

Dams, Rivers & People

Working for water resources development as if democracy, people and environment matter

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Index

Rivers, the Most Endangered Species	1
Excerpts from FAC Report on Rupsiabagar Hydro	9
MAHA Irrigation Scam	10
Mah Water Audit: Myth and Reality	17
GOG's Poor Track Record on Water	20
Letter to NWRC on NWP Suggestions	21
Extremely Weak CAG Audit on Hydro	22
Climate Water Mission to be Dropped?	24
Bhutan HEPs Threaten Endangered Species	25
Churning in Nepal Power Sector	26
New Publication from SANDRP	28

FREE FLOWING AND BIODIVERSITY RICH RIVERS, THE MOST ENDANGERED SPECIES IN INDIA

India's Rich Riverine Biodiversity. Indian Rivers are some of the last global frontiers of rich freshwater diversity, endangered and threatened species. According to India's National Biodiversity Action Plan (p 15), "Nearly 50% of the aquatic plants of the world are recorded from the Indian sub-continent but only a few have been studied in detail." India is a mega diverse country with respect to freshwater fish species (650+ species). In freshwater fish diversity, India is eighth in the world and third in Asia (Biju Kumar, Exotic Fishes and Freshwater Fish Diversity, Zoos Print Journal 2000). At the same time, these rivers support millions of livelihoods and indigenous people. Rivers flowing through Eastern and North Eastern Himalayas and Western Ghats have been designated as global hotspots of freshwater biodiversity.

The Western Ghats hotspot is globally significant centre of diversity and endemism for freshwater species where close to 16% of the 1,146 freshwater taxa assessed are threatened with extinction, with a further 1.9% assessed as Near Threatened. While in the Eastern Himalayan Hotspot, nearly 31% species

studied are data deficient and can be of very high conservation value.³ Thousands of indigenous, forest dwelling tribes in the North East, Himalayas and Western Ghats depend entirely on these rivers for livelihoods. Many rivers and riverine stretches are sacred and are conserved actively by local communities.

Today, India's Rivers, riverine biodiversity and river dependent communities are facing major threats: from large dams, pollution, encroachment, sand mining, deforestation and bad management practises. These factors are impacting all aspects of rivers: ecological, social, cultural, religious, aesthetic, tourism-related and economic.

More than 10.8 Million people depend on riverine fisheries alone which are degrading and collapsing at an alarming rate¹. Large dams are planned and are under construction in and around and are affecting ecologically sensitive sites, protected areas, Ramsar sites, World Heritage Sites, Biosphere reserves, sacred sites, community conserved areas alike. Indigenous People are being hugely impacted by these and many have been protesting and sending

HAS THE CBD FAILED FOR INDIA'S RIVERS? The Convention on Biological Diversity, which entered into force in December 1993, has three objectives: the conservation of biological diversity; (ii) the sustainable use; and (iii) the fair and equitable sharing of the benefits arising out of their utilization. In the context of aquatic biodiversity and rivers in India, we asked three questions: Where can we see impact of CBD in conservation of biodiversity in rivers? Where can we see impact of issue of sustainable use of rivers and its biodiversity in the context of dams? Where can we see impact of CBD in terms of communities being party or beneficiary of the use of riverine biodiversity in the context of dams, diversions and hydropower projects? Unfortunately we could not find any such impacts in India. We would like to know if there are indeed any in India or anywhere else in the world.

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representations to the MoEF to cancel these destructive projects¹. Especially, in north eastern State of Sikkim, cascade of dams are destroying rivers and sites held sacred by many tribes and religions². Nonetheless, dams are getting permissions, disregarding community concerns, ecological concerns, expert reports and even unanimous recommendations against projects from government appointed committees³, Dams are adversely affecting even the Ramsar wetland sites in India, but there is no reporting of this to CBD, nor is there any mitigation⁴.

In this scenario, a Convention like CBD, aimed at protecting not only biodiversity, but also indigenous people and their right to natural resources, can be a boon.

Can the CBD COP decisions on Inland Waters Biodiversity, Protocols like Aichi Protocol, and Guidelines like Akwe Con guidelines help protect India's Rivers in any way? Two decades after the CBD was proposed at Rio, and a decade after the enactment of India's Biological Diversity Act of 2002, there is little evidence to suggest that CBD or the Ramsar convention has been helpful for protection of Indian rivers or for those who are dependent on the rivers.

India's flawed reporting to CBD on Inland Waters Biodiversity
In India's reporting to the CBD under its Inland Waters Biodiversity Program of Work, Indian Rivers, their biodiversity and dependent communities find

Rivers, watersheds and aquatic ecosystems are the biological engines of the planet. They are the basis for life and the livelihoods of local communities. Dams transform landscapes and create risks of irreversible impacts. (WCD report p 234)

no mention so far through India Plan of Work on Protected Areas (2012)⁵, India's Report to the Ramsar Convention (2011)⁶, India's 4th Report to the CBD (2009)⁷ or the National Biodiversity Action Plan (2008)⁸. Even the Draft "National Biodiversity Targets" for the period 2012-2020⁹ has no mention of these issues.

India's Report to the Ramsar Convention on Wetlands, a part of its reporting on Inland Waters Biodiversity Program under the CBD, builds heavily on National Wetland Conservation Program

Time is running out for India's Rivers in the absence of any strong law, policy or framework for communities

and the Wetland Rules (2010). Ironically, though the Ramsar definition of Wetlands includes perennial and seasonal rivers.

India's definition of Wetlands as given in Wetland Rules (2010) excludes Rivers completely from its ambit. Due to these convenient definitions, rivers find no place in India's work plans or programs.

The only mention Rivers get in India's reporting to the CBD is through National River Conservation Program. Firstly, this name of the programme is a misnomer. This programme has the limited mandate of dealing with water pollution, currently on 35

polluted stretches of Indian rivers; it does not look at the issue of adequacy of freshwater flows, biodiversity, livelihoods or any such wider issues concerning Rivers. The programme has been ineffective in tackling even the pollution issues after having started in 1986 with the Ganga Action Plan. It has been criticized by official agency like the Comptroller and Auditor General's Report on Water Pollution (2012) for being 'unsatisfactory' and inherently 'flawed'.

While some countries like South Africa are working on dedicated, participatory programs to protect endangered rivers, India's Plan of Work on Protected Areas makes no mention of protecting its biodiversity rich rivers. We have next to no protected rivers or riverine stretches¹⁰. Only incidental protection rivers get is when they flow through protected areas, but even here, they are exploited by upstream and downstream dams. Laws like the Wildlife Protection Act (1972) that provides protection from such impacts are known for their non-implementation and non-compliance. In reality there are numerous rivers outside terrestrial protected areas which have significant biodiversity and cultural value and need explicit protection¹¹.

How Dams affect Rivers, biodiversity and livelihoods

- 1 http://indigenouspeoplesissues.com/index.php?option=com_content&view=article&id=15295:india-stop-state-brutality-and-repression-on-mass-protests-against-big-dams-and-for-the-rights-of-forest-people-in-the-north-east&catid=33&Itemid=66
- 2 <http://www.gorkhacreed.com/groups/gorkha-news/forum/topic/hydel-projects-on-the-rathong-chu-considered-holy-by-the-buddhists/> and <http://www.actsikkim.com/dzongu.html> and <http://www.actsikkim.com/projects.html>
- 3 http://sandrp.in/dams/Demwe_Lower_Unacceptable_Wildlife_Clearance.pdf/view?searchterm=demwe
- 4 For details, see: http://www.sandrp.in/rivers/Indias_wetlands_in_peril_Feb_2011.pdf
- 5 <http://www.cbd.int/protected/implementation/actionplans/country/?country=in>
- 6 <http://www.ramsar.org/pdf/cop11/nr/cop11-nr-india.pdf>
- 7 <http://www.cbd.int/doc/world/in/in-nr-04-p1-en.pdf>
- 8 <http://www.envfor.nic.in/downloads/public-information/NBAP-iyb.pdf>
- 9 <http://nbaindia.org/uploaded/pdf/Targets.pdf>
- 10 Only exceptions are National Chambal Sanctuary, Ken Gharial Sanctuary, Sanjay Gharial Sanctuary, Vikramshila Dolphin Sanctuary, etc., and even these Protected Areas are facing huge water abstraction pressures from upstream and downstream.. For example, the Ken Gharial Sanctuary will be destroyed by the proposed Ken Betwa River Link Proposal if it comes up.
- 11 http://www.iucn.org/about/work/programmes/species/our_work/about_freshwater/what_we_do_freshwater/western_ghats/



River Cauvery at Shivasamudram, Karnataka. Numerous Mini Hydel Projects are threatening aquatic biodiversity here, without Environment Impact Assessments. Photo: SANDRP

The freshwater aquatic biodiversity in rivers depend on a number of variables: timing, duration, frequency, amplitude of flows and floods; temperature, nutrient content, concentration of various pollutants and dissolved gases and turbidity of the water in motion; flow pattern, chemistry, quantity and content of sediments; the physical condition, composition of the river bed, plant, animal, fish, insect biodiversity in the water and floodplains¹², to name only a few. ALL of these variables are adversely impacted when a dam, diversion or hydropower project is constructed on the river. In turn, these impacts affect the downstream livelihoods in a major way. This has been well documented by a large number of studies including by the World Commission on Dams, Food and Agriculture Organisation and India's Central Inland Fisheries Research Institute.

India's mega dam plans India has the biggest number of large dams under construction with the possible exception of China. Some of the known plans and notable dams under construction, consideration, or cleared by the Government of India's Ministry of Environment and Forests (MoEF), which are set to adversely affect biodiversity and people in a huge way are listed here.

