many rivers and water sources caused by acid mine drainage. In Kheiehriat, the Waikhyrwi River has been diverted to facilitate coal mining on the river bed. A deep coal mine shaft has already been dug on the dried river bed and coal is deposited along it and the river's bank. During the rainy season, as the river gains strength, the mine shaft will act as a drain that will divert the river underground, leading to its unnatural death. When the state Pollution control board officials visited the river, they observed that around five metres of the natural course of the river had been diverted to facilitate coal mining on the river bed. The diversion and mining of a river is a serious violation of the (Prevention and Control of Pollution) Act, 1974 Section 24 sub-section (1)(a) and (b). (The Meghalaya Times 040211)

Even though the monsoons that year brought back the characteristic murky brown colour of the river, December 2007 saw a resurgence of the fear in the minds of the locals, as once again the river turned blue. "There has been a loss in our livelihood, in our way of life and in fact in our culture as well", says the headman. The river which attracted hundreds of fishermen from all over the hills and neighbouring states now has empty banks. The various fishing competitions have stopped, and "... a river which never allowed people to return empty-handed is now devoid of its own life." The Lukha, once known for several varieties of fish, today has no traces of aquatic life. Ironically the name 'Lukha' literally means 'reservoir of fish' in the local Pnar language, as it is considered to be derived from the words Tluh meaning reservoir and Dokha meaning fish. The situation remains the same in 2011 as I write this.

Promise of better mining policy? Meghalaya deputy chief minister Bindo Lanong, who also holds the mining and geology portfolio, said the proposed mining policy for the state would have provisions to maintain ecological balance. Replying to a call attention motion by Opposition leader on the "death" of rivers in Jaintia hills because of mining, Lanong admitted that mining in the state was largely unregulated at present. This resulted in the pollution of major rivers. "The government will set up advisory and empowered committees to ensure streamlining of mining activities in the state," he said. In case of Lukha River, "It was seen that the waste water coming from coal mines carrying toxic metals had contaminated the water and sediments. The acid, iron and sulphate content, which were found to be higher in the samples, was the main reason for damage to aquatic life," Lanong said. (The Telegraph 240311)

The loss of fish has meant the loss of livelihood. With their main means of income taken away, most of the people are struggling to make ends meet. In 2007-8, the Meghalaya Pollution Control Board released an "Investigation Report on the contamination of the Lukha River". The report stated that the river was polluted and had turned blue because of its tributary the river Lunar. The excessive acidity present in the Lunar, the catchment area of which lies in the coal mining region, reacted with the limestone and resulted in the 'blue river'. It also explained that shortage of rainfall in the catchment area of the Lukha, as a contributing factor, since the Lukha's clean waters are unable to meet at the confluence of the rivers in the winter months. But the

locals do not agree, "We have to blame the cement companies. It is after they started functioning that this has happened to us. The coal mines have been there even before that".

The Jaintia Hills district is one of the major coal mining areas of Meghalaya, and has several cement plants functioning in the district. Excessive and unregulated mining has left extensive scars on the land and caused extreme environmental damages. Like the Lukha, several rivers and streams in the coal mining belt have no traces of aquatic life. The river beds are lined with what is called AMD or Acid Mine Drainage which results from the high sulphur content of the coal in Jaintia Hills, giving many rivers in the coal belt a characteristic yellowish red colour. Other rivers like the River Kwai are showing signs of turning blue just like the Lukha River.

Today, unlike any other coal mining areas of Jaintia Hills, Shangpung's terrain is a luscious green marked with men and women working in the paddy fields and meandering streams and rivers where children enjoy an afternoon dip.

The blue water has also meant a serious scarcity of water in the region. Most of the villages on the banks were dependent on the Lukha River for drinking, cooking, washing and various other purposes, since almost all the villages have insufficient water supply. Even the Public Health Engineering Dept's tanks and water connections (which are new to some villages like Lum Tongseng) are at most times dry, especially in winter months.

During the past three years the condition of the Lukha River has never become better as some of the villagers had hoped for; in fact some of the clean small springs that flowed into the Lukha from the Narpoh range have become non-existent. (India Together 270810)

Like the Lukha, several rivers and streams in the coal mining belt have no traces of aquatic life. The river beds are lined with what is called Acid Mine Drainage which results from the high sulphur content of the coal in Jaintia Hills, giving many rivers in the coal belt a characteristic yellowish red colour.

Water Merchants of Jaintia Hills In the coal rich region of Jaintia Hills, water has now become scarce and potable water a rarity. Water is so dear to everyone now that what once was free and in abundance now has a going rate of Rs 10 for a 20 litre bucket.

The shortage of water in the area has been brought upon by the rampant mining activities that started as far back as 1975. According to the Directorate of Mineral Resources, Government of Meghalaya, coal production in the Jaintia hills district annually contributes to nearly 75% of the total coal production of the state, while the coal deposits are attributed at only 7% of the state's total deposits. The nationalised mineral coal is being mined privately in this part of the country. And because of this very contradiction, the coal industry seems to have engulfed the land and its people.

In this scheme of things, several 'Water Merchants' have emanated, who are making a fortune out of this untoward scarcity. Their business is simple. Water is resourced from the natural springs that are still present in the non coal mining areas. It is then filled into water tankers, which travel to places where there is a requirement and then sold.

In So kilo, a village in the Sutnga elaka of Jaintia hills, several water tankers are seen lined up just behind the market and many water merchants are capitalizing on the situation. Like others, his tanks are filled from the non mining areas and are brought to the market from where drums are filled for the sale of water to the coal dumps at Rs 500 per drum. Water is so scarce and polluted that some merchants run a public bath after the market, charged at Rs 5, a significant amount for both the locals as well as the labourers.

For the many people residing in Sutnga and other coal mining areas, the idea of purchasing water is not only new but a reality they are being forced to confront. "We poor people have to buy water little by little, we can't afford to buy entire drums" says Kong Heh (name changed), a resident of Sutnga who along with other women had walked several kilometers to Wah Kwai (a river) to wash their clothes because it was more feasible for them to walk the distance rather than buy a few more buckets. (http://www.countercurrents.org/dkhar250510.htm)

Stories of change While many others wait for a mining policy which was drafted in 2009 and still has not seen the light of day, as a means which will help in regulating mining in the state, the people of Shangpung decided to do things on their own. For several years mining activities in and around Shangpung elaka meant that their paddy fields were destroyed and their main source of water, the river Um-iurem, polluted with no traces of aquatic life. After having faced the brunt for years, approximately 15 years back the people of Shangpung decided to ban the mining and dumping of coal near the villages and the rivers and rivulets of their elaka. These individual steps may be small but they are surely important and vital steps that have benefited the people. Today, unlike any other coal mining areas of Jaintia Hills, Shangpung's terrain is a luscious green marked with men and women working in the paddy fields and meandering streams and rivers where children enjoy an afternoon dip.

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Small Projects, Big impacts: Micro & mini hydel projects in Himachal Pradesh

According to Himurja, Himachal Pradesh Energy Development Agency, 509 Small Hydro Electric Projects (upto 5 MW capacity) with an aggregate capacity of 1299 MW have been allotted in Himachal Pradesh till March 2011. Out of these, 29 projects have been commissioned (http://himurja.nic.in/smallhydro.html). Himachal Pradesh Fisheries Department has already processed the 'No Objection Certificate' applications for 232 small hydel projects, of which just 7 have been rejected (some of them have been dropped by the project proponent) (http://hpfisheries.nic.in/nochpp.htm).

It is generally believed that mini and micro hydel, run of the river projects are green and have very little or no impact on the local ecology, river flows and water availability. We are now realising how unfounded this belief is.

Kuhls Kuhls are a traditional irrigation system in Himachal Pradesh- surface channels diverting water from natural flowing streams (khuds). A typical community kuhl services 6-30 farmers, irrigating an area of about 20 ha. The system consists of a temporary headwall (constructed usually with river boulders) across a khud (ravine) for storage and diversion of the flow through a canal to the fields. The kuhl was provided with moghas (kuchcha outlets) to draw out water and irrigate nearby terraced fields. The water would flow from field to field and surplus water would drain back to the khud. The kuhls were constructed and maintained by the village community. At the beginning of the irrigation season, the kohli (the water tender) would organise the irrigators to construct the headwall, repair the kuhl and make the system operational. (www.rainwaterharvesting.org/rural/Traditional3.htm)

Most of these hydel projects are being developed by private players. It is generally believed that mini and micro hydel, run of the river projects are green and have very little or no impact on the local ecology, river flows and water availability. We are now realising how unfounded this belief is. Especially for our country where stringent monitoring of environment regulations is absent and where it is very difficult for weak stakeholders to know the complete picture and resist inequitable changes. Small hydel projects can balance their ecological and social impacts only if they involve inclusive planning with active participation of local stakeholders from planning stage and if they adhere to environment regulations strictly. While these prerequisites are absent, small hydel projects can also result in large negative impacts, as following case studies indicate.

Small hydel projects can balance their ecological and social impacts only if they involve inclusive planning with active participation of local stakeholders from planning stage and if they adhere to environment regulations strictly.

***Rivers as irrigation systems,* Case of Kholi Khad, Kangra** Kholi Khad Mini Hydel Project in Kangra was planned by the State Electricity Board and sanctioned as a run of the river project. However, the water availability calculations of the hydel project proponent were erroneous (as has been the case many times) and in order to generate power, water has to be stored regularly. This has severely affected water releases to 4 irrigation Kuhls, which irrigate about 2500 ha of 12 Panchayats. Now, water is released downstream only when sufficient water for power generation is accumulated in the storage weir.

Dead Fish downstream the Gaj II Project *Photo: Ramesh Ganeriwal*

This has completely disrupted the irrigation cycle of the area, and crops have to go without water for many days. Farmers have to irrigate their fields at night, when water is suddenly released. Electricity Department has taken no cognizance of the concerns of the farmers, either before undertaking the project (in terms of securing NOC's from the concerned Panchayats) or in the current operations of the project.

Rivers support life, Case of Gaj II HEP, Kangra Gaj II Hydroelectric project built by a private player has recently been commissioned in the Kangra district of Himachal. This dam has taken away all the irrigation water of the downstream farmers, who have been making representations to the district authorities about water availability right from the construction phase. Currently, there is absolutely no water in the 'Kuhl" which used to irrigate 30 acres of farmland and support over 60 farmers.

According to the Environmental Regulations, the proponent had taken NOC from a Panchayat. But the project proponent took it not from the village that has been affected, but from a neighbouring village. Presently, these farmers face the grim prospects of losing their standing wheat and other crops and have made an urgent appeal to the DC, Kangra for the immediate restoration of their water while the matter is taken up in appropriate forums.

The activists again sent letters questioning this callous and irresponsible stand of the HP Government, whose main aim should be protecting the interests of its wider population and not some private companies.