Cascade of over 150 dams planned in biodiversity-rich Arunachal Pradesh and neighbouring states in the North East of India, displacing and adversely affecting almost all the indigenous communities including their livelihoods, cultures and society, forests, rivers, wetlands, adversely affecting protected areas, sacred sites, sacred rivers, threatened biodiversity like Black necked Crane, Bengal Florican, rare and endemic fish species and other biodiversity. Notable amongst these are Dibang, Siang, Lower, Middle and Upper Subansiri, Lower Demwe, Nyamjangchu, to name only a few.

1750 MW Lower Demwe Project is set to affect Dibru Saikhowa National Park, an Important Bird Area (IBA) and proposed Ramsar site. **780 MW Nyamjangchu project** will affect community conserved areas and last wintering sites of critically endangered Black Necked Crane, which is revered and protected by local tribes. The local people from Tawang and Anjaw district travelled long distances from their area to the National Capital to share their concerns, but the ministers or officials in Delhi had no time for them.

Non destructive options exist for the electricity needs and development of the area, but they are not being considered. Local people have absolutely no say in

the planning and decision making of the projects. India's biggest movement against destructive large dams is ongoing in the downstream Assam, but the MoEF does not even have a credible downstream impact assessment for a single project.

Cascade dams on Teesta River and its tributaries in Sikkim state in North East India, are affecting protected areas, sacred sites and sacred rivers of indigenous groups. These notably include **Teesta III to VI Hydroelectric projects, 97 MW Tashiding HEP** on Sacred Rathong Chu River, **Jorethang Loop region sacred to hydroelectric project, projects in Dzongu affecting indigenous communities like Lepcha and Bhutia**. Here the movement by the Affected Citizens of Teesta (ACT) have waged a long movement including fasts for saving their rivers, livelihoods and culturally significant areas.

Cascades of over 300 (some suggest the number of over 600) dams in Upper Ganga basin (Uttarakhand state) on Rivers like Alaknanda, Bhagirathi, Gori Ganga, Pindar etc., and their tributaries, which are affecting aquatic and terrestrial biodiversity¹³, local communities, sacred sites, protected areas and world heritage sites. Wildlife Institute of India (WII) has recommended cancelling at least 24 of these projects for protecting

12 Compiled from p 75-83 of the report of the WCD, 2000.

13 Report of the Wildlife Institute of India on cumulative impacts of Ganga Basin Projects



Last remaining free flowing rivers in Western Ghats has no protection
Photo: SANDRP

terrestrial and aquatic biodiversity of the region. A study has suggested that some of the streams be declared as no go areas for hydropower projects. However, the MoEF is rewarding the critiques of the WII report with membership of statutory bodies, rather than implementing recommendations of the WII report which was commissioned by the ministry itself.

One such project is the **300 MW Alaknanda Hydroelectric Project** which was denied Forest clearance twice by the statutory Forest Advisory Committee, has a negative recommendation from WII and is affecting World Heritage sites and range of critically endangered animals like Snow Leopard and Brown Bear. However, bypassing all these, the MoEF has given the project its green signal.

Cascades of existing, under construction and planned projects on Sutlej, Ravi, Beas, Chenab and



Golden Mahseer, Ramganga River.
Photo Courtesy:swittersb.wordpress.com

Y a m u n a basins in Himachal Pradesh affecting last stretches of free flowing rivers, high fish diversity and indigenous communities. Similarly large

numbers of projects exist, are under construction and planned on Chenab, Jhelum Rivers and tributaries in Jammu and Kashmir. The World Bank and Asian Development Bank are funding some of these projects without looking at the impact of the projects on aquatic biodiversity in any credible way, or addressing the impacts that people suffer.

At least 12 Dams are coming up in biodiversity hotspot of Western Ghats, submerging over 6,000 hectares of rich forest and affecting 25,000 tribals in Maharashtra, all for water for cities and industries without undertaking any options assessment. Strangely, these projects do not require environment impact assessment, environment management plan, any environment monitoring or clearance, under the strange assumption of the MoEF that projects meant for Urban and industrial water supply become

socially and environmentally benign! When we pointed this out to a senior official in the MoEF, we were nonchalantly told, "it must have been a slip of pen"! The slip remains to be corrected years after pointing this out to the MoEF.

200 MW Gundia Hydroelectric Project coming up in especially rich region of Western Ghats in Karnataka State: According to studies, the Gundia River Basin 'harbours nearly 36% plant species, 87% amphibian and 41% fishes endemic to Western Ghats. The presence of four critically endangered and 14 endangered animal species in the region further emphasises the need for conservation of this region on priority as it provides a unique habitat and ecological niche. This study reaffirms hotspot status of Gundia Basin in Central Western Ghats, a repository of biological wealth of rare kind both in its aquatic and terrestrial ecosystems and indicates strongly the need for adoption of holistic eco system



Newly discovered Pangio Ammophilla from Dakshin Kannada
Photo Courtesy:ichthy.wordpress.com

management for conservation of particularly the rare and endemic fauna of western Ghats.

Here again it is notable that the report of the Western Ghats Ecology Panel, set up by the MoEF has recommended that the project should not be taken up. The MoEF, instead of following recommendations of this panel, actually kept even the report under wraps. The report was made public only after a court order.

Very large number of small hydro projects¹⁴ are existing, planned and under construction in Karnataka (as also in the other states including Himachal Pradesh and Uttarakhand mentioned above), mostly in biodiversity rich Western Ghats region. These projects do not have project level or basin level cumulative impact assessments (not required by law for projects below 25 MW capacity, an assumption that they are environmentally benign is clearly

14 The projects under 25 MW are called small hydro projects in India and they also do not require any environment impact assessment, environment management plan, environment clearance, environment monitoring or public consultations.



Dried up Sutlej Downstream Nthpa Jhakri Dam in Himachal Pradesh

Photo: SANDRP

wrong), though they all have adverse impact on aquatic and terrestrial biodiversity as also people depending on these resources. These impacts are not recognised, assessed or addressed, their existence is not even acknowledged.

Inter linking of rivers

India in fact has plans to link at least 37 big rivers through some 30 river links involving over 75 mega dams, including in Nepal and Bhutan and affecting Bangladesh. These projects would destroy the remaining aquatic biodiversity in these rivers.

UNFCCC's Clean Development Mechanism

The United Nation's Framework Convention on Climate Change, through its Clean Development Mechanism provides carbon credits to projects in developing countries, the largest number of these projects happen to the hydropower projects. All hydropower projects have adverse impacts on aquatic biodiversity one way or other. Among the hundreds of hydropower projects from India and elsewhere that have applied for CDM credits (2436 projects globally as on Oct 19,

2012), 545 hydropower projects (globally) have already received the credits as clean projects. We have yet to see a single project that has done credible assessment of its impact on aquatic and related terrestrial biodiversity. Most projects don't do any, nor are they doing any credible mitigation for adverse impacts they are causing. And yet, hundreds of them are being certified as CDM projects, are getting credits. What this means is that a United Nations organisation is actually incentivising destruction of biodiversity that another United Nations organisation (CBD) is supposed to protect and conserve. And the CBD is doing nothing in our knowledge to stop this incentivising of biodiversity destruction.



© S.D. Eju
Gundia Indian Frog, one of the many endemic amphibians of this region, threatened by habitat loss.
Photo Courtesy: Edge of Existence

Place for biodiversity, for impact on livelihoods and for people in decision making

The impact of dams on riverine biodiversity is supposed to be assessed as part of the Environment Impact Assessment under India's EIA notification of Sept 2006. Firstly, there is no explicit requirement of Biodiversity Impact Assessment under this or any other law. Secondly, this excludes a very large number of projects that affect aquatic biodiversity, some of them are mentioned above. Thirdly, these are all project level impact assessments, each river has multiple dams, diversions and hydropower projects and there is no legal requirement for a cumulative impact assessment. Fourthly, all EIAs limit impact assessment within the artificial radius of 7 km, when the biodiversity impacts are likely to go much farther both upstream and downstream. Fifthly, the baseline assessments are not required for survey all round the year, with full details of such survey being given in the EIA reports. Sixthly, even the impact assessment that has been done is most inadequate, many times they are known to be dishonest, cut and paste jobs. The



Indigenous Communities protest against dams in sacred sites. Photo Courtesy: Weepingsikkim.blogspot.com

assessment of impacts on aquatic biodiversity rarely go beyond names of some fish species, and almost never even list the aquatic plants, insects, birds, animals and so on. We have yet to see what can be called a satisfactory downstream impact assessment for a dam. It is this limited impact assessment that is the basis for public consultation process for the affected community.

Even this impact assessment is not available in the language and manner that the local people can understand. Lastly, but most importantly, downstream affected communities are not even considered project affected, nor are there any compensatory measures for the impacts they suffer. In this context, to talk about benefit sharing sounds like a cruel joke.

How climate change will, is worsening the situation It has been well established now that Glaciers are melting at an accelerated rate in the Himalayan region. Secondly, the monsoon rainfall patterns are also changing. The third major impact already being experienced is the sea level rise in the coastal areas. All these three factors have major impact on the pattern of flows in the rivers and consequently on the aquatic biodiversity and livelihoods. In this context, the increasing number of large dams that are constructed, are under construction or planned are only adding and multiplying these impacts. What is disturbing is that many of such projects are being pushed as climate friendly projects! They are certainly not friendly for the people who are

SIDE EVENT AT THE CBD ON IMPACTS OF DAMS ON BIODIVERSITY: SOCIO ECOLOGICAL DIMENSIONS IN THE CONTEXT OF CLIMATE CHANGE

On 8th Oct 2012, opening day of the CBD CoP 11, SANDRP and Partner Organisations [Himdhara (Himachal Pradesh), Himal Prakriti (Uttarakhand), Samvardhan (Maharashtra), River Basin Organisation (Assam) and International Rivers (India)] organised a side event to highlight the immense impacts of Dams on Riverine and Coastal Biodiversity, indigenous groups, livelihoods and a range of goods and services provided by rivers and estuaries. The event was attended by over 60 individuals from India and abroad who supported the recommendations put forth for CBD and Indian Govt. at the end of the event.

Parineeta Dandekar, SANDRP opened the session with an introduction to impacts of large dams on riverine biodiversity and livelihoods and the ineffectiveness of CBD and Indian Government in trying to address these. Dr. Nilesh Heda from Samvardhan, Vidarbha talked about impacts of dams on fish diversity,

fisher folk communities, traditional conservation practises and the need to build riverine governance through communities and not the other way round. Nachiket Kelkar from NCF talked about im-



impacts of dams on biodiversity in Ganga, especially indigenous fisheries and dependant livelihoods, stressing on the need for targeted riverine protected areas, through community participation. Prakash Bhandari from Himadhara, Himachal Pradesh shared the terrible impacts of hydroelectric dams on terrestrial biodiversity and livelihoods in Himachal Pradesh and the near-total absence of any participatory Environmental Governance.

Ashish Kothari from Kalpavriksh responded on how CBD can possibly be used in this context, stressing ecosystem approach highlighted by COP V and using the Akwe Kon guidelines. He raised basic questions about power and stressed that the GDP-driven development model of India is leading to huge negative impacts on all other aspects. Himanshu Thakkar, SANDRP summed up the session, highlighting the failure of CBD in being effective in any way for India's rivers. He also brought out the irony of one UN agency protecting biodiversity (CBD) while the other, through UNFCCC's CDM mechanism actually incentivising destruction and pollution. He put forth following recommendations which were supported by over 60 participants from various countries.

Sadly, officials from MoEF and Central Inland Fisheries Research Institute (CIFRI) did not attend or take part in the discussions despite confirming their presence earlier. Officials from National Biodiversity Authority were also invited but did not attend the event.

dependent on the rivers, but they have no voice in these projects.

As India hosted the CBD COP 11 in the United Nations Decade of Biodiversity (UNDB)

2010-2020¹⁵, India is expected to lead the key global agenda item on biodiversity between 2012-2014, the first half UNDB. (A look at the strategic plan for this decade from UN¹⁶ shows that the plan does not explicitly mention anything about

One of the targets we agreed to in Nagoya is for countries to reform their economic instruments that negatively impact biodiversity and ecosystems...

Unfortunately, policies and economic instruments globally are still promoting 'business as usual' models that do not enable sustainability... The CBD recognises that we could also have community-governed protected areas that are fully recognised and financially supported by national governments... Namibia has already executed 70 such formal 'conservancy' agreements with local communities. Bolivia, Australia, Brazil and Mexico, too, have success stories.

*BRAULIO FERREIRA DE SOUZA DIAS,
Executive Secretary of the CBD¹⁸*

aquatic biodiversity, and we hope that this won't be forgotten.) Through this key leadership role, we urge Indian Government to focus on its invaluable freshwater biodiversity through its rivers, implement CBD Program on Inland Waters Diversity, especially decisions taken in COP 10, COP 7, COP 4, Aichi Protocol on Biodiversity and Akwe Kon Voluntary guidelines for the conduct of cultural, environmental and social impact assessments regarding developments impacting on, sacred sites and on lands and waters traditionally occupied by indigenous and local communities.

We urge the Indian Government specifically:

- To urgently review plans mentioned above about the dams and projects that adversely affect aquatic biodiversity and livelihoods, conduct a thorough sociocultural-ecological assessment as outlined in the Akwe Kon Guidelines, to include concerns about massive biodiversity loss and impacts on the indigenous communities.
- To amend the EIA notification such that all large dams, all hydro projects over 1 MW capacity and also projects impacting aquatic biodiversity require Impact assessment¹⁷, mitigation plans and environment clearance, all in consultation with local people. Project proposals should be asked to include aquatic impacts, mitiga-

tion plans and compensatory measures. The Impact assessments should also include the impact of the projects on Ramsar and other wetlands as also flood plains.

- To urgently come out with a policy and law for protection of rivers.
- To include Rivers in Wetlands Rules (2010) and declare

- To urgently protect last remaining free flowing rivers in the country in their free flowing, undammed state, particularly in North East India, Himalayan states, Western and Eastern Ghats.

- Provide legal protection to community conserved river stretches.



River Lohit at Parashuram Kund in Arunachal Pradesh, a lesser studied, riverine ecosystem. Photo courtesy: getahead.rediff.com

specific protected rivers as no go zones in each state and ecological zone and, as per the Aichi Protocol, to slow down rapid biodiversity loss.

- To formally protect rivers which are socially and culturally important and sacred to indigenous communities, while not impinging upon community rights over their rivers.

- To stop certifying CDM hydro projects as 'sustainable development projects' without impact assessment and mandatory participatory process that requires prior, informed, consent from the gram sabhas.

- To improve reporting to the CBD to include dedicated Program on Work on Rivers, aquatic biodiversity and communities who depend on them.

15 www.cbd.int/2011-2020/

16 <http://www.cbd.int/doc/strategic-plan/UN-Decade-Biodiversity.pdf>

17 A statement in this context by the Indian Environment (see: <http://www.thehindu.com/sci-tech/energy-and-environment/biodiversity-norms-for-green-clearances-coming-says-environment-minister/article3946502.ece>) will have little credibility, looking at her track record, until we see some evidence of implementation.

18 <http://www.ipsnews.net/2012/10/qa-mismatch-between-commitments-and-action-on-biodiversity/>



Biodiversity-rich Kumaradhara River in Western Ghats. This site is proposed to be dammed
Photo: SANDRP

Photo: SANDRP

IUCN REDLIST OF ECOSYSTEMS

IUCN has been working on Red List of Species, which has received global acceptance and is considered while making management decisions. Due to a number of problems, despite decades of effort, by 2010 only 55,926 of the 1,727,708 known species of the world (< 3%) had been evaluated for the IUCN Red List of Threatened Species.

However, it is widely accepted that for meaningful conservation planning, ecosystem status may be better than individual species' status as an indicator of biodiversity as a whole. Society often perceives the problems of biodiversity loss most acutely not at the species level but at the ecosystem level, through the loss of services such as clean water, food, timber, fuel and recreation. IUCN has initiated a process of identifying Threatened Ecosystems of the World.

This is an opportunity of highlighting the highly endangered status of rivers and other related ecosystems. IUCN has invited researchers to share their work and suggest most threatened ecosystems, in need of protection¹⁹. Researchers from South Asia need to highlight the threatened status of our rivers, their biodiversity and social value and advocate for their protection through the Red List ecosystems Framework.

We urge the CBD to:

- Coordinate with UNFCCC to ensure that current incentivising of destruction of aquatic biodiversity is addressed and halted
- Make clearly defined norms for participation of communities and effectively achieving the community sovereignty over biodiversity and not just national sovereignty that is the norm now.
- Make clearly defined norms for Free, Prior, Informed Consent of the Community before any decision is taken that affects

their access to biodiversity resources.

- Come out with best practices studies that show how protection of aquatic biodiversity is necessary, possible and essential without sacrificing meeting of essential development needs of the people.
- Monitor India's reports for work on rivers and dependent communities.
- Strengthen its reporting framework on Inland Waters Biodiversity.

Currently the CBD fails to influence any aspect of India's decision

making and management of its rivers which is proving fatal to biodiversity and livelihoods. We hope this will change for better before it is too late.

SANDRP

An abridged version of this report and its recommendations was circulated as a statement and has been endorsed by over 17 organisations and individuals working specifically on biodiversity and water management in India. The endorsed letter can be found at http://sandrp.in/rivers/PR_Impact_of_Dams_on_Rivers_CAN_CBD_HELP_Oct_12_2012.pdf

¹⁹ <http://www.iucnredlistofecosystems.org/get-involved/>

EXTRACTS FROM INSPECTION REPORT OF THE SUB-COMMITTEE OF THE FOREST ADVISORY COMMITTEE TO ASSESS WILDLIFE VALUES AND ECOLOGICAL IMPACT OF THE RUPSIYABAGAR_KHASIYABARA HYDROELECTRIC POWER PROJECT (RKHPP)

K. Ullas Karanth, Ph.D., F.A.Sc- Member, FAC & Chair of the Subcommittee
H. C. Choudhry, IFS, Assistant Inspector General of Forests, MoEF

The proposal The State Government of Uttarakhand vide their letter dated 21.12.2009 submitted a proposal of obtain prior approval of Central Government under the Act for diversion of 217.522 hectare of forest land in favour of the National Thermal Power Corporation Limited for 30 years for construction of 261 MW Rupsiabagar - Khasiyabara Hydro-Power Project in Pithoragarh District of Uttarakhand.