Running Water Fish Culture Units in Himachal *Photo: HP Fisheries Department*

The project does not even follow HP State Notification (2005) that requires developers to release at least 15% of the (minimum annual observed pre project) river flow downstream, as a minimum ecological flow (that itself is a very inadequate quantity to sustain the social and ecological needs of the downstream riverine area). Dead fish on a parched river bed is a common scene here. More than 11000 families in Himachal Pradesh depend on fisheries to make a living.

Issues of transparency When activists demanded related project files from the State Electricity Board, they were told that the information cannot be disclosed, as it deals with 'third party information'. When the activists again sent letters questioning this callous and irresponsible stand of the Government, whose main aim should be protecting the interests of its wider population and not some private companies, they were provided with some of the correspondence but the Board has not responded as to how to solve this major impact of small hydel dams. No steps have been taken to ensure the minimum stipulated 15% release from the Gaj II project. Interestingly, this project, which has negatively affected local population as well as the ecology of the area and is making no efforts to ameliorate it, has applied for carbon credits under the UNFCCC Clean Development Mechanism (CDM). (eco2data.com/project/61485)

Ramesh Ganeriwal (ramesh@ganeriwal.us)

Himachal Fisheries Department compromises rivers for money Himachal Pradesh Fisheries Department has issued a list of rivers and streams in the state which support rich feeding and breeding ground of fish and are home to endangered species like Golden Mahseer (*Tor putitora*), Mosal Mahseer (*Tor mosal*), Mahseer (*Tor tor*), Blue Perch (*Badis badis*), Indian Torrent Catfish (*Amblyceps mangois*), etc. (Threatened Freshwater Fishes of India, National Bureau of Fish Genetic Resources, 2010) This list known as the 'Negative list' is like a guideline for *in situ* (conservation in their native habitat) conservation of fish. However, dams are rampantly being commissioned in these very 'Negative' listed streams and khads by paying a nominal amount to Fisheries Department as Fisheries Development Fund. Till now, the Fisheries Department has sanctioned 225 projects in these stretches and has rejected only 7 projects of which some have been non-viable due to other reasons.

Even more surprising is the fact that when Chanju I 36 MW Hydel project on a small tributary of Ravi came for Final Environmental Clearance before the 47th Expert Appraisal Committee (EAC) Meeting on 26.02.11, the minutes of the EAC note that *"No fish were reported in the glacier fed stream. The Proponent has the necessary certificate from the Department of Fisheries."* (http://164.100.194.5:8081/ssdn1/getAgendaMettingMinutesSchedule.do?indCode=RIVFeb%2026,%202011)

In reality, Chanju Nallah is listed in the sites for *in situ* conservation of fish and the proponent has paid a token amount of Rs 19.6 lakhs as Fisheries Development Fund to the Himachal Fisheries Department. These errors highlight the fact that the rich and thriving riverine fisheries have no value in hydro project decision making process. Add to this, riverbed mining for sand, boulders and minerals is also ensuing in the region. The boulders, pebbles and river sand not only provide habitats to endangered fish like Hill Trouts, but they also stabilize river banks and maintain water levels. Their indiscriminate mining destroys all this.

Himachal Pradesh Fisheries Department is one of the few Departments in India to bring out an insurance scheme for Fishermen fishing in the State's reservoirs. Ironically, it seems that people who are in real need of such insurance are small time riverine fishermen whose livelihood is being taken away through the numerous large and small hydel dams planned and operating in the state. Will they qualify for insurance too?

Parineeta Dandekar

Subarnarekha: A Streak of radioactive pollution?

The National River Conservation Directorate functions under the MoEF, with the mandate of working towards clean rivers. It is ironical to see what this body has to say about serious threat of radioactive pollution in Subarnarekha: *"While most rivers in the country are classified -- depending on the pollution load -- on a 'best designated use basis**,** the Subarnarekha defies any classification, **as the existing parameters do not include radioactivity**."*

This is a very disturbing statement as criteria of 'Best Designated Use' are not just criteria but also indicators of how a river should be used. When the NRCD says that Subarnarekha defies any classification, how do the numerous users, including, villages, city and towns assess water quality? SANDRP's letter to the Union Environment Minister dated March 30, 2011, urging urgent action about monitoring and standardizing radioactivity in water sources remains unanswered.

Subarnarekha mined and destroyed The river originates in the Chhotanagpur plateau of Jharkhand in eastern India and enters the Bay of Bengal after a 452 km journey. Though there are 15 water quality monitoring stations, the Subarnarekha is a receptacle of wastewater (urban as well as industrial) from three major townships - Jamshedpur, Ranchi and Ghatsila. Between Mayurbhanj and Singhbhum districts, on the right banks of the Subarnarekha, are the country's richest copper deposits. The proliferation of unplanned and unregulated mining and mineral processing industries has led to a devastating environmental degradation of the region. Improper mining practices have led to uncontrolled dumping of overburden (rock and soil extracted while mining) and mine tailings. During monsoons, this exposed earth flows into the river, increasing suspended solid and heavy metal load in the water, silting the dams and reservoirs. Quarrying of construction material, such as granite, basalt, quartzite, dolerite, sandstone, limestone, dolomite, gravel, and even sand, has created vast stretches of wasteland in the river basin. Used and abandoned mines and quarries are a source of mineral wastewater and suspended solids.

The radiaoactivity in Subarnarekha River water comes from Uranium ore tailings from the Jaduguda mines operated by Uranium Corporation of India Ltd, causing various degrees of radioactivity along a 100 km stretch. It has three productive uranium mines, all within a 5 km radius: Jadugoda, Batin and Narwapahar.

The uranium ore is mined from underground and brought to the surface. Uranium is then extracted and processed to make 'yellow cake', an ingredient used to fuel nuclear plants. What is left behind are 'tailings' or effluents comprising radioactive products, which are mixed into slurry and pumped into tailing ponds. These ponds, each covering about 160 ha of land and about 30 m deep are situated between adjoining villages.

No standards have been met in the construction of the ponds and no measures taken to control the emissions. Overflow and seepage from the tailing ponds ultimately ends into the streams that feed Subarnarekha. These radiations pose the greatest threat to human health, as they harm living cells, often leading to genetic mutation, cancer and slow death.

The Jadugoda Nuclear LEAK On 24 December 2006, in Dungridih village near Jaduguda, a pipe burst, discharging radioactive waste into a nearby rivulet. The pipe was being used to move the waste from a UCIL plant to a storage dam. No alarms went off at the plant, nor did anyone from the mill bother to warn the village people about the leak – although some Dungridih villagers did quickly alert UCIL officials. Lethal sludge continued to leach into the water for nine hours, killing fish and affecting nearby and downstream communities that depend on the watershed for both fishing and irrigation. Anil Kakodkar, the head of the Indian Department of Atomic Energy, when he visited Jaduguda in early February, noted only that there had been a "small" leak in the pipeline, and hastened to say that it was of no risk to anyone. According to Shri Prakash, a local documentary filmmaker and activist, the company has removed some of the sludge, but much of it remains on the banks, covered by mud. It is still not clear why the pipe burst. Nor did UCIL make any effort, then or later, to provide an alternative supply of water to the affected community. (Lina Krishnan, Jadugoda Fallout, Himal 2007)

Under the national river action plan, Subarnarekha has obtained 32.22 crores from the Ministry of Environment and Forests. This has been used only to set up sewage treatment plants in the three basin cities. According to R.K. Sharma, MoEF, "It is the job of the Jharkhand Pollution Control Board to ensure that wastewater from industries and mines does not exceed designated permissible limits," he adds. The Central Govt would not like to see beyond untreated sewage and address serious issues like radioactive pollution and its impacts on the tribals living in the vicinity.

Looking at the major concerns over radioactive levels in Japan's water supply following the blasts in nuclear power plants at Fukushima, the least we can do is to include radioactivity as an important criteria while testing water samples from rivers and groundwater.

The uranium content in the drinking water has been on a steep rise in the Malwa region of Punjab and has increased many-folds compared to the earlier detected levels. Cases of developmental problems, retardation, cerebral palsy, premature deaths in the Southern Malwa region of Punjab have been attributed to pathologically high levels of Uranium in drinking water and environment. (MoEF Website, www.rainwaterharvesting.org, The Tribune, 240211)

Maharashtra amends water authority bill, cabinet gets unaccountable water allocation powers

In a very significant development, the MWRRA (Amendment) Bill, 2011 which in its previous recent versions allowed a high-powered ministerial committee, chaired by the water resources minister to decide sectoral allocation of water, has been revised again and now, the power will vest with the cabinet. The Legislative Council ratified the new version of the bill, within hours of Chief Minister Prithviraj Chavan making the changes. The Assembly had passed the earlier version of the bill past the midnight hours when there were very few MLAs present in the assembly, triggering a wave of protests across the state. The only ray of sunshine is that the revised bill gives priority to agriculture over industries in use of water, however, in absence of norms to implement the priorities, this may not really help much.

"We know how easily the ministers will be manipulated by the private sector. The farmers here had actually pooled in money for a storage battery and were glued to the TV like a cricket match in the hope that good sense will Prevail; but we were disappointed at what this 'pro-poor' govt has done," said Sanjay Kolhe of the Kisan Ekta Manch, Yavatmal, an outfit which burned deputy chief minister Ajit Pawar's effigies in protest immediately after the bill was passed by the assembly.

With the deciding power vesting with the cabinet, industry is likely to get priority over farming. The govt has also silently given sanctions to all previous decisions to divert water from farming to industry and farmers and civil rights groups are urging the Chief Minister to cancel all such prior decisions taken by the ministerial committee on water diversions.

Maharashtra is the only state where till now, industry got preference over farming, this despite the fact that only 18 % of the total area under cultivation has irrigation — less than half the national average of 44 %.

"The govt diverted more than 1500 mcm (million cubic meters) water (over and above the existed quota) from 38 dams for non-agriculture purposes. The diverted water could have irrigated at least 3 lakh ha, mostly in Vidarbha," the Pune-based Prayas Research Group said in its report last year. In its analysis, Prayas said 54 % of the water went to industry and 46 % for drinking water needs, majority to urban conglomerates. Within the industries, 61 % water was allotted to power plants (mostly in western Vidarbha), 21 % to Maharashtra Industrial Development Corp areas, and 16 % to SEZs.

The Bill will severely affect Vidarbha region, already infamous for farm suicides. On July 1, 2006, when Prime Minister Manmohan Singh, announced a Rs 3750 crore special relief package for the six most suicide-prone cotton-producing districts of western Vidarbha, a major chunk of it — Rs 2,375 crore — was allocated for completion of pending irrigation projects. The explanation was that lack of irrigation was a major reason for poor productivity and a raging agrarian crisis, with only 3 % of the nearly 20 lakh ha cotton area under protective irrigation. In the last five years, the state govt has pumped an additional Rs 2,500 crore into these projects. Now that many of those projects are complete or nearing completion, over 80 proposed private power projects have queued up for water. About 12 have already got their quota, and others are in the process of getting it. *Out of 65 applications for diversion of water from irrigation to industries, 51 were in Vidarbha.*

Farmers across Vidarbha, are up in arms BT Deshmukh, a former legislative council member and an expert on development of Vidarbha, has filed a petition in Bombay High Court challenging the committee's decision to give water from the upper Wardha dam in Amravati to India Bulls under-construction coal-fired power project. The committee has also allotted 35.92 mcm water to the Amravati Power Project from the same reservoir, which has a total capacity of 500 mcm. Water allocation to the two plants would together reduce the area under irrigation from the reservoir by 32,739 ha, according to the minutes of the high-powered committee.

HC to hear plea against power project on June 6 The Bombay high court will hear a bunch of petitions opposing a thermal power plant being set up by Indiabulls Pvt Ltd primarily because of the state government's decision to allocate 87.6 mcm of water to the project. The state had on Dec 17, 2007, permitted Indiabulls Pvt Ltd, formerly Sophia Power Company Ltd, to set up a 2,640 MW power project at a cost of Rs 14,000 crore in Amravati under the mega power policy.

Indiabulls has filed a counter-petition seeking directives that it should be declared that the governor had no power to issue directives for allocation of funds for a particular (irrigation) project and it would not be binding on the state legislature. The petitioner, the Society for Backlog Removal had filed a petition seeking that the govt be made to implement directives from the governor for removal of a backlog of irrigation development in backward regions in the state.

The petition said that thousands of farmers in Amravati district would be deprived of irrigation facilities due to the govt's decision to allocate 87.6 mcm of water to the thermal power project. The petition has sought quashing of the govt's order allocating water to the thermal power plant. It said the backlog in the irrigation sector of Amravati division on April 1, 2007, was Rs 2,477.65 crore, which was 77% of the total irrigation backlog in the state. (The Hindu 180411, DNA 200411, 210411, Press Trust of India, Times of India 20411, see also the cover story in March 2011 issue of "Dams, Rivers & People)

BOOK REVIEW

In Search of Yamuna

This book **(In Search of Yamuna: Reflections on a River Lost by Sarandha, Published by VitastaPublishing Pvt Ltd (New Delhi), 2011, pp 290 + xxii, Rs 400)** is indeed very readable, important, useful and timely. Not just because it is the first book by a young author. Not just because the author is an artist as well as an activist. Not just because the book is attempting to look at the River flowing through the India's National Capital in mythological, historical and contemporary context. Not just because there are so few books on the lifeline issue of rivers, particularly treating the subject in popular way, in a way that includes society, culture, politics and ecology. But also because it is written by a youngster in a way that should appeal and interest the younger generation of Delhi, the river basin and the country. Also because the book shows in how many varied ways can a river (or a mountain or a valley or a forest) be precious and important to different people connected to it.

As Delhi remembers that it was exactly 100 years ago in 1911 that King George V shifted the capital to Delhi, it is good time to read a book on how the capital has treated its life sustaining ecological resource. The book is also timely since the voices against the way our system is treating the river is gathering storm and among other consequences, thousands of people camped in Delhi in April 2011 with a single point demand of making the Yamuna alive.

In the book Sarandha is asking a lot of Yaksha Prasnas on Yamuna River involving a lot of WHYs. And then taking up the role of the Yudhisthir, is trying to answer them. Here one is reminded of a few lines on rivers from the famous poet Faiz Ahmed Faiz, whose centenary is also being celebrated this year.

ऐसा ना हुआ, हर धारे में
कुछ अनदेखी मझधारें थीं
कुछ माँझी थे अनजान बहुत
कुछ बेपरखी पतवारें थीं

अब जो भी चाहो छान करो
अब जितना चाहो दोष धरो
नदियाँ तो वही है नाव वही
अब तुम ही कहो क्या करना है
अब कैसे पार उतरना है

The book begins raising contradiction between the way India's culture, religion, festivals look at rivers and what is the state of rivers in India. Indian govts that monopolise the governance of rivers have shown absolute callousness in the way rivers are treated. Recently, Sunita Narian rightly said we need a culture of debate, dissent and discussion rather than arrogance, silence or poor science that prevails in our governance. But our rulers have so little faith in our people that they refuse to move an inch in democratising planning, decision making or governance in development, even for the common property resources like groundwater, flood plains or rivers. India has no policy or law governing the rivers. Every river has been killed several times over by dams, hydropower projects, diversions, encroachment and pollution. But there is no assessment of the services that a river provides to various river front people and society in general. In our govt's scheme of things, the services provided by rivers have zero value.

The National capital, incidentally sets the worst example by the way it treats the river Yamuna. The capital takes away all the freshwater (in at least 9 months of the year) and sends all the untreated and semi treated sewage into the dewatered river. And now Delhi is asking fresh sacrifices in terms of Renuka dam. As Union Environment Minister Jairam Ramesh recently said, how can the city ask for more water when its losses are above 40%? And most shockingly, the Planning Commission is acting as an agent for pushing Renuka dam for the profligate Delhi.

Sarandha's narration of history of the city and linking how the city got and used its water over the different dynasties is racy in substantial parts, though at places she could have been slightly careful in not showing her biases. It would help to be aware of the prejudices one carries around. Sarandha does pretty well as Yaksha, asking many searching questions, which is great. Answering the Yaksha questions in her role as Yudhisthir, she possibly could have done a bit better. And I do wish, for the sake of all of us, that she succeeds in her search for the River.

The book should be read by all the Delhiites, all the residents of the Yamuna basin and everyone else concerned about the future of our rivers and water, old and young. One also hoped that it inspires them to do something about the river that flows through their cities, villages, river basins. One also hopes that it leads to more such books. The book also needs to be translated into Hindi and taken to the river front communities who are focus of Sarandha's efforts. And one also hopes that she continues to work and write on this important issue.

With apologies to the poet Sarandha, (since I have taken the liberty of changing a few words here and there) I will end with these latest lines from a poet.:

क्यूँ बन जाती है हर नदी एक कहानी,
ए ज़िन्दगी कुछ जवाब तो दो.
क्यूँ बे-मौत मरती है हर नदी,
उसे जिंदगी तो दो, और दोस्तों, जवाब भी दो!

Himanshu Thakkar

Interlinking of Rivers in Bihar

Bihar is considered a water surplus state. Lalu Prasad Yadav, party chief of Rashtriya Janta Dal, then ruling party in Bihar had said in a public meeting in the conference hall of Bihar Vidhan Parishad on the 2nd April 2003 that he would not allow 'our water' to go out of the state. But his views softened in the month of May the same year when he said that this water is our petrol. This had a different connotation. This meant that if someone is prepared to pay the price, the state wouldn't hesitate to sell it.

Most of the water that passes through Bihar comes from different states and countries and Bihar is only on the transit route of that water. Second Irrigation Commission of Bihar (1994) has estimated that only 19 % of water that passes through Bihar is generated locally while 81 % comes from other places. It states that 70 % of the flow of the Ganga during non-monsoon months is contributed by the rivers coming from Nepal.

If Bihar lays its claim over the water, the Uttar Pradesh, Uttarakhand, Madhya Pradesh, W Bengal and Jharkhand will stake their claims along with Nepal over that water. Dissent is simmering in Nepal over the Kosi and the Gandak Treaty executed in middle of last century and she is hinting towards their review. Bihar acquired cold feet on the interlinking of rivers issue then.

BJP had organized a public meeting on the 11th August 2002 in Patna to discuss the flood problem of Bihar and to find a solution. The consensus that emerged in this meeting was that the issue of constructing dams in Nepal was lingering for decades and their construction was uncertain and the state govt could not escape its responsibility by passing the responsibility of flooding on to the Central Govt. The state must tighten its administrative machinery to face the floods locally. Some political parties feel that the interlinking of rivers is a solution of the problems ailing Bihar but they fail to appreciate that the interlinking of rivers as suggested by NWDA means dams in Nepal first.

As far as Bihar is concerned, it must be noted that the land profile here is virtually flat and the linking will have to be done with the help of canals that would impede drainage that is already stressed. The canals in the state including the important canals like the Tirhut Main Canal, the Saran Canal and the E and W Kosi Canals breach on a mass scale during the rainy season as a routine.

There are six links proposed under the NWDA's ILR plan that directly affect Bihar. These are Manas-Sankosh-Teesta-Ganga MSTG Link, Kosi- Mechi Link, Kosi – Ghaghra Link, Gandak-Ganga Link, Chunar-Sone Barrage Link, and Sone Dam-Southern Tributaries of the Ganga (STG) Link Project. Through this project, it is proposed to link the Kosi to Ghaghra, the Gandak to the Ganga, the Ghaghra to the Yamuna, the Sharda to the Yamuna and take the water to Gujarat through the Yamuna-Rajasthan Link. On the other hand, the Ganga is to be linked to the Cauvery via the Damodar, Subarnarekha and the Mahanadi.

If the state of the canals and the embankments continue to remains fragile, when the people of the Sabarmati or the Cauvery basin would be waiting for the Ganga water to reach them, the Govt of Bihar would be floating tenders for repairing the breaches in its canals. This would also be the time when the water level in the canals would be at its lowest and, despite the dams in Nepal, there would not be enough water available to transfer water to other states because the interlinking project suggests that water would be transferred to the lower areas only after meeting the demands of the upstream.

Regarding the environmental impact of the link canals, one thing seems to be imminent that it would lead to severe water logging conditions in the plain lands of Bihar as the proposed canals would behave like an earthen dam for the rainwater and natural drainage of the country leading to stagnation of rain water. It is unlikely that the canals would not breach or cut by irate mob of people facing water logging. Seepage through the canals and the use of alluvial soil as the construction material would further worsen the situation. Displacement of the people because of such constructions has always been a contentious issue which never gets resolved.

The RJD Government led by Rabri Devi appointed an Expert Committee (July 2003) to study all the technical components of the NWDA proposal so that the interests of the state could be protected. The committee submitted its report in Dec 2003 and felt that, "…Interlinking of Rivers is the last big effort by the Nation to harness Water Resources of the country." It also observed that the general belief that "there is huge quantity of water available which can be transferred to Southern & Western parts of the country' should be dispelled. The study (by the Expert Committee) revealed that 'available surface water is just sufficient to meet the requirement of Bihar projected for the year 2050 and hardly 2708 MCM is shareable for transfer to other states." The committee was concerned that, "…most of the transfer of water is envisaged from the storage though transfer of water from run-of-the river during monsoon is also proposed."

It seems that NWDA did not bother to look into the grievances of Bihar and that led to the appointment of another committee by GoB in Sept 2004 to look into the seven links that directly or indirectly concern Bihar in view of the suggestion of the Director General-NWDA in the 32nd meeting of the TAC held on 8.9.2003 in New Delhi under the chairmanship of Chairman CWC 'that the ground water should not be considered in the water balance studies as done by the NWDA.' Accordingly, this committee had considered only surface water availability for its study. The committee was further expected to (i)

focus on the flood problem of the state and the Kosi-Ghaghra link should be studied to include the Kamla, the Bagmati, the Adhwara Group of rivers and the Burhi Gandak. (ii) suggest means to maximize irrigation from the Chunar-Sone Barrage and the Kadwan Dam-STG link. (iii) look into the possibilities of irrigation of eastern Bihar with the help of pump canals and also to suggest means to augment flows in the Ganga in the non-monsoon months, (iv) assess per capita availability of water in different basins of the state.