The Project The project site is located in Eastern Kumaon, in the state of Uttarakhand on Goriganga River. The Goriganga River originates at the Milam glacier (at 5000 m ASL) and merges with the Kali River at an altitude of 600 m at Jauljib. The proposed dam site is located at 300 09' 56.39" N latitude and 800 15' 8.6" E longitude at 1720 meter elevation. The power house is located at 300 09' 23.37" N latitude and 800 16' 14.55" E longitude at 1258 meter elevation. Tibet lies to the north of the valley, and Nepal lies in the southeast (Kali river forming the Indi-Nepal boundary). To the west of the basin is Chamoli district, and higher reaches of the Nandadevi Biosphere Reserve form the boundary here. The basin extends over 2240 km² (WII report, 2003). The area is in Zone 5 seismicity.

Important wildlife area The nearest Protected Area i.e., Ascot Wildlife Sanctuary is located at approx. 11 km distance from the project site. The boundary of the Nanda Devi national Park, one among the two core zones of the Nanda Devi Biosphere Reserve (NDBR) is located at approx. 12.50 km aerial distance from the project site. The Valley of Flower national Park, another core zone of the NDBR is located at approx. 85 km aerial distance from the project site.

The site therefore lies in a region that is vital for maintaining the connectivity between important mid-to high-altitude wildlife regions.

WAPCOS's pathetic EIA The EIA report prepared by the WAPCOS to obtain Environment Clearance for the RKHPP reports presence of only 8 bird species. However, as per the existing literature a total of 228 bird species in 30 families and 118 genera, representing more than 45% of the breeding bird diversity of the Western Himalaya and nearly 55% of breeding bird species of the kumaon Himalaya are recorded in the region. Ten species of pheasants are found in the area, including Himalayan monal, and the Koklass pheasant, and several other altitudinal migrants. This assemblage represents 6 out of seven West Himalayan endemics found in Kumaon.

Recommendations The RKHPP is one of the six major Hydro Power Projects proposed to be constructed on the Goriganga river. All other projects except RKHPP are at the conceptual stage.

With respect to RKHPP, the grounds on which the FAC had earlier rejected the project still hold good and we maintain that the project will harm an important wildlife corridor.

We would like to make the following recommendations after our visit and post-visit assessment:

Keeping in mind the ecological value of the region in terms of the vast altitudinal diversity of flora and fauna, the presence of rare and threatened species of orchids (GBPIHED report, 2010), and the importance of the area as valuable wildlife habitat, the proposed RKHPP area is not devoid of ecological and wildlife values as was implied by some groups we met, as well claimed in the proposal for forest clearance.

Further, the NTPC has not taken into accounts the effects of silting and erosion. Although the NTPC claimed that no rare or endangered flora and fauna are found in the region, literature surveys, and personal communications with scientists who have worked in the area have clearly shown that the proposed site is indeed a valuable biodiversity location with many plants, orchids, birds, and mammals belonging to the rare, endangered, or threatened classification. Further, the project lies in the ecologically important zone between the Nanda Devi Biosphere Reserve and the Askot Wildlife Sanctuary (GBPIHED report, 2010) and likely is a wildlife corridor.

Apart from the RKHPP, five major and several small HPPs are proposed to be executed on the Goriganga and its tributaries. Some of these projects are located in or in close vicinity of the wildlife rich upper reaches of the Goriganga catchment and Askot Wildlife Sanctuary. It is suggested that the State Government of Uttarakhand may be asked to undertake comprehensive study through a multidisciplinary team from reputed independent academic institutions to assess cumulative impacts of the existing, under-construction and proposed HPPs in the entire Goriganga river basin.

All hydroelectric projects proposed in the region should only be considered by MoEF for environmental and forest clearance on the basis of such a detailed cumulative impact studies.

In summary, in view of the overall wildlife and biodiversity value and ecological and geological sensitivity of the region we strongly recommend that the Rupsiabagar-Khasiyabara HPP should not be accorded Forest Clearance. We endorse the earlier decision of the FAC to reject the project proposal.

MAHARASHTRA IRRIGATION SCAM & THE Rs 150, 000 CRORE QUESTION: HOW MUCH WILL WE EVER GET TO KNOW?

OPEN LETTER

Based on the issues raised in this article, an 'Open Letter for Urgent Probe into Maharashtra Irrigation Scam by an Independent Credible Agency' endorsed by over 27 mass based and research organisations and eminent individuals was sent by SANDRP to the Prime Minister, Chief Minister and Governor of Maharashtra, Union Ministries of Water Resources & Environment and Forests, Planning Commission, Central Water Commission, CAG, CVC and National Advisory Committee (headed by Smt Sonia Gandhi), requesting urgent intervention to institute a probe by an Independent, Credible commission.

The letter has been endorsed by National Alliance of People's Movements, India Against Corruption, Shramik Mukti Sangathana, Shramik Adivasi Sangathana, Samajwadi Jan Parishad, Yamuna Jiye Abhiyaan, SOPPECOM, among others. Medha Patkar, Shri Ramaswamy Iyer, former secretary, Union Water Resources Ministry, whistle blower Anjali Damania, Prof Bharat Jhunjhunwala, Prof Pradeep Purandare and Prof Brij Gopal are some of the persons who have endorsed the letter. We got some response from the office of the Chief Minister of Maharashtra and CAG. Subsequent to our letter, news reports showed that the Prime Ministers' office, Union Water Resources Ministry and Central Water Commission has started investigations in some of these issues.

What is unfolding over the last few months on the issue of corruption in irrigation projects in Maharashtra is unprecedented in many senses. However, one thing clearly stands out: Never before in the history of independent India has the links between politicians, contractors, engineers and bureaucrats been exposed more clearly. As the facts unfold before us in small parcels every single day, it is clear that they are all in this together. Absolutely shamelessly, brazenly as Vinod Rai of CAG put it. We have yet to see a sign of remorse or a feeling of wrong doing on the part of any of the involved parties. Unfortunately, we have to depend on those very groups to know the truth. Hence the question: How much will we ever get to know?

But first let us draw the contours of this issue. Maharashtra is the state with the largest number of big dams in India: the state has 1,845 large dams, which is about 36% of India's total number of dams. Incidentally, the second ranked state in terms of number of large dams, namely Madhya Pradesh, does not have even half the number of large dams that Maharashtra has. Just goes to show the dominance of big dam agenda in Maharashtra. Ninety two per cent of the Maharashtra dams are exclusively for irrigation, an

additional 4.5% dams have irrigation as one of the objectives, along with other objectives like water supply, hydropower or flood control. Over 40% of India's under construction dams are also in Maharashtra. The state has spent about Rs 75,000 crores over the last decade and will need to spend about Rs 76,000 crores to complete the under construction projects. So the size of the sum involved is more than Rs 1,50, 000 crores if all the projects were to be completed as envisaged now.

According to the government figures, the net area irrigated in Maharashtra in 1999-2000 was 32.96 lakh ha, which in the latest reported year of 2009-10 is 32.54 lakh ha. So in this whole decade, there is no increase in net irrigated area in the state, when the state has spent over Rs 75,000 crores in the period. So after spending all this money the state has not increased irrigated area at all. Moreover, in just five out of this ten year period (i.e. 2005-06 to 2010-11), the state economic survey for 2011-12 says, subsidies have been doled out to provide drip irrigation in 1.95 lakh ha and for sprinkler irrigation in 4.17 lakh ha, thus covering a total area of 6.12 lakh ha in these five years at an expense of Rs 1,134.82 crores. This expenditure was

also supposed to help save water use in irrigation and thus provide additional water for irrigating more areas, but even that has not happened.

The performance of irrigation sector in Maharashtra can be looked at in another way. The Economic Survey of the state for the year 2011-12 said, "The ratio of gross irrigated area to gross cropped area for 2008-09 in the State was 17.7 per cent, which was much below the National level ratio of 45.3 per cent." So the state having the largest number of dams in India, almost all of which are supposed to be for irrigation, performs 60% below national average in terms of proportion of area irrigated.

It should be added here that net area irrigated from Major and Medium Irrigation Projects in India is not increasing for two decades at all India level. As SANDRP has been showing since several years now, the area irrigated by M&M projects reached a figure of 17.79 million ha in 1991-92 and have never reached that figure since then. So what is going on in Maharashtra corroborates what SANDRP has been saying. Other major dam building states like Andhra Pradesh, Madhya Pradesh, Gujarat and Karnataka could also be subject of serious

investigations in this context. These figures indicate that something is seriously wrong in Maharashtra's irrigation sector. In fact some official reports show that corruption issues may be involved here. The first of such reports dates back to late 1990s when a police official based in Pune had requested permission to probe the possibilities of corruption in contracts given out by the Maharashtra Krishna Valley Development Corporation. That officer told some of us recently what mechanisms were used in this process. At this stage it was the BJP-Shiv Sena government that was ruling Maharashtra. That permission was denied. Much latter, reports from the Comptroller and Auditor General, starting from its report in 2007 (for Gosikhurd project) to the latest one for the year 2010-11 (for AIBP (Accelerated Irrigation Benefits Programme (AIBP) and Vidarbha Irrigation Development Corporation (VIDC) for the period 2006-07 to 2010-11) showed signs of serious wrong doings. However, the CAG report does not seem to have captured the most serious aspects of the corruption and the politician-contractor-officials nexus. The HT Mendhegiri Committee (June 2010) Report reviewed the 22.93 km left bank main canal of Gosikhurd project in Vidarbha found the entire work to be of highly inferior quality and recommended demolition of this work. One-person Vadnere Committee Report in 2010 had highlighted the corruption and contractor nexus in VIDC, and had recommended a departmental enquiry, but no enquiry was constituted in the past 2 years since the report came out. MLA Shri Suresh Gambhir and Vijay Madettiwar also filed written complaints in this regard and Maharashtra govt claims to have charge sheeted thirteen officers responsible for the irregularities as

per some documents obtained by SANDRP under RTI.