The committee, which submitted its report in April 2005, once again reiterated that "…It (NWDA) completely ignores the problems related to water resource development in the basin from which surplus water is proposed to be transferred… The ILR proposal neither cares about the level of development in the so-called 'surplus' basins vis-a-vis the level of development in water deficit basins it proposes to transfer the 'surplus' water nor it is concerned about the inequality and regional disparities…"

This Expert Committee did a water balance study for the state after the ILR was set rolling at the national scene. The committee came to the conclusion that 76.2 % of surface water yield in Bihar can be attributed to the catchment outside the state and only 23.8 % of it is generated on its own ground. Also, around 76 % of this water is generated during the monsoon months and since the land of the state is virtually flat, there is no chance of storing the water through structural means as dams cannot be built on flat lands.

The committee also observed that Bihar is often misjudged as a flooded country but the areas located south of the Ganga are chronically affected by drought. The cultivable area of South Bihar is 36.82 % of the entire state's cultivable area but the water resources available is only 13.87 % there. Even within South Bihar, there are disparities between different river basins. The culturable area of South Bihar, beyond the Sone Basin, is 24.09 % of the culturable area of the state but water availability in that area is as low as 6.42 % of the water available in the state. Most of the drought prone area of the state is located in this region.

Expert Committee is also unhappy that NWDA has not cared about the high population density and the food requirement of the state that deserves high cropping and hence the irrigation intensity. The report suggests that NWDA has ignored the recommendations of National Commission For Integrated Water Resources Development Plan NCIWRDP (1999) and that of the Reserve Bank Of India (1984) and proposed an irrigation intensity of mere 100 % in new area which is not covered under any irrigation project and proposed to retain the irrigation intensities of existing irrigation projects if it exceeds more than 100 %. No increase in irrigation intensities of existing projects has been proposed by NWDA, if it is more than 100 %. The Committee has proposed an irrigation intensity of 230 to 250 % for the state in view of the possibilities of agricultural development in the given agro-climatic conditions, high density of population and assessed its water requirements accordingly.

The Expert Committee is also skeptic about the proposed westward links of Yamuna-Rajasthan, Sharda-Yamuna and Ghaghra – Yamuna and wants that before any transfer of Ganga-Brahmaputra waters is made to the western parts of the country, needs of W Bengal, Bihar & Bangladesh must be very carefully looked into. The experts are particularly concerned about the Bangladesh as it directly concerns Bihar. The per capita availability of water, particularly in S Bihar is alarming. In basins other than the Sone, the water scarce conditions already exist. It is worth noting that the available water per person in many basins of South Bihar is far less than the water available per capita in the basins of Krishna, Cauvery and Pennar, in Tamil Nadu.

The committee has come out with its own plans for the Intra-linking of Bihar Rivers. After seeing the performance of these links and availability of water Bihar may consider the export of its waters to others. The Chief Minister had promised to the people of Bihar that the work on these links of South Bihar would start in the month of April 2006. An assurance came in Nov 2006 that the work on the Intra-linking of South Bihar Rivers would start in April 2007. What actually happened was that tenders for six different links within Bihar were floated to invite bids for preparing DPRs at that time.

The ILR has a definite relationship with Nepal as the proposed dams in Nepal form an essential component of interlinking of Himalayan Rivers and the success of this scheme depends on these dams. It seems, Nepal has been not been informed officially of India's river linking plans. The Civil Society there seems to be concerned over the issue since the related issues with earlier projects and treaties with Nepal are not resolved yet. The GoI is going slow with these proposals of Himalayan River Links and initial emphasis is being laid on the 16 links of the peninsular India. Bangladesh has opposed this project as she fears that the proposed linking of the Brahmaputra and the rivers of the Gangetic plains is against her interests.

The debate, however, was seemingly terminated when Rahul Gandhi, General Secretary of Indian National Congress, the largest constituent party of the ruling United Progressive Alliance expressed a caution that we should not play with nature on such a massive scale. On 10th Sept 2009 he said at Chennai, '…my personal opinion is that such a move will be disastrous… Environmentally it is extremely dangerous...playing with environment is not a good idea.' Opinion of Rahul Gandhi carries a lot of weight.

After a few days of Rahul Gandhi's statement, Central Minister for Environment and forests, Jairam Ramesh, said in a press conference in Delhi on the 6th Oct 2009,

'…The interlinking of rivers will be a human-ecological-economic disaster. It is easy to do interlinking on paper. Interlinking of rivers has limited basin value, but large scale interlinking would be a disaster.' Both these people indirectly or directly represent the present Govt of India.

Some activists, however, feel that ILR has nothing to do with the change of the Government and the agenda is very much on the anvil irrespective of who rules at the Center. Says Himanshu Thakkar, '…The agenda of interlinking of rivers has been active part of GoI work since 1981 when the National Perspective Plan was made and the next year NWDA was instituted to take up the work of pre-feasibility reports, feasibility reports, and Detailed Project Reports and so on of the interlinking of river proposals. During 2002-2004 phase, the proposals got a lot of media attention following the pronouncements of then President of India and the Supreme Court of India followed by setting up of the Task Force headed by Shri Suresh Prabhu. After UPA came to power in 2004, the media created an impression that ILR is now not on the agenda of the govt. The fact is that ILR has been on the agenda of all the Govts since 1981 and there has not been much change in the emphasis, budget allocations, pace of studies and so on for ILR since then. Under UPA- I and UPA- II, though there have been statements criticizing ILR by Jairam Ramesh (he made such statements earlier too) and Rahul Gandhi, the pace of work related to ILR has only increased, if one sees the increased budget allocations for NWDA in recent years. Since 2006, NWDA mandate have been expanded to take up even work related to Intra State River Link proposals, and not just the project proposals that were part of ILR as is known, at interstate levels. This seems like a new strategy of NWDA, since they know that no state is ready to give water to another state under ILR. So they are pursuing the intra state ILR proposed by various state governments. They are of course encouraging the states to take up those links that were part of or complementary to their original plan and discouraging them to take up those that were not.'

Bihar's Own Intra-linking Program The GOB has come out with its own river linking program. The report says that the Govt of Bihar has the priority of solving the drought problem of S Bihar, flood problem of N Bihar, improving the water logging conditions and ensuring irrigation water through canals to achieve 250 % crop intensity and develop the water resources within the state. There is a plan to identify river links within the state and prepare their Detailed Project Report in such a way that there remains no national or international hitch in its execution but if an opportunity comes sometimes in future, the same could be extended or adjusted.

In order to stabilize and extend the availability of water in the Kosi basin, its linking to the Kamala-Bagmati and Adhawara basins on the west and the Mahananda (Mechi) basin in the east has been identified. Similarly, in the Gandak Project, links with the Baya and the Burhi Gandak have been identified. In S Bihar, the identified links are the Sone-Punpun-Harohar-Kiul for transferring water to deficit basins. Besides, pump canals like the Barh-Nawada Pump Canal & Buxar Pump Canals would be constructed to meet the deficit in their command together with revival of traditional irrigation schemes like those of Ahars and pynes would also be taken.

To reduce the intensity of flooding in N Bihar, arrangements are proposed to transfer water from a high discharge river to a low discharge river and to achieve the objective the Kohra (Burhi Gandak)-Chandrawat (Gandak) link, the Burhi Gandak-None-Baya-Ganga link, the Bagmati-Burhi Gandak (through Belwa Dhar) and the Kosi Ganga link have been identified. The annual report suggests that, out of 18 such schemes, contracts for preparing DPR of following 6 schemes have been signed with various consulting organizations.

1. A barrage near Indo-Nepal border in the Bagmati Multipurpose Scheme.
2. A barrage at Areraj under Gandak Phase-II to transfer the water of the Burhi Gandak and the Baya to feed the canals of the Gandak Project.
3. A barrage near Arawal/Balidad to add to supply of water to the Sone Canal System and lessen the load on the water at the Indrapuri Barrage.
4. Drainage of water of the Mokama Tal and its development for economic gains.
5. A barrage at Baksoti on the Sakri & replacing the Nata Weir by a barrage to link the Sakri and the Nata River.
6. Dhanrajai Reservoir and the Phulwaria Canal Link.

In addition to these six schemes, letters of intent have been invited for preparing the DPRs of the following 12 links/ schemes.

1. The Kosi-Adhawara-Bagmati Link Canal and to initiate Drainage Plan Phase-II, construct a barrage on the Bagmati near the Kataunjha Bridge and development of the Adhawara Multipurpose Scheme.
2. Kosi-Mechi in the Indian portion to transfer water from the Kosi basin to the Mahananda basin.
3. Sone-Kiul Link and the Barh-Nawada Pump Canal (to transfer Ganga water) for the Punpun-Harohar-Kiul basin
4. The Kohra-Chandrawat Link.
5. Burhi Gandak-None-Baya-Ganga Link.
6. The Bagmati-Burhi Gandak Link Canal.
7. The Kosi-Ganga Link Canal.
8. De-silting of the N Bihar rivers including the Ganga.
9. The Karmnasa/Durgawati-Sone Link Canal.
10. A barrage on the Kao under the Sone Basin.
11. Buxar Pump Canal to transfer Ganga water to S Bihar
12. Development of the Badua-Chandan Basin.

The GoB has approached NWDA for the preparation of DPRs of the links 2 to 7 mentioned above and it is already working on the preparation of feasibility and pre-feasibility reports. It is intriguing the GoB has always been charging NWDA of ignoring the interests of Bihar and it entrusts the same NWDA for preparing 6 of its interlinking DPRs. It is also hoped that the GoB would take cognizance of the tapping of water from Karmahia Barrage in Nepal and non-availability of water at the Dheng Barrage proposed in India on the Bagmati. Needless to mention that the detailed project report of the Barahkshetra Dam proposed on the Kosi continues to be non-starter.

Dr Dinesh Kumar Mishra

CLIMATE CHANGE & WATER SECTOR

Environmental flows for Adaptation In Nov 2010, ahead of the climate change negotiations in Cancún the seminar "Environmental flows as a tool for adaptation" was held by the Swedish Water House. The seminar and the report highlight the importance of eflows not only for communities and ecosystems, but for fighting impacts of climate change as well. Environmental flows is the most important factor for maintaining the aquatic ecosystem & only healthy ecosystems have the resilience to adapt to the challenges posed by climate change. In the words of experts, "It would be ridiculous not to include eFlows (in climate change policy) as there is a lot of adaptation in them. People are very focused on the water quality in different areas, but if you are not focusing on the quality of the whole ecosystem you will lose it. And that is what eFlow is about." (http://www.swedishwaterhouse.se)

Nabard climate change adaptation plan The climate change adaptation project in Ahmednagar district sanctioned by the National Bank for Agriculture and Rural Development (Nabard) will help 25 villages cope with climate change and adapt to impending impacts. Regional general manager P Satish said the project will benefit Akole and Sangamner talukas covering 23,245 families. "It seeks to develop knowledge strategies, approaches, measures and processes that would enable vulnerable communities to cope with climate change and adapt to impending impacts," he said.