The credit for exposing the link of the politicians with the contractors, engineers and bureaucrats would largely go to the civil society groups. The origin of this exposure can be seen in the campaign against damslake Kalu, Kondhane (Anjali Damania of India Against Corruption exposed the corruption involved in Kondhane dam, as also some others), Susari, Shai, Balganga Gargai, and others in the Konkan Irrigation Development Corporation area, even though the amounts of expenditure and corruption may be much larger in VIDC area. In fact it was the meeting of the representatives of these groups past midnight on May 4, 2012, which led the Chief Minister Prithviraj Chauhan announcing the next day that he will bring out a white paper on Irrigation sector in Maharashtra.

The Nationalist Congress Party (NCP) which is a partner in ruling coalition in Maharashtra and holds the irrigation portfolio since 1999, was clearly not happy with this announcement. Most recently, on Sept 26, 2012 NCP's Deputy Chief Minister Ajit Pawar resigned, since he held the water resources portfolio during 1999 to 2009. But the drama that unfolded in months before the resignation revealed the political links in this irrigation scam. The NCP bosses, mostly Union Agriculture Minister Sharad Pawar spoke up against whoever raised problems in Maharashtra irrigation sector, be it the Governor, the Chief Minister, the opposition, the CAG, the non governmental organisations or the media. These prompt reactions from the NCP bosses were clear signs of their discomfort on the issue. The NCP actually managed to stall the publication of the white paper which was supposed to come within 15 days from the date of announcement by the Chief Minister on May 4, 2012. Over four months later, the white paper is still to be made public.

When Vijay Pandhare, a serving chief engineer of Maharashtra raised these issues through a series of letters, the opponents even tried to brand him as insane.

The links of the Bharatiya Janata Party leaders in this scam have been exposed only more recently, but they seem to have the closest proximity, since a large number of contractors that have benefited from irrigation contracts in the state belong to the party. This possibly explains why the opposition was quite or ineffective in exposing this scam for so many years. Even the congress chief ministers before Chavan seemed happy to let the sector go along from one scam tainted project to another.

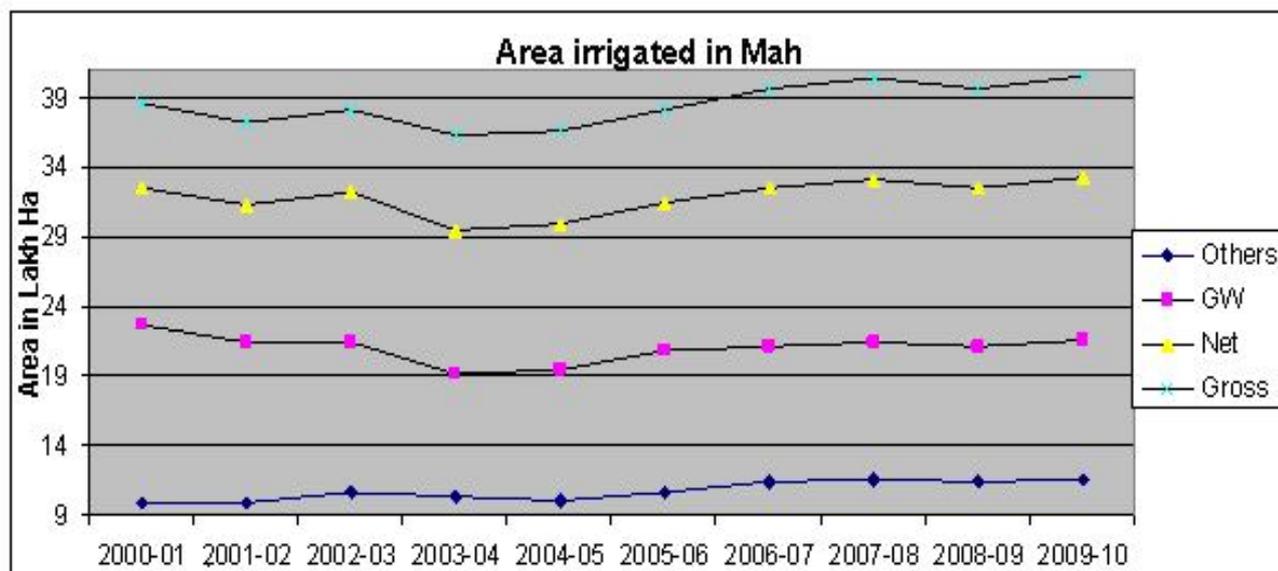
The scam, the politics that has ensued, the numerous shocking and not-so-shocking revelations and strange nexuses that came tumbling in its wake have vindicated what organisations like SANDRP have been saying for a long time: that centralised, large project-oriented water management does not lead to any betterment of the ground situation, despite its huge social, ecological and financial impacts.

SANDRP and its partner organisations have been involved in raising the issue of corruption from the initial stages, from unearthing of irregularities in Kondhane and Kalu Dams to organising a community meeting on the 4th of May 2012 with IAC on Dam Scam, which was closely followed by a declaration of bringing out a White Paper on Irrigation Projects. In July 2012¹, SANDRP had brought out a brief report highlighting the very blatant links of politicians in Maharashtra with the big dam lobby.

RECENT EVENTS:

The rapid happenings during this period, including letters and protests from civil society as well as in-service Irrigation Engineers warrant a closer look at the Irrigation scenario in Maharashtra. It is a

1 http://sandrp.in/irrigation/NCP_and_Irrigation_Scam_politics_July_2012.pdf



pointer to the direction that big dam agenda, pushed forth by Central water Commission, Ministry of Water Resources and the establishment, can lead us to. This issue has ramifications beyond the specific schemes, specific department, and specific state and also involves large number of central government agencies.

At the same time, the issue has a serious bearing on the governance of the sector, as well as wellbeing and safety of millions of people residing downstream of dams and farmers who have been waiting for benefit from the projects, despite society paying huge social, environmental and economic price for these. These issues should be looked into in detail, by appointing an independent scrutiny of all major and medium projects in Maharashtra since the last 17 years (the scam has origins going back at least to 1995 as shown below) and immediately stop work on and use of projects whose safety

is questioned by the official persons/ agencies.

POOR TRACK RECORD

The Economic Survey of the state for the year 2011-12² said, "The ratio of gross irrigated area to gross cropped area for 2008-09 in the State was 17.7 per cent, which was much below the National level ratio of 45.3 per cent." The survey goes on to say that 65.1% of the net irrigation in Maharashtra is based on groundwater.

The graph above is based on the figures³ given in the Economic survey and show the irrigated area figures for the last decade, for ground water irrigation, Irrigation by other sources (this category includes major, medium, minor (state and local level as classified in Maharashtra)) and also total net and gross irrigated area in the state. The flat graphs for all the four sets of figures and for whole of the decade and particularly the bottom graph which include irrigation by Major and Medium irrigation projects tell the story of lack of growth in area during the period.

It is not that the lack of progress in irrigation is due to lack of funds. On the contrary, as the Hon. Governor of Maharashtra in his

address in March 2012 said, "The WRD has communicated that the unspent balance with the Corporations was Rs. 2,438/- crore at the end of 2009-10 and Rs. 3,496/- crore at the end of 2010-11. These balances are of the tune of 35% and 45% of the total plan size of the respective years." The Governor expressed concern that "the balance cost of ongoing projects being executed by the Irrigation Corporations in the State as on 1.4.2011 is Rs. 75,366 crore".

More than 747 irrigation projects are incomplete. One of these projects, Gosi Khurd is national project (which means 90% of the money would come from the centre), but has been described as white elephant and is mired in shocking corruption and mismanagement charges. Of the Rs 2,787.176 crores released under the whole of National Projects scheme till the end of 11th Five Year Plan (March 31, 2012) since Feb 7, 2009 when the guidelines for the National Projects was released, Rs 2582.94 Cr or 92.7% of the total NP funds have been released for Gosikhurd project alone! To top it all, the 6th meeting of the High Powered Steering Committee of

2 Economic Survey Report of Maharashtra 2011-12: http://mahades.maharashtra.gov.in/files/publication/esm_2011-12_eng.pdf

3 It may be noted here that these figures from agriculture department are closest to the ground realities among all the figures about irrigation that are available. The figures from the water resources department about irrigation potential created and utilised are no more than claims that have little reflection on ground realities.

4 Documents obtained by SANDRP under RTI

the NP held on May 14, 2012⁴, even while noting the outstanding issues of corruption, decided to release more funds for the project for 2012-13. Maharashtra has also been getting large sums under Accelerated Irrigation Benefits Scheme from the centre. All this highlights the need for an independent scrutiny of the entire sector. In any case, the Union Water Resources ministry and Central Water Commission has made the nation a laughing stock by calling such projects as National Project and allocating thousands of crores of public money for the projects.

CHIEF ENGINEER EXPOSES HUGE SAFETY ISSUES, ENGINEER-POLITICIAN-CONTRACTOR NEXUS:

Following the unearthing of the huge scam, Shri Pandhare wrote a detailed letter on May 5, 2012 to the Chief Minister, the Governor, the Secretary and the Principal Secretary Water Resource Department about the severe problems plaguing all aspects of dams in Maharashtra. Shri Pandhare is Chief Engineer (Design, Training, Research and Quality Control), Maharashtra Engineering Training Academy (META), Nashik. META is a nodal organisation that includes Dam Safety Organisation, Quality Control Organisation and Central Design Organisation under its purview. He has been a Member of State Technical Advisory Committee to look at estimates prepared by the WRD on Dam projects.

On 21st September, 2012, Shri Pandhare addressed a letter to the Engineers Mahasangh, elucidating these points⁵. Scrutiny of estimates and Quality Control for projects exposes:

- "Many serious mistakes have been made; unviable projects have been made viable, projects which should not have been taken up in the first place,

unnecessary projects, etc., sanctioned by officials of WRD through pressure by politicians. All the officials of WRD work under tremendous pressure from politicians as well as contractors. The officials who protest against this are transferred in no time."

- "At every administrative clearance, new aspects get internalised in the estimate, many projects drag on for 20-25 years and are never completed, while cost keeps on escalating. Farmers get no benefit out of this."

- Common irregularities seen are: "Useless gigantic lift irrigation schemes, unrealistic estimates, managing tenders, changing layout, designs, sections, heights, irrigated area, etc. to keep the project going."

- Quality control of WRD dams has become a big issue. "23 kms of Gosikhurd canal (A National Project) has developed cracks in the first year itself." Parts of that canal had to be demolished even before being tested.

- In 2012, when he was the Executive Engineer Quality Control Dept in Dhule, he had sent a 600 page report on how the construction of the Lower Tapi Dam was of poor quality. "But government constituted a committee of corrupt officials on this and killed the issue."

- **"It will be better not to imagine what would be the scale of the calamity if this dam breaks, there are 3 large dams downstream of this one. 25-30 villages will be washed away. Who will be responsible for the deaths of thousands of people? Secretary of WRD himself has been protecting these works."**

- Tarali Dam in Satara is a 74 mts high dam. When he went to check it in his official capacity, the register containing the materials

used for the dam, when asked for, was not shown to him by the contractor.

- "As per the tender, the compressive strength of cores should be 117 kg/cm. But in reality, the cores have strength at around 40 kg/sq cm. Construction has been of extremely poor quality. All the 66 cores have strength of 58% and not 100% as required by the tender. In dam works, even a difference of 4-6 % is taken very seriously. This construction with quality a huge 42% lower than required is poorest of the poor. CBI enquiry should be undertaken against this as our 'bogus' committee members are well known to submit 'bogus' "ok" reports to the govt. Even imagining the destruction that will happen if Tarali breaks makes one uneasy. Only god can save this department. Same is the case with Hathnur project in Jalgaon". (Hathnur dam and Lower Tapi, both on Tapi River, are just upstream of the massive Ukai Dam in Gujarat, upstream of the Surat city).

- **"Playing with public money may be still a smaller offence, but the WRD should not play with people's lives."**⁶

This address by the Chief Engineer, at his own peril itself underlines the urgent need of enquiry in Maharashtra's Water Resources Sector, even if one may not agree with everything that he has said. Instead of taking serious note of these letters attempts has been on to discredit him and describe him insane. He has now been forced to request voluntary retirement from service. In his letters and media statements, Shri Pandhare has categorically stated that projects which have been dragging on for years and which are less than 25% complete should be scrapped immediately as most of them have

5 The full letter in Marathi can be found at: <http://jaagalyaa-thewhistleblower.blogspot.in/2012/09/shree-pandhare-ce-wrds-appeal-to.html?spref=fb>

6 Here it may be noted that the consequences of unsafe dams may visit the state sooner than most people expect, a dam in Jawahar Taluk in Thane district is already a threat for 30 villages: <http://www.punemirror.in/article/4/201210032012100308102759874e952dc/Leaking-Khadkad-dam-threatens-to-submerge-30-villages-in-Thane.html>

been set up only 'to loot the public exchequer'⁷.

PETITIONS IN HIGH COURT:

A petition has been filed in the Nagpur Bench of the Mumbai High Court by Jan Manch, which raises a number of issues including the fact that 30 major irrigation projects were granted hurried approval in just four days: June 24, 2009 (10 projects); July 7, 2009 (5 projects); Aug 14, 2009 (11 projects) and Aug 18, 2009 (4 projects)⁸. As per another report, during his stint as water resources minister, Mr Ajit Pawar 'hurriedly' granted project approvals totalling Rs 20,000 crore during an eight-month period in 2009 (32 of them worth Rs 17,700 crores in three months during June-Aug 2009), without the mandatory clearance of the governing council of Vidarbha Irrigation Development Corporation⁹.

A Petition on Kalu Dam in the Mumbai High Court has led to the court asking for stoppage of work and also asking why the officials responsible for sanctioning release of contracts and money to contractors should not be prosecuted.

A Petition on Kondhane dam in the Mumbai High Court is ongoing in which the Govt has submitted that the contracts and permissions for the projects have been cancelled, but already large sums of money were spent. The cancellation happened because of the Governor asking the govt report on the dam following petitions from RTI activists.

A Petition on Lower Painganga Dam in Yavatmal in 2009 had

resulted in high Court issuing a stay order on the dam construction, going on without proper clearances. The work continued despite these orders and stopped only after wide local protests. Lower Painganga Dam too is shrouded in charges of immense corruption, cost escalation and political-contractor nexus.

BLATANT ILLEGALITIES AND IRREGULARITIES IN ON-GOING PROJECTS:

The Projects coming up in Vidarbha and also around Mumbai are shrouded with illegalities and a clear contractor-politician-bureaucrat nexus, here are some examples.

Balganga Dam, coming up near Pen and is 90% complete. However, its proposal for forest clearance has still not reached the MoEF, when the dam is about to submerge 260 hectares of forests in Western Ghats, a World Heritage Site. Nor is the Rehabilitation and Resettlement Plan ready. Cost of this dam has been hiked 150% post tendering.

Kondhane Dam, coming up near Karjat saw post tender cost escalation from Rs 56 crores to Rs 328 crores and height increase from 39 meters to 71 meters within one month of tender approval. The entire tender clearance was done in a single day and technical clearance was also given in a single day. The contract for this dam has been cancelled following a PIL in Bombay High Court and Governor's explicit orders. No action was taken by the WRD, despite huge outcry by civil society

organisations and media till the HC and Governor orders.

According to tender conditions laid by Government of Maharashtra, one contractor can work on maximum three projects in a circle. However, bypassing this, the same contractor is working on seven ongoing projects in Konkan, for example. This has been made possible by floating another company just for the namesake (FA Construction and FA Enterprises¹⁰ in this case, with same registered office, same board members and even using the same projects to show their proven capacity). Everyone including media¹¹ can see through this ploy, it is clear that this is going on hand in glove with the government including ministers, bureaucrats and engineers.

In Vidarbha, similar irregularity is being practiced by a company belonging to BJP Member of Parliament, known to be close to the President of that party. In this case, Shakti Kumar M Sancheti Ltd ceased to exist in Nov 2005 when it was renamed as SMS infrastructure. But this defunct name of the firm was used later on to get several contracts amounting to Rs 1,350 crores¹². In some of these projects, shockingly, the design finalisation was done after the issue of tender documents, violating basic norms of irrigation projects. This also shows the involvement of politicians across the parties¹³.

NON-EXISTENT ENVIRONMENTAL GOVERNANCE:

In the entire discussion and recent political controversy surrounding large dams in Maharashtra, the

7 http://www.thestatesman.net/index.php?option=com_content&view=article&show=archive&id=426205&catid=36&year=2012&month=10&day=10&Itemid=66

8 See e.g.: <http://www.thehindu.com/news/states/other-states/pawar-brings-down-curtain-on-resignation-drama/article3952199.ece>

9 See: http://articles.timesofindia.indiatimes.com/2012-09-24/india/34060889_1_irrigation-projects-project-approvals-water-resources

10 See: <http://www.facindia.com/>, http://articles.timesofindia.indiatimes.com/2012-09-26/india/34100909_1_irrigation-projects-irrigation-scam-cost-escalation, <http://www.hindustantimes.com/India-news/Mumbai/Irrigation-projects-in-Konkan-hit-by-contractor-babu-nexus/Article1-925216.aspx>

11 See for example: http://articles.timesofindia.indiatimes.com/2012-04-27/mumbai/31421319_1_irrigation-projects-kondhane-dam

12 See: <http://timesofindia.indiatimes.com/city/mumbai/BJP-MPs-company-got-Rs-1350cr-dam-deals-illegally/articleshow/16619644.cms>

very crucial angle of huge social and ecological impacts of these projects is being sidelined. Environment Governance seems to be non-existent in Maharashtra today and the MoEF is taking no steps to correct this as statutorily required as per the Environment and forest clearance conditions and Environmental Management Plans of projects. Projects are sanctioned, work orders are given and work proceeds before getting any mandatory clearances from MoEF or State Forest Department and the MoEF has taken no action. Projects requiring clearances from the National Wildlife Board are going ahead without the same and MoEF is happy to watch. Some Examples are narrated here.

In the case of Kalu Dam coming up near Murbad in Thane district, work on the dam started without Forest Clearance either applied or granted. Even as the Chief Secretary and Mumbai Metropolitan Region development Authority (MMRDA) made clear statements that funds should not be released to this project without Forest Clearance, MMRDA released the funds to the tune of at least Rs 400 Crores. However, the project was denied Forest Clearance by the Forest Advisory Committee in its meeting on 2nd April, 2012. The work on this dam has been stayed by the Bombay High Court in response to a PIL filed by Shramik Mukti Sangathana. Assessment and settlement of individual and community forest rights according to the FRA (2006) has not been completed.

In case of Kondhane Dam, work started before applying for Forest Clearance, which is completely illegal. Assessment and settlement of individual and community forest rights according to the FRA (2006) has not been completed.