The project was sanctioned with a grant from Nabard and Swiss Development Cooperation. Advanced weather stations will come up in the area to monitor climatic changes. It will concentrate on watershed development, crop management and increasing green cover for stabilisation of soil and increasing ground water level. The changes in the region will be monitored for five years and suitable technology for crops will be developed. The farmers will be motivated and helped in shifting to alternative sources of energy. The project will be implemented in association with India Meteorological Dept, social forestry dept, Krishi Vigyan Kendra in Mahabaleshwar and Indian Space Research Organisation. Nabard has signed a memorandum of understanding with Mahatma Phule Krishi Vidyapeeth, Rahuri, for 3 years. It will collaborate in the preparation of CDs, VCDs, brochures, pamphlets on agriculture & related activities for farmers, formation of a farmers-scientists forum, conduct training and implementation of seed development programme. (DNA 060411)

Union Cabinet OK to National Water Mission The Union Cabinet has approved the Mission Document of the National Water Mission. The National Water Mission is one of the 8 National Missions which form the core of the National Action Plan for Climate Change. The Mission Document for National Water Mission was drafted by the Ministry of Water Resources in most non transparent way. A two-tier setup has been proposed, one at Central level and the other at State level for framing the policies arid guidelines for implementation of the National Water Mission. At the Central level, an apex Board under the Chairmanship of the Minister of Water Resources and at the State level, a Monitoring Committee under the Chairmanship of the Principal Secretary / Secretary will be constituted.

A Mission Secretariat under a Mission Director to be supported by Adviser (Technical) and Adviser (Coordination and Monitoring) is envisaged under the Water Mission. The technical support to the Secretariat will be provided by Central Water Commission, Central Ground Water Board, Brahmaputra Board and National Institute of Hydrology. (PIB 060411) Unfortunately, the NWM is being used by the MWR to push more big dams, big projects, which will only create more climate related problems rather than solve any. The proposed governance of the NWM is most non-transparent, non participatory.

Inequality & climate Vulnerability Linked A stark illustration of the link between inequality and vulnerability to climate change was the contrast between an Adivasi plot of land and the adjacent paddy rice field in Chapai Nawabganj district - a drought affected area northwest of Dhaka, Bangladesh. The Adivasi spinach plot was drip irrigated by plastic bottles suspended overhead - a low-cost approach to drip irrigation that was making the most of a limited amount of rainwater collected from nearby ponds. In contrast, next door was a field of paddy rice - lush and green with at least a foot of water on the field. The contrast between the two plots sparked an interesting discussion about the policies that govern control of, and access to, water resources. Rich people are better placed to win competitive leases to use ponds and to access groundwater. Achieving change at scale requires a more policy-oriented approach that tackles some of the root causes of inequality.

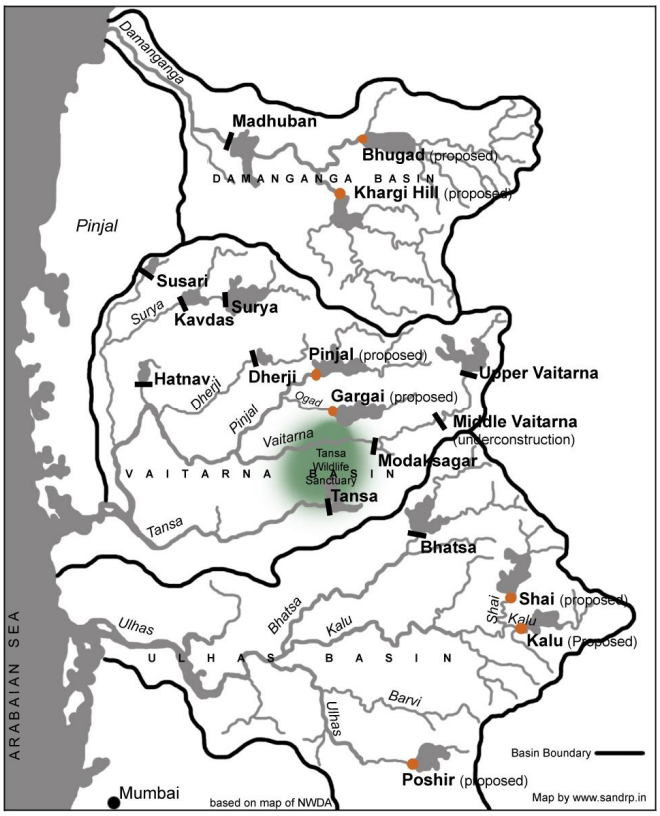
We also need a better understanding of how interventions to improve access to water impacts the wider ecosystem. When planning community level initiatives, development agencies have struggled to understand water systems at the ecosystem level. Collaboration between those familiar with ecosystem-wide impacts and those undertaking development projects could be beneficial. We need to build on what has already been learned about facilitating processes that ensure equitable and sustainable entitlements to resources across a whole ecosystem.

Having funding available for climate change adaptation at the local level is important. With funding comes responsibility and the need to strengthen financial accountability. Greater community organisation and involving these organisations in local govt decision-making were vital first steps to improving accountability. This could help encourage a more pro-poor approach to natural resource management. (Alertnet 300311)

DAMS

More dams in the fragile Western Ghats to quench Mumbai's never ending demands

A number of dams are being planned in the eco sensitive area of Western Ghats to quench the growing, though mostly unjustified demands of Mumbai and its suburbs. These include Shai and Kalu, adjoining dams in Murbad taluka of Thane district where majority population is tribal and where the process of claiming individual and community forest rights as per the Forest Rights Act (2006) is not completed, Pinjal and Gargai in the Wada Taluka, which are on 'fast track' and will submerge thousands of hectares of Forest land and parts of Tansa Sanctuary, and finally Hetawane and Bal Ganga Dams in the neighbouring Raigad District. CIDCO owns Hetawane Dam and will entirely finance Bal Ganga Dam, while responsibility of planning and construction of all the other dams will lie with MMRDA.



Hetawane Dam Struggle against the Maha SEZ and changes in water allocation from Hetawane Dam brought to fore the urgent issue of water distribution priority in Maharashtra. Hetawane dam was proposed in the 1980s to provide irrigation to around 5,800 acres of agricultural land as well as drinking water to Pen and Navi Mumbai. Though the dam was built as per plan, the canals were only partially constructed and hence no irrigation water flows from the dam. When the 10,000 ha Maha SEZ plans were put into action, 25 villages in the Hetawane command area also received land acquisition notices. This was illegal since SEZ rules state that land in a command area or irrigated land cannot be used for an SEZ. *In a bid to overcome this, the Irrigation Department altered the water allocation of the Hetawane dam so that the water would first go for drinking purposes, then for industry, and lastly for agriculture*. A number of local groups, notably the Maha Mumbai Shetkari Sangharsh Samiti fought a long and hard battle against this and finally, the SEZ was denotified. (Frontline Jun-July 2009)

Protests over Bal Ganga Project Now, CIDCO has planned the Balganga Project in Pen taluka of Raigad to supply 350 MLD water to the expanding suburbs of Navi Mumbai. As per the preliminary survey, nearly 13 villages with a pre-dominant tribal population will be severely affected by the project. The project work has already begun and is likely to submerge around 1,240 ha of which 602 ha comprises paddy fields with 265 ha marked as forest land. Locals say that the dam will disrupt the livelihoods of over 8000 people. (Countercurrents.org 110311)

The locals are entirely against the dam and it is reported that till now CIDCO has been successful in convincing only 70 people of the 8000 affected to sign up for the compensation package. Nearly the entire village of Nidholi has been protesting against the project. In the words of a Nidholi villager, "Seasoned politicians as usual are trying to beguile us. What do they take us for? This is our ancestral land and whether govt gives us Rs 20 lakh or more we are just fed up of this, our struggle is for livelihood." (The Verdict Weekly 110311, Countercurrents.org). The administration is downplaying the protests, as usual.

Bal Ganga Dam: For water for the Navi Mumbai SEZ? Though CIDCO claims that this 350 MLD water is for drinking water purposes for the suburbs of Navi Mumbai, there are reports that the water from Bal Ganga will be used for Navi Mumbai Special Economic Zone (NMSEZ). "The govt recently sanctioned 400 MLD water from Balganga River for the NMSEZ project as a permanent source of water.' (DNA 011210). The 2008 Expert Committee Meeting on Infrastructure Projects also notes in its minutes "Water requirement for the project (NMSEZ) is 795 MLD which will be sourced from Balganga Dam on River Balganga and MJP water works on Patalganga, Morbe Dam of NMMC & Hetawane Dam."

However, according to Navi Mumbai journalist PVR Gopal, "Budding new cities like Navi Mumbai have greater chances of arresting water scarcity through proactive sustainable means. Encouraging participation of the larger community in its water management programme as stakeholders and decision makers is also possible with support from civil society institutions.

Blessed in its geographic location, Navi Mumbai is a great catchment area with ample forest cover. More effort should go into creating check dams to stop the run off, instead of displacing the rural poor and demolishing the precious little forest cover." (India Blooms Environment News Service, 170710)

Villagers construct their own dam In Devrung village of Chhattisgarh, villagers have constructed a dam on their own, to irrigate 1500 acres of land, where the crop was dying due to water shortage. The dam, on Jonk River, a tributary of Mahanadi, has been built solely through local contributions in cash and kind without any support from the government. Chhattisgarh Chief Minister Raman Singh made a surprise visit to Devrung and termed the villagers effort 'a highly inspirational work'. (IndoAsianNews Service 230411)

Jharkhand: Private Dam builders spark conflicts In the tribal heartland of Khunti district, Jharkhand, a private company won tender for constructing a dam on Chata River in Jabra village. The villagers and activists say that the company did not follow any prescribed procedures of notifying the local population about the project, conducting a land survey through Revenue Department, or waiting for Gram Sabha's approval before initiating construction, but simply hired contractors who started construction right away. This led to severe conflicts between the villagers and the contractors and resulted in death of a local villager. Only after the matter became this serious did the district administration intervene and put a halt to the project.

Replying to a Right to Information query filed by local activist in Feb 2011, the Water Resources Department says the project did not fall under its purview. The same department had granted permission to start construction in 2008 itself. A local NGO, Dam Prabhavit Sangharsh Samiti, filed three more RTI applications—with the State Water Resources Department, its Khunti district office, and the land acquisition cell of the revenue department. All three replied the project was not under their purview!