In case of Barvi Dam, height has

been increased three times without seeking any environment Clearance, the 4th height increase is now on going, again without any Clearance. Assessment and settlement of individual and community forest rights according to the FRA (2006) has not been completed. Even in cases where Forest Clearances have been considered, the MoEF does not display the project proposal documents, the clearance letters or compliance reports, in violation of the orders of the Central Information Commission¹⁴.

Work on Balganga dam is nearly complete without even the proposal for Forest Clearance reaching the MoEF. Assessment and settlement of individual and community forest rights according to the FRA (2006) has not been completed.

In case of Lower Painganga Dam, VIDC had actually floated a tender, seeking contractors who can acquire a Forest Clearance for the project which is to submerge more than 1,000 hectares of forest land. The tender was withdrawn only after very strong reactions from the media and court.

HUGE SOCIAL AND ECOLOGICAL IMPACTS OF ILLEGAL PROJECTS: Planned, Ongoing and proposed dams around Mumbai alone are set to submerge more than 6,000 hectares of Forests in Western Ghats, a UNESCO World Heritage Site. No Environmental Impact Assessment, Social Impact Assessment, Environment Management Plan, monitoring or Public Hearings are mandatory for these dams as they are for Drinking and Industrial water supply. The assumption that such dams are environmentally and socially benign is seriously flawed, shows bankruptcy of thinking on the part of MoEF. In all, these dams will

displace more than 25000 tribals. Many of these dams are shrouded in illegalities and corruption charges.

Chief Engineer Thane, has himself given a written undertaking that after Shai Dam, no other dams will be needed for Mumbai for at least a decade. So it is clear that many of these are unnecessary dams, having serious negative impact on each sector: from governance to social and environmental wellbeing as also unnecessary expenses.

While Ministers from several political parties are pressing the centre for releasing funds for the extremely corrupt Gosikhurd project, the rehabilitation of more than 1800 families affected by the project is still not completed.

Lower Painganga Dam also in Vidarbha is set to affect nearly one lakh people. No rehabilitation and resettlement work is on-going currently, say local groups.

DELAY IN BRINGING OUT WHITE PAPER: While a White Paper on Irrigation sector in the state by itself will not solve almost any of these serious problems, but even to bring out a white paper, there has been huge delay, possibly because some people are not happy to see that real facts come out. The Chief Minister announced on 5 May 2012, following meeting with delegation of civil society organisations the previous day, that a white paper on "irrigation projects in the past ten years" will be made public soon, see: articles.timesofindia.india.com/2012-05-05/mumbai/31585831_1_irrigation-projects-irrigation-schemes-irrigation-plans.

No White paper arrived for the next ten days. On May 16, 2012, "soon" changed to "within 15 days" since "the public needed to be informed about the status of irrigation", said

13 Newer aspects of illegalities seem to be surfacing almost everyday, here is a story about how advances were illegally given to contractors, with allegations of kickbacks: <http://www.ndtv.com/article/india/the-70-000-crore-scam-in-advances-to-contractors-some-see-kickbacks-275047>

14 The meeting of FAC to be held on Oct 30-31, 2012 got postponed following letters from SANDRP and others and following media persons questioning the minister about meeting going to happen in violation of CIC orders.

the Chief Minister. The Chief Minister, significantly, was talking to the media after a cabinet meeting where this was discussed, see: www.business-standard.com/generalnews/news/white-paperirrigation-in-15-days-chavan/9542/ and http://www.dnaindia.com/mumbai/report_white-paper-on-irrigation-in-15-days-prithviraj-chavan_1689726.

Again no white paper came after next fifteen days, no further word came for two whole months. Then on July 14, 2012, the then deputy Chief Minister Ajit Pawar said in Legislative Council meeting that, "a white paper on irrigation projects will be tabled before the commencement of the winter session of the council in Nagpur". This means that what was supposed to come soon and then in fifteen days, would not come for six months as the winter session happens only in December, see: http://articles.timesofindia.indiatimes.com/2012-07-14/mumbai/32673963_1_irrigation-projects-white-paper-deputy-cm-ajit-pawar. Even at this stage, the deputy CM did not find it fit to resign, his resignation came much later.

SCAM ORIGIN DATES BACK TO 1995:

The scam, it seems, started with the formation of Maharashtra Krishna Valley Development Corporation (MKVDC) in 1995, involving manipulation of tenders, costs and project parameters. In 2007, Maharashtra's former inspector general of police SM Mushrif had told media that while he was posted as the Superintendent of Police, Anti-Corruption Bureau in 1998, he had sought permission to probe into a bid by irrigation contractor P. Venku Reddy from Andhra Pradesh and Avinash Bhosale for a Rs 100 crore Dhom Balakwadi project in Satara, where a renowned contractor R.M. Mohite was disqualified only to favour Pradhana Constructions of P. Venku Reddy, of which Avinash Bhosale

was also a partner¹⁵. Mushrif's report, which was sent to the then additional DGP, ACB, in Mumbai sought permission from the state government "for an open inquiry into the affairs of the MKVDC so that many more irregularities can be exposed and offence registered against the defaulting officers and office-bearers." There was absolutely no response to my report or request, Mushrif told us weeks earlier. In 2002, Ajit Pawar, as irrigation minister for MKVDC had taken the decision of approving a 30-year lease agreement between the MKVDC and the Lake City Corporation (the previous avatar of Lavasa Corporation) for constructing mini-dams in the backwaters of the Varasgaon dam in Pune, the deal had future ramifications as it came to light in 2005-06¹⁶.

Urgent Minimum Next Steps

What all this means is that there is significant resistance to even a white paper, which at the most will only be a statement of facts. What is required is much more, including a credible independent commission of enquiry and fixing responsibility for those who are responsible for any wrong doing. What is narrated here is only a small part of the story. The extent of the actual problem is huge and all these irregularities have been going on for over a decade and a half at least. In view of these serious issues relating to irregularities, corruption, dam safety, governance, social and ecological impacts, following steps are urgently needed to be taken:

1. Order an Independent scrutiny of Water Resource Development Projects in Maharashtra for at least the last seventeen years, including Major, Medium and Lift Irrigation projects, Hydropower, Drinking water and Industrial water supply projects and working of all Irrigation Development Corporations (IDCs) including VIDC, MKVDC, Konkan IDC and Marathwada IDC. The scrutiny should look at the design of the project, the current status, the projected and actual costs,

the quality of work, dam safety requirements, the intended and actual benefits, the intended and actual environmental impacts, the intended and actual environmental management plan and its progress, rehabilitation and resettlement plan and its current status.

The scrutiny should include: Date of first administrative approval and cost so approved along with B.C. ratio, Similar information about subsequent revised administrative approvals, Dates on which Total actual expenditure equalled each of the Administratively approved costs, Total actual expenditure incurred as on the dates on which each of the revised administrative approvals was given, Authority which gave each of these administrative approvals and whether this Authority was empowered by Govt. Resolutions/Orders to give such approvals.

The scrutiny should also look into the alternative proposals given by people's organizations (wherever applicable) to make these schemes more equitable, sustainable and democratic and how to make the decision making responsive to such alternative proposals from people's organisations.

2. Immediately stop filling of Lower Tapi, Hathnur and Tarali Dams and conduct a CBI enquiry as suggested by Chief Engr. Pandhare on the material used for these dams.

3. Conduct immediate enquiry into the safety of Lower Tapi, Hathnur and Tarali Dams by credible independent team. Here it should be noted that Central Water Commission, which is supposed to ensure safety of the dams along with the state WRD, has failed this respect and hence it should also be included in the scrutiny.

4. Issue no further Technical, Financial, Forest, Environment or Wildlife clearances to dams in Maharashtra unless the above mentioned scrutiny of existing and

(contd on page 27.....)

15 See e.g.: http://articles.timesofindia.indiatimes.com/2007-05-29/pune/27879158_1_mkvdac-acb-dri

16 See e.g.: <http://www.firstpost.com/politics/why-did-it-take-so-long-to-resign-ajit-pawar-468269.html>

WATER AUDITING OF IRRIGATION PROJECTS IN MAHARASHTRA: MYTH & REALITY

Maharashtra is supposed to be one of the progressive, industrialized and urbanized states of India. Water Resources Development & Management in Maharashtra has been in some sense a benchmark in India's water sector. Water Resources Department (WRD), Government of Maharashtra (GoM) has initiated restructuring & reforms in water sector. Its list of achievements (Box -1) in this regard appears to be quite impressive.

But of late, there is a steady & continuous flow of criticism against WRD, GoM. Many things are being revealed & the department is in limelight mostly for wrong reasons. Though the charges of corruption is a not a new & surprising thing, the demand for issuance of white paper on present status of irrigation has raised many basic issues. It is quite likely that comprehensive & in-depth study of those issues may reveal the other side of the coin. It is needless to say that the irrigation scenario of Maharashtra is not up to the mark & in fact, contrary to the generally held perception. Reality appears to be significantly different than the image.

Though it has now become imperative to critically study the so called achievements (Box-1) in a greater detail, this article limits its scope to a study of Maharashtra's water audit reports only, because water audit in a way reflects the state of affairs of canal irrigation.

Maharashtra initiated Water Auditing (WA) of Irrigation Projects in the year 2003-04. Secretariat for Maharashtra Water & Irrigation Commission has been converted into Maharashtra Water Resources Development Centre (MWRDC) to carry out Water Audit & Benchmarking of Irrigation Projects. Administrative details regarding MWRDC & the "how to do it" part of water audit are available in every water audit report & on official web site (www.mwrdc.org). The web site is very well developed, efficiently managed & updated regularly. All water audit & benchmarking reports published so far & corresponding data files are available on the web site. The procedure of water audit has been developed in a very systematic manner. The software, especially, is

praiseworthy. Its robust design has enabled MWRDC to carry out most of its work on line. Indicators being used for water audit are given in Box-2.