This medium irrigation project aims to provide water to 24 villages. The 12-m high dam is to irrigate 3,062 ha of kharif and 1,924 ha of rabi crop. The dam will submerge 365 ha of about 100 families. The Jabra villagers have been protesting against the project. (Down to Earth, 310511)

The Khuga Dam Fiasco Khuga Dam is a multi-purpose project built on the Khuga River in Churachandpur town of Manipur. The project started in 1983 and resumed in 2002 after being at a standstill for a period of time due to opposition. On 12 Nov 2010, the Project was inaugurated by UPA Chairperson Sonia Gandhi without the power component. This turned out to be a false signal, misleading the people and Mrs Gandhi. For, four months after the inauguration, breached canals and breaks were reported during trial runs that destroyed residential and cultivable land. The left and right banks of the canal have breached twice. Ironically, in answer to a question raised by member of opposition, State Irrigation and Flood Control Minister blamed "unidentified persons" for sabotage which resulted in the breach. (The Imphal Free Press, 190311)

According to the audit report of the Manipur Irrigation and Flood Control Department, the original estimated cost of construction was Rs 17.18 crore. As the project continued to be delayed costs escalated to Rs 335.11 crore and the revised date of completion was extended to 2009. (The Statesman, 050311)

There have been flaws in the design of the Khuga Project from the initial stages. The power component of 1.5 MW incorporated into the project's design has now been scrapped. This is because after satisfying the domestic and irrigation demands, there is very little water in the dam for hydropower generation. It has been reported that power component was planned and designed without studying its operational feasibility. It can now be operated for only about 3-4 months in a year when there is excess water. The power house has been nearly complete and a huge pipe laid underneath water for power generation is still drawing water even though there is no power generation. The gate of the pipe could not be sealed till date even as the IFCD had called divers from Kolkata to seal the pipe. (Sangai Express, 260311)

GROUNDWATER

Existing Groundwater in Punjab could be salinised? The direction of water flow in Punjab is from good quality in north east to saline in south west. The fall in elevation of water-table can change the flow of water at the border blocks. All six blocks of Moga district – Nihal Singh Wala, Dharamkot, Moga 1 and 2, Bagha Purana and Barnala where water-tale is declining can face this spectre, says Dr A K Jain, head, Soil and Water Engineering Department, Punjab Agriculture University. The rise in level of brackish water too needs to be checked. An attempt is being made in that direction by developing aquaculture farms in some 1.25 lakh Ha of water logged areas in SW Punjab. There are questions, though, if this will help in the long run. (Financial Express 280311)

GW in Bangalore laced with Chromium, only 0.9% fit for consumption The latest study by the Department of Mines and Geology on Bangalore's groundwater titled *Urban Groundwater Hydrology and Groundwater Quality in and around Bangalore City* has found a staggering 17.75 mg/l of hexavalent chromium, a carcinogenic heavy metal, in borewells in Peenya III Stage part of the city. This is over 300 times the permissible limit of 0.05 mg/l. Citizens have been complaining of blisters and sores (chrome sores) for a long time now and it is only now that the direct link with hexavalent chromium has been established. Hexavalent chromium is a powerful skin irritant, known to cause sores in the nail root,

knuckles, hands and forearms. Such long term exposure to the heavy metal has been associated with cancer of the lungs (when inhaled) and of the intestines when ingested. The concentration of chromium in Peenya area is so high that the water supplied in this area has a greenish tinge. However, with no access to tap water, people have no choice but to depend on this highly contaminated groundwater.

Chrome-plating units The study has traced the source to effluents from chrome-plating industries in the area where the concentration was even higher at **29 mg/l.** The study concluded that only **0.9% of the groundwater in Bangalore is fit for consumption**, while the remaining is contaminated by heavy metals. The results of the study will be sent to agencies such as the Bangalore Water Supply and Sewerage Board and the Pollution Control Board to take action. "The overall exploitation of groundwater in the state is 68%. In Bangalore, it is 120%. We have lost the resources completely. The way forward could be to close borewells, supply water through tankers and Recharge wells," said the Director, mines and geology department. (The Hindu 300311, DNA 310311)

WATER POLLUTION

Bio-remediation Project in Ludhiana The Union Minister of state for Environment and Forests Mr Jairam Ramesh along with officials of his Ministry including the Chairman of the Central Pollution Control Board, visited the site of the Buddha Nala in Ludhiana in Sept 2010. During the visit, he was taken on an inspection of the Nala and was made aware of the debilitating and overwhelming degree to which the Nala had been polluted due to the presence of untreated waste. The Minister ordered site studies to be undertaken and a proposal for an *In Situ Bio-Remediation Project* was drawn up. This method employs the use of microbes to treat the effluents.

By erecting 'Green bridges', i.e. temporary barricades fortified with microbial consortia, the MoEF will attempt to build filters through which the untreated waters may pass. With every successive Green Bridge that the water passes through there will be a reduction in Bio-chemical oxygen demand and Chemical oxidation demand (CoD) levels. These Green bridges will be at set up intervals of 1 Km or as mandated by the flow and quantum of water in the Nala. The impact of this technology is expected to become manifest in 3 months. The MoEF expects the BoD load to be reduced by upto 40% along with an apparent reduction of the surrounding odour. The cost of the entire project will be borne by the National River Conservation Directorate, MoEF. (MEF PR 040411)

Maharashtra faces contempt charges over MPCB appointments Aurangabad-based Nisarga Mitra Mandal has initiated contempt proceedings against the state government for its failure to implement the order of the Bombay high court to appoint qualified persons as chairman and member secretary of the Maharashtra Pollution Control Board. Since 2003, neither the Chairman nor the Member Secretary of the MPCB is qualified as per the observations of the apex court. "In most states, the heads of the pollution control boards were politicians, without any knowledge of environmental protection. In Maharashtra, since 2003, the board is headed by an IAS officer, who is not technically qualified, as is the case with the member secretary," said NSM President Vijay Diwan. Bombay high court had asked the state govt to make substantive appointments as per the norms prescribed by the apex court within three months from 23 Nov 2010. However, till now, neither has the state govt appointed a qualified person nor has it filed an appeal against the court order. (Times of India, 050411)

HYDRO PROJECTS

Mini-hydel projects in Western Ghats put on hold

The Karnataka High Court has restrained all power companies from setting up new mini-hydel projects in the Western Ghats region within the State until further orders. Projects on which work has begun will also be subject to the final verdict. A Division Bench passed the interim order on a public interest litigation filed by the Western Ghats Environment Forum. The petition pointed out that the Western Ghats was categorised as the 16th densest forest region in the world, and the forest cover had depleted by 60 % during the past 50 years. Increased developmental activities in the region have led to severe environmental pollution.

According to the PIL, authorities had permitted 137 mini-hydel projects to come up in the region, and this would lead to severe environmental damage. According to activist Panduranga Hegde of Appiko, the technology may be benign and eco-friendly, but the people and the companies who are implementing them envisage a windfall profit for their investment. And armed with numerous subsidies and CDM benefits, the companies have targeted the most remote regions in the Western Ghats, where natural forests exist, and are the catchment of rivers and streams. Although called mini, most of them do require storage of water, through construction of a small reservoirs. This has to be followed with tunnels to channelise the water, and construction of small power plants. Most of these activities take place in forest areas, leading the destruction of the forest cover.

According to Hegde, it is high time the govt sets up a committee comprising of scientists, engineers and local people to study the long-term impact of mini hydel projects that are causing damage to the environment. There are successful initiatives like decentralised micro hydel systems that have been installed in numerous places in Western Ghats that is supplying power to the villages. (The Hindu 190411, Deccan Herald 260411)

RIVERS

Key issues in the context of demand of release of freshwater into Yamuna round the year

The first mandate of the High Powered Committee constituted in January 1998 following the Supreme Court order in WP 537/1992 was: "To assess the requirement of a minimum flow in the river Yamuna to facilitate restoration of the desired river water quality".

However, the HPC has never fulfilled this mandate. There has been no assessment about the requirement of minimum flow in the river Yamuna as per that mandate. The HPC just **assumed**, based on certain assumptions of earlier committees that 10 cumecs (cubic meters per second) water is sufficient for Yamuna. The Central Water Commission itself has agreed in a subsequent meeting that this figure of 10 cumecs flow is not based on any assessment, but an ad hoc assumption.

This was further confirmed from the minutes of the 6th meeting of the WQAA (Water Quality Assessment Authority) held on 23.05.2008, para 6.4, where it is stated, "It was stated by Director, NRCD, MEF that the figure of Minimum Flows of 10 cumecs to be ensured in river Yamuna does not have sound scientific/ engineering basis… However, after detailed discussions, it was considered that looking at the present polluted condition of the river Yamuna in the stretch between Wazirabad and Okla and below, there is a need to have a minimum flows in river Yamuna of the order higher than 10 cumecs." The WQAA decided to ask for a study for assessment of Minimum flows required in river Yamuna. "The study would take into account the earlier studies carried out in this regard and any Court directions, legal requirements and the agreements on sharing of waters of river Yamuna amongst various co basin states." The study was to be submitted by 30th Nov, 2008, not known if it has been submitted.

Unfortunately, the CWC has been asked to do the above mentioned study, but track record shows that CWC has shown absolutely no interest or intention or commitment in ensuring environment or even minimum flows in the rivers. For example, as recorded in the order of the Supreme Court in IA 17 in WP 537/1992 on 13.5.1999, "Mr A D Mohile, Chairman, Central Water Commission stated that minimum flow in River Yamuna is still being maintained and there is no need to release any further quantity of fresh water in the river." This was when evidence showed that Yamuna had no freshwater flow downstream of Tajewala in at least 8-9 lean months, right upto Etawah where the Chambal River brings some fresh water to Yamuna. This shows that CWC never had any interest in allowing water flow in the rivers and there are many documents that show that CWC believes that such water flow is a waste. Hence such a study would have little credibility if done by CWC, it would need to be done by a credible independent organisation.

Such an assessment is urgently required to be done for the entire stretch of the Yamuna River from Yamunotri to Allahabad. Similar assessment will also be required for the perennial tributaries of Yamuna like the Pabbar, Tons, Giri, Asan, Bata, Hindon, etc.

The contention of the HPC that "with the diversion of the entire treated sewage water away from the river, the 10 cumecs of fresh water will remain fresh in the river throughout" is clearly erroneous. Even if 10 cumecs of water is released all round the year say downstream from Hathnikund barrage, the quantity of water that will reach say Wazirabad in lean season would be almost nil.

The repeated contention of CWC in affidavits before the SC that Haryana is already releasing 160 cusecs (4.54 cumecs) water downstream of Hathnikund (or Tajewala) and another 140 cusecs into Najafgarh drain, which confluences into the Yamuna River downstream of Wazirabad barrage is misleading. Firstly, these flows cannot be added as CWC is doing. Out of the 160 cusecs released at Hathnikund almost nothing reaches Wazirabad. At Wazirabad, Delhi is already taking away all freshwater, and no freshwater flows downstream of Wazirabad in lean season. Secondly, as clearly stated in the order of SC dated 13.05.1999, the 4 cumecs that Haryana transfers to Najafgarh drain is for irrigation purposes in South Delhi. This is NOT for ecological needs of the river. Thus the contention of the CWC is not only misleading, it is tantamount to attempt at misinforming the SC.

Delhi had assured the SC in 1998 that by the end of 2000, Delhi will have adequate capacity to treat all its sewage and after Dec 31 2000, no untreated effluents would flow into the river from Delhi. That is yet to happen. The Delhi govt, the Delhi Jal Board and the MEF should be made answerable for this serious lapse and all concerned must be held accountable. In any case, allocating any more freshwater to Delhi would mean more sewage into the river. Allocating more water to Delhi is also not justified considering that Delhi already gets more water per capita than Paris or Amsterdam (as per Planning Commission, govt of India) and Delhi wastes 40-50% of the water it gets.

Even now Delhi is not showing the necessary seriousness, commitment or time bound plan to ensure that illegal dumping of sewage into the river does not continue. Delhi's sewage treatment plants even now are not working to capacity, nor are they providing the outputs of desired capacity. There is no participatory, transparent governance of the STPs or CETPs of Delhi. The construction of its planned interception sewers is yet to start. But even when that is completed, Yamuna will continue to get untreated sewage from Delhi as the interceptor sewer is going to intercept only a few of the nallahs and there is no known plan to ensure that the installed capacity of the STPs will also increase during this period or that accountable (to people) governance would be in place. Delhi has shown absolutely zero serious attempts at achieving any tertiary treatment of sewage to make it fit for release into the river, in spite of the SC order of 17.08.99. Delhi still continues to destroy local water bodies, refuses to seriously try to harvest rainwater that falls in Delhi, nor is there any attempt at demand side management or curbing non essential water using activities (e.g. water bottling plants or golf courses to name only two). Delhi, in short is providing the worst national example in water management. This behaviour of the National Capital, in complete violation of the Water Pollution Control Act of 1974, EPA 1986 and express orders of the SC is a major reason for the state of Yamuna River downstream of Wazirabad right up to Etawah.

SANDRP

MEF sets up Expert group for River Regulation The Ministry has constituted an Expert Group under the Chairmanship of Shri J.M.Mauskar, Special Secretary, for the formulation of Guidelines for management of River fronts through the River Regulation Zones. The 10 member Group includes, beside the members from the MEF, and a member each from Maharashtra and Tamil Nadu Govt, Shri RC Trivedi, a retired CPCB member and two persons from academic background: Dr Brij Gopal (Retd Prof JNU) and Dr G J Chakrapani (Prof from IIT Roorkee, an institution that is never known to take independent position). The Terms of Reference for the Group is: "To prepare a discussion paper on River Regulation Zones for the purpose of formulating guidelines/ regulations to protect the riverine environment." Ministry of Water Resources and Planning Commission has significant role in river governance but the MEF did not find it fit to include anyone from them. The MEF also could not find any from the non government organisations for this group. So while this is a welcome step, the group starts from some serious handicaps. The group will have its first meeting on May 30. In 2002 the MEF had set up an expert group for the same purpose, which also included Prof Brij Gopal, but nothing came of that exercise.

CCEA clears Rs 7,000 cr project to clean Ganga The Cabinet Committee on Economic Affairs has approved a Rs7,000 crore project to clean the Ganga. It will be implemented by the National Ganga River Basin Authority. The Centre's share will be Rs 5,100 crore and that of the governments of Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal Rs 1,900 crore. The World Bank has agreed in principle to provide a loan of $1 billion (Rs 4,600 crore) for the project, which will form part of the Central share of the eight year duration project. The NGRBA was constituted in Feb 2009 as an empowered planning, financing, monitoring and coordinating authority for the Ganga under the Environment (Protection) Act, 1986. The objective of the Authority, chaired by the Prime Minister, is to ensure conservation of the Ganga by comprehensive planning and management, adopting a river basin approach.

It will have components relating to infrastructure investments, including municipal sewage, industrial pollution, solid wastes and river front management, and project implementation support. The project will also have components relating to setting up dedicated institutions for implementing the NGRBA programme, setting up Ganga Knowledge Centre and strengthening environmental regulators (Pollution Control Boards) and local institutions. (The Hindu 290411)

Himachal HC tough against illegal riverbed mining The Himachal Pradesh High Court has taken a serious note on state govt's failure in preventing illegal mining. Noting that the state has failed to protect minerals in the state it imposed complete ban on mining in Chakki Khad at Damtal area in Kangra district. The Court, in response to a PIL has directed all officials present in the court to take effective steps to completely stop illegal mining. Affidavits of got officials revealed that about 4 lakh tonnes mineral has been extracted illegally. The Court also noted that though the notification was issued for ban of mining activities in Chakki Khad the same mining lease were granted and illegal mining has continued unabated. It noted "It is unfortunate that more than 541 challans were issued in a small area of Kangra district and this shows that govt has completely failed in protecting natural resources. Despite provisions of confiscation of tools and mineral no such instance has been recorded in last three years." The Court directed the all concerned officers from Mining, Pollution and Industry departments to take action against illegal miners as per the provisions of law and file their status report. (Law et al. News 190411)

Yamuna Bachao Andolan: To make the river flow

On March 1st, 2011, hundreds of people from Braj Mandal launched a Pad Yatra from Allahabad Sangam to protest against the growing pollution and decreasing freshwater flows in Yamuna. One of the significant demands is also to maintain freshwater flows in the river. The march reached New Delhi on the 14th April 2011. A delegation met Minister for Environment Jairam Ramesh and Water Resources Minister Salman Khurshid and has been given oral assurances of maintaining freshwater flow through the river length. Organizations like the Bhartiya Kisan Union have been main mobilisers for this Padyatra and protest. The Padyatra passed through numerous towns like Kaushambi, Fatehpur, Kanpur, Auraiyya and Etawah where the yatris talked about importance of cleaning the river and protecting it from pollution. The march was led by 82-year-old Ramesh Baba, who has been fighting the illegal mining mafia on Rajasthan's border for the past 46 years.

As a part of this campaign, on the 26th March, a team of seven campaigners followed the course of the Yamuna River by raft from 50 km south of Yamunotri, ending at Vrindavan. In a display of solidarity with the movement, on the 1st March, temples in Gokul were closed for two hours to protest pollution of the river Yamuna. In the evening, thousands of locals, high priests of the temples joined a march along the bank of Yamuna. Markets too remained closed. After several days in the capital protesting the plight of the Yamuna, some 75 farmers started a "fast" from the 18th April. The fast was withdrawn only after the government appointed a committee to ascertain if 160 cusecs freshwater is being released downstream of Wazirabad and 140 cusecs in the Najafgarh drain, as claimed in the past. The committee found that no such water is being released on continuous basis. On May 1, 2011, the agitation was withdrawn with a promise to launch a stronger movement soon. (Times of India 010311, 220311, Indian Express 170411, www.news.vrindavantoday.org)

Rs 32,410 cr Brahmaputra Flood Master Plan The Master Plan for flood management of Brahmaputra River by the Brahmaputra Board is estimated to cost Rs 32,410 crore at 1983 price level, Minister of State for Water Resources, Vincent H Pala said. The approved Master Plan was sent to State Government for implementation. The Brahmaputra Board, a statutory body, was set up under the Brahmaputra Board Act, 1980 (46 of 1980) under Ministry of Water Resources. The jurisdiction of the Board includes both the Brahmaputra and Barak valleys and covers all the States of the North Eastern Region either in full or in part. (The Assam Tribune, 150311, Brahmaputra Board)

LOCAL WATER BODIES

Fate of Trouts in of J & Kashmir streams Endangering almost half of Kashmir's famed trout habitat and in violation of the J&K Fisheries Act, the Govt of J & Kashmir has issued tenders for the extraction of boulders and gravel from 36 of its freshwater streams for a royalty of Rs 3 crore. The tenders, issued on April 3, 2011 by the state's Geology & Mining Dept, come after no-objection certificates were issued to set up two large stone-crushers on the banks of the most critical freshwater streams: in Lidder Valley in Pahalgam (South Kashmir) and Arin in Bandipore (North Kashmir). 10 biggest trout-populated freshwater streams, including the Brengi stream in Anantnag, the Lidder in Pahalgam, the Arin and Madhumati streams in Bandipore, and the Feroz Pora stream in the Gulmarg-Tangmarg valley have been affected by this decision. These streams are home to a range of trout varieties, the exotic Brown and Rainbow Trout and several indigenous species, including the Snow Trout. Bandipore district Fisheries Officer admitted "there has been pressure from every quarter". It seems that the Director of the Fisheries Dept himself issued the NOCs. J&K Fisheries Regulation Act (1960) does not allow setting up a stone crusher on or near trout streams or extract boulders and gravel from them. Now that the issue has attracted attention, a blame game is on between the Fisheries Dept, the Geology and the Mining Dept on who issued the NOCs.

Following the media attention, state Chief Minister Omar Abdullah asked for a report from his Environment and Industries Ministers on the plan to extract gravel and boulders from 36 freshwater streams endangering half of the habitat of the state's famed trout population, while the Fisheries Dept which issued the NOCs in the first place, has reversed its stand and has called for a ban on extraction. (Indian Express, 120411, 130411)

It seems that the fate of fish in J & K is better than the other Himalayan States. In Himachal Pradesh, the Fisheries Dept has issued NOCs to all Hydel projects which are coming up in biodiversity rich stretches of rivers which are habitat for rare and endangered fish species. Although there is a govt order of 2005 in Himachal, requiring the hydel projects to release 15% of the river flow downstream for the riverine ecology at all times, it has been observed that none of the projects release this water. (Business Standard 240111)

It is unfortunate for the rivers that Fisheries Depts in J & K, Himachal Pradesh and Uttarakhand are laying stress on setting up fish farms and breeding fish off site, which need huge infrastructure and investment. None of these Depts are trying to conserve selected riverine stretches for in situ fish conservation. Such in situ conservation can be cost and time effective, and will result in conserving the threatened riverine habitats along with the endangered species, thus providing considerably more ecosystem services to the local population.

Lakes can complement Bangalore's water supply The expert committee constituted to identify alternative sources of water to meet Bangalore's escalating water demands is also looking at the rich local heritage of lakes in the city. It plans to consult the four-member team that has been enlisted by the Bangalore Development Authority to rejuvenate 10 of the city's lakes. Dr M Inayatullah, heading the four-member water resources group at the faculty of civil engineering of UVCE said that along with measures like small treatment plants near lakes, fencing of lakes, etc., the committee is also looking at creating (and rejuvenating) wetlands around the lakes which are highly effective in treating waste water and also remove heavy metals from water, which has been an increasing problem for Bangalore. (DNA 150411)

WETLANDS

Commercial fishing affect Assam wetlands Riverine wetlands or beels in Assam are an important repository of fish as well as other wetland species and are of immense economic and ecological value. However, unsustainable activities are affecting many of these beels. Such is the case with the Jhanjimukh wetland near the confluence of Jahnji and Mitong River in Jorhat district of Assam. The wetland complex consists of numerous individual 'beels', largest of which is 780 ha. It is a home to more than 228 migratory and resident bird species including very large congregations of bar-headed and grey-lag goose and is categorized as an IBA (Important Bird Area) by the Bombay Natural History Society. Jhanjimukh region is also home to the endangered Ganges River Dolphin, the national aquatic animal of India. While sustainable local fishing is not a problem for the wetland, the wetland is leased for commercial fishing which has resulted in a great deal of ecological damage, according to BNHS. Reclamation of the fringe areas of the beels for seasonal cultivation as well as fish farming is also steadily reducing the area of the wetlands. Ecologically sensitive wetlands and those above 500 ha have now been regulated under the Wetland (Conservation and Management) Rules 2010.

In these wetlands, 'harvesting of natural resources and 'aquaculture' are regulated activities which should be monitored and controlled by the state govt. However, Assam Govt has not been very proactive in protecting its lone Ramsar site Deepor Beel, so community action and voluntary efforts seem to be the only hope for Jhanjimukh as well. (The Assam Tribune 150311)

HC stays constructions in Sukhna catchment The Punjab and Haryana High Court has stayed any kind of construction in the catchment area of Sukhna Lake falling in Punjab and Haryana. With an endeavour to protect the Lake from further deterioration, a division bench passed the directions during the hearing of public interest litigation concerning the Lake. A number of projects have come up and were planned in this catchment area. Amicus curiae in the case blamed the Chandigarh Administration for its casual approach towards the lake and for failing to keep a check on the increasing rate of urbanisation in the catchment area. The Court has asked the counsels involved in the case to suggest names of expert organisations or individuals who can help in the preservation of Sukhna Lake and expressed displeasure over the inadequate replies filed by the Haryana govt in the case.

BBMB unable to plug Sukhna Leak The Punjab and Haryana High Court has asked the Central govt to clarify as to why it has "refused" to plug the leakage of floodgates in Sukhna Lake. The directions were passed after UT Senior Standing Counsel appraised the court that the Bhakra Beas Management Board had refused to plug the leakage at Sukhna floodgates. Following a request made by the Administration, BBMB expressed its inability because "it did not have an expert in plugging the leakage". (Indian Express 230211, Indian Express, 150311)

RIVER LINK PLANS

Ken Betwa Linking Disastrous-Ramesh The Union Minister of Environment and Forests Jairam Ramesh has said that the Ken-Betwa River linking project was a disastrous idea and should not be pursued. He said, "I say very strongly that it would be disastrous to link the two rivers and my ministry will never give the required environmental clearance to this," What is the official stand of the Environment Ministry is yet to be seen. The River Interlinking project is unviable, economically, hydrologically and ecologically. For more information on Ken Betwa in particular and interlinking in general, refer: http://www.sandrp.in/riverlinking/index_html/document_view?month:int=5&year:int=2032 (The Hindu 170411)

THE POWER SECTOR

Impact of Thermal Plants on water in Orissa The installed thermal power generation capacity in Orissa, most of it coal based, is close to 7500 MW. Now, capacity addition to the tune of 75000 MW is at various stages of planning. Out of this, about 40000-45000 MW is just in the few districts of Angul, Jharsuguda, Dhenkenal and Sundargadh.

Thermal power plants need large quantities of water for cooling and for ash disposal. The Central Electricity Authority gives a thumb rule for water requirement for thermal power plants as 3.92 million cubic meters (mcm) per year per 100 MW of capacity. **This means that the 45000 MW to be added will require 1700 mcm water per year to operate.** This water is sufficient to irrigate close to 350,000 ha of land. Water needed to supply the entire population of the 11 largest cities in Orissa (at 2001 population) with 150 litres per person per day would be around 145 mcm per year. This is water needed only for the thermal plant and does not include the water needed for the mining the coal required for this power generation. Combined with the pollution, this consumption of water will have huge impacts on the health and livelihoods of the people in the area. Protests against such plants are coming up strongly. In 2007, more than 30,000 farmers gathered at the Hirakud reservoir, forming a human chain in protest against the allocation of water to industries when they were not getting water for irrigation. The Siddhivinayak Anchalik Suraksha Samiti of Naraj, is opposing the 1000 MW thermal power plant being constructed at Narajmathapur, in Cuttack district on the grounds of displacement, ash and other pollution and the large quantities of water consumption of the project all of which will result in the destruction of agricultural and fisheries based livelihoods. Mahanadi Bachao Samiti has been formed in Cuttack to protest against such water withdrawal, including water for the POSCO project which is to be taken from the Jobra barrage. (India Together 260411)

QUOTES

It is not necessarily overpopulation causing water shortages, "12 % of the world's population uses 85% of its water, and these 12 % do not live in the third world."

Maude Barlow [renowned author, activist and senior advisor on water issues to the president of the UN General Assembly] (sundayszaman.com 270311)

"The UN is one of the international organizations which is leading the commodification of water around the world, by which I mean that it was the UN which first defined water as commodity in its Rio & Dublin Conferences and it was the UN which brought a proposal to establish the World Water Council [WWC] in 1997. Therefore, besides the World Bank, WWC and OECD, the UN also plays a very critical role in the process of commercializing water. It is obvious that World Water Day was designed only to make people believe that commodification would be the only solution for water scarcity. Thanks to these kinds of initiatives, the UN, World Bank and WWC receive broad public recognition for their highly misleading arguments claiming that water is a scarce resource and therefore must be commercialized."

Gaye Yılmaz, a professor of political economy & globalization at Boğaziçi University, Turkey (sundayszaman.com 270311)

"About 30 million Tonnes of crop residues are burned every year in Punjab."

Prof Joginder Singh (former head of Dept, PAU, Ludhiana) (The Tribune 300411)

Jean-Daniel Ruch, Special Envoy for the Middle East, Department of Foreign Affairs, Switzerland, said the water issue is at the core of the conflicts between Israel and Palestine, Israel and Lebanon and Israel and Syria. (http://www.thepeninsulaqatar.com, 110511)

SOUTH ASIA

World Bank, India to help Afghanistan build Kabul River dams The World Bank and Indian experts are extending help to Afghanistan to build 12 dams on the Kabul River with a total water storage capacity of 4.7 Million Acre Feet (MAF). The World Bank will provide funding for the 12 dams that will cost $ 7.08 billion. Four projects will be constructed in Punjshir sub-basin. These include the $332 million 200 MW Totumdara project (with storage capacity of 0.33 MAF); the $ 1.174b 100 MW Barak project (0.43 MAF); $ 1.078 b Panjshir (100 MW) project (1.05 MAF); and the $607 m Baghdara (210 MW) project (0.33 MAF).

In the Logur Upper Kabul sub-basin 4 more dams are to be built which include the $72 m Haijana project (72 MW, 0.18 MAF); $207 m Kajab (15 MW, 0.32 MAF) project; the $356 m Tangi Wadag (56 MW, 0.28 MAF) project; and $ 51 m Gat (86 MW, 0.41 MAF) project. 4 more dams will be built in the Lower Kabul sub-basin, including the $442 m Sarobi project (210 MW, 0.32 MAF); the $1.434 b Laghman project (1251 MW, 0.23 MAF); the $1.094 b Konar (A) (94.8 MW) and Kama projects (11.5 MW).

Meanwhile US has offered help to facilitate a Pak-Af water treaty. Pakistan and Afghanistan currently share nine rivers with annual flows of about 18.3 MAF of which Kabul River accounts for 16.5 MAF. River Chitral, which originates from Pakistan, enters Afghanistan where it is called River Kunar. It joins the Kabul River near Jalalabad and then re-enters Pakistan. 90% of Afghanistan's land area is located in the five river basins: Panj-Amu Darya River Basin, Northern River Basin, Harirud-Murghab Basin, Helmand Basin & Kabul Basin. It is estimated that the planned dams will utilise 0.5 MAF water to irrigate additional 14,000 acres. (The News 120511)

Stop Damming Burma's Rivers Burma Rivers Network is calling on foreign investors particularly from China, Thailand, India and Bangladesh, to immediately stop their plans to build large dams on Burma's major rivers and their tributaries, as these dams will have huge social and environmental impacts across the country, and fuel Burma's decades-long civil war. Over 25 large dams are being built or planned on all Burma's major rivers, including the Irrawaddy and Salween, with investment from neighbouring countries. Most of the power will be exported, even though only about 20% of Burma's population currently has access to electricity. The planned dams are all located in ethnic regions. Areas around the planned dam sites, particularly along the Salween, are heavily militarized by the junta's troops, who have forcibly relocated hundreds of thousands of local civilians, and commit ongoing systematic human rights abuses, including torture, killing and rape. The dams will not only permanently displace tens of thousands of villagers upstream, and destroy forests, fisheries and biodiversity, they will also impact water flows to the millions living in the Irrawaddy and Salween delta regions, which are the rice bowls of the country. (Burma Rivers Network, 140311)

CHINA

China Bank supports Dam in conflict zone The Industrial and Commercial Bank of China, China's biggest bank has extended a $ 400 million loan, for the Gibe Hydropower Project near Ethiopia's sensitive borders with Kenya and Sudan. This has come after the African Development Bank and World Bank withdrew their support. Chinese financiers are now involved in 250 projects in 68 countries, often in inaccessible and unstable regions where other countries are reluctant to invest due to social and ecological concerns. Civil society groups have called on the ICBC to withdraw its support to the Gibe dam. The project, which is still mired in political uncertainty, will have catastrophic effects on communities downstream. "We are calling ICBC to reconsider its support while there is such uncertainty about the project," said Ikal Angelei of the Kenya-based Friends of Lake Turkana, which represents downstream communities. Since 2000, when China's Exim Bank stepped in to support the controversial 1250 MW Merowe project in unrest-hit Sudan, which displaced over 50,000 people, Chinese companies have widened their presence in Africa. Over the past decade, the Exim Bank had "become bigger than the World Bank" in financing such projects, said Peter Bosshard, International Rivers. (The Hindu 200411)

Thousands protest displacement At least 2,000 migrants displaced by the Xiangjiaba dam on the upper Yangtze River took to the streets in March 2011 to protest displacement, resulting in a clash between police and protesters. Up to 50 people have been injured. The Chinese govt dispatched 1,500 riot police to disperse the protesters, who had been blocking a main road and bridge over the Yangtze River for four days. Last June, prior to the relocation, a demonstration was held at the head office of the project, where dozens of protesters were injured by riot police. Protesters are angry about inadequate provisions made by the govt for the roughly 100,000 villagers displaced by the dam. The catalyst for this most recent protest have been the 6.8 magnitude earthquake in nearby Burma, and another recent earthquake in Yunnan which was felt by the migrants. The $ 11.5 billion dam is one of a dozen dams being built by the Three Gorges Corp on the Jinsha River. The Xiangjiaba dam will be the fourth largest in China when completed next year. (The Probe International, 310311)

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