Water audit is a felt need of water sector. Since water audit can bring in accountability & transparency, nobody denies its necessity & importance. However, everything depends upon how exactly it is done in actual practice. And there are problems at field level! The concept of water audit is not being implemented in letter & spirit. Serious, knowledgeable, experienced observers & sincere well wishers of WRD, GoM are now whispering in private conversation that WRD is not that serious & honest about water audit. The reports are being published just as an annual ritual for image building rather than capacity building. Nothing is going to happen/change, according to them, because ground reality remains the same & nobody is accountable for whatever is published in the glossy reports with colorful graphs. Unscientific/ unrealistic / unmeasured data is casually but officially being published in the name of water audit. Is this criticism correct & valid? Is water audit in Maharashtra a myth? To answer these questions Report on Water Auditing of Irrigation Systems in Maharashtra State (2009-10) has been analyzed & the comments are given in following paragraphs¹.

Comments on Report on Water Auditing of Irrigation Systems in Maharashtra State (2009-10):

(1) Mention of "urgency of water auditing in Non-Irrigation

Box-1: Restructuring & Reforms in Water Sector

1. Maharashtra Water & Irrigation Commission (MWIC) Report, 1999
2. Irrigation Status Reports (in September every year since 2001)
3. Benchmarking of Irrigation Projects (in March every year since (2001-2002)
4. State Water Policy (SWP), 2003
5. Water Auditing of Irrigation Projects (in March every year since 2003-2004)
6. Maharashtra Water Resources Regulatory Authority (MWRRA) Act, 2005
7. Maharashtra Management of Irrigation Systems by Farmers (MMISF) Act, 2005
8. Maharashtra Water Sector Improvement Programme (MWSIP), since 2006

¹ Pradeep Purandare is retired Associate Professor, Water and Land Management Institute (WALMI), Aurangabad, Maharashtra. He was one of the members of a study group constituted by Maharashtra Water and Wasterwater Regulatory Commission (MWRDC) in 2005 to prepare manual on water audit. He was also associated with workshops & training programs on water audit conducted by WALMI since its beginning. He had officially submitted his comments given here to WRD, GoM & had, in fact, suggested that "it would be prudent to officially withdraw the water audit report" in Aug 2011 when he was still in service. Of course, nothing happened. The author, after taking voluntary retirement, has continued the follow up through RTI & by writing articles & letters in state level Marathi news papers. The author maintains a regular blog jaagalyaathewhistleblower.blogspot.in and can be contacted at pradeeppurandare@gmail.com

water use sector also" [page-9, last line] is welcome. It needs to be introduced urgently.

(2) Analysis done in "Chapter-2: Annual Water Accounts 2009-10" should have been **plan- group-wise / river sub basin-wise** & in fact, as per percentage storage-wise too [table on page-1]. That would have been more logical & internally consistent.

(3) Data on Water Availability in Reservoirs are not scientifically correct because encroachment of **sedimentation** on live storage has not been studied in majority of the projects. Wherever the same has been studied, it has not been used [Para. 2.3.0, page-20, 21].

(4) Similarly, water audit would simply be a farce if **Preliminary Irrigation Program (PIP)** (a water budget!) itself is either not prepared at all (Indicator-III, pages 111 to 113 & 157 to 163) or has not been officially approved and not actually used in irrigation scheduling

(5) Data on **Evaporation** from Reservoir are not scientifically correct because there is no arrangement to actually measure the same. Moreover, appropriate coefficients [namely "open pan to mesh" & "pan to lake"] have mostly not been applied. There are reasons to believe that reported evaporation is exaggerated in many projects because unauthorized water use & unreasonable wastage of water are reportedly generally "accommodated" in so called evaporation.

(6) **Created potential** needs to be urgently corrected project-wise considering mostly the adverse effects of less yield of water due to up-stream abstractions; encroachment on live storage due to sedimentation; diversion of water from irrigation to nonirrigation; low kharif utilization; more than assumed conveyance & reservoir losses; changed cropping pattern; tendency to declare potential as 'created' even without construction of field channels; substantial increase in area under lift irrigation on reservoirs, rivers & canals; area irrigated in influence zone (pl. refer Maha. Water &

Box-2: Indicators used for Water Auditing of Irrigation Projects

- I. Water availability in reservoir on 15th October
- II. % of actual evaporation to live storage & II(A) % of actual evaporation to projected evaporation
- III. Target & achievement of irrigation potential utilization
- IV. Water use pattern
- V. Irrigation System Performance (Canals)
- VI. Percentage of planned & actual non-irrigation use
- VII. Percentage of un-utilized water to live storage
- VIII. Conveyance efficiency of main canals
- IX. Actual cropping pattern

Note: Indicators applicable as per project category are as follows

Major Projects: all the above indicators;

Medium Projects: all the above indicators except VIII & II(A) apply

Minor projects: Only I, II, IV & V apply

Irrigation Commission Report, 1999); ever increasing conversion of irrigated command area into Non Agriculture (NA) area, etc. In fact, WRD had issued instructions to carry out "Revision of Irrigation Potential" sometime back. Many Irrigation Divisions had actually done that exercise & submitted revised [read 'reduced'] irrigation potential for approval. It is not known why that exercise was not taken to its logical conclusion. To say the least, the reported figures of potential created are far from the reality. Any comparison of actual irrigated area with those figures is bound to be misleading. And more over, there is hardly any measurement of actual irrigated area also! So the credibility of the whole exercise / report is highly questionable.

(7) Concept of **Rabi Equivalence** was used for quite some time by WRD to address the issue of gap between created & utilized potential. Water Audit is strangely silent about it.

(8) Data on Water Use Pattern is not scientifically correct simply because it is not based on **actual measurement**; virtual absence of functioning water measuring devices in case of flow irrigation & water meters in case of lift irrigation & nonirrigation being the main bottleneck. Rampant use of unrevised Capacity Tables further adds to the confusion.

(9) It is strange & even shocking that **"unauthorized water use for both**

irrigation & non-irrigation" has not been reported at all as a separate category under Water Use Pattern. Does it mean that there was no unauthorized use at all? Were there no 'panchnamas' at all & hence, no penal charges? Why deny the **theft of water** when it is so rampant & so visible?

(10) Criticism regarding **Irrigation System Performance [ISP]** is serious & well known since beginning. Ha /Mcum is not ascientific criterion because it does not consider crop, crop-wise irrigation requirement, Irrigation Interval & number of rotations.

Moreover, for the sake of internal consistency, whatever is provided for in the Water Budget [PIP] should only be considered in Water Audit. Well - irrigation / percolation is not provided for in Water Budget & hence, area irrigated on well- irrigation / percolation should not logically be considered in Water Audit. It would be interesting to check what ISP is assumed in PIP? Is it as per state norm? If not, then analysis done in para. 2.2.5 /page19 needs to be changed.

Assuming a same ISP criterion irrespective of regional variation [soil-crop-climate] is not only a mistake but it does gross injustice to paddy growing areas. ISP criterion for Kharif & LIS has not been yet fixed.

According to the feedback received time & again in WALMI training, **actual crop-area**

measurement has virtually stopped since long in many of the projects & hence, the so called figures of actual irrigated areas do not have any scientific & credible basis.

(11) **Analysis of planned & actual non-irrigation use** [Para 2.2.6/page19] does not offer any explanation. Only table is given. Following questions merit serious attention:

What is the basis of "planned non-irrigation use as per PIP"?

Does it include non-irrigation use officially permitted by Govt. only or does it also include reservation done as per District Collector's order?

Whether PIPs were officially approved by Superintending Engineers as per GR on PIP?

Why actual non-irrigation is significantly more than assumed in PIP? Is it a case of bad governance or are there any genuine practical difficulties?

Why percentage of actual nonirrigation with that of provided for in project report is as great as 913% in case of Aurangabad region? How come the report is silent about such a serious matter?

When there are no water meters in most of the cases & when water is indirectly measured [pumping capacity & pumping hours] & recorded by water user himself [& not by service provider], what is the reliability of data on nonirrigation water use?

(12) It is necessary to verify whether un-revised/ obsolete/wrong Capacity Tables have contributed in the phenomenon of so called **unutilized water**.

Non-development of command area, lack of field channels, deep black cotton soils, assured rain-fall zone, better availability of ground-water, lack of awareness campaign, time required for transition from dry land agriculture to irrigated agriculture, socio- economic and or administrative hurdles in not getting the water, poor physical status of

canal systems & poor management of irrigation, absence of management staff, etc could separately or jointly be the reasons behind the so called "unutilized water".

One more possibility also needs to be checked. As

compared to day to day irrigation management,

management of nonirrigation is easy. Moreover, assessment & recovery of water tariff is also comparatively better in case of non-irrigation. Hence, some canal officers now a day reportedly prefer increase in water use for non-irrigation. They even at times, it seems, discourage water use for irrigation. That perhaps leads to "unutilized water". Showing unutilized water creates ground/ justification for more diversion of water from irrigation to non-irrigation. If this is true, then it is a sinister design against the "irrigation". Report on Water Audit should not knowingly or unknowingly/ directly or indirectly help such anti-social elements & be a party to their sinister design.

(13) Para.2.2.8 [page-20] gives only well known theoretical information about **Conveyance Efficiency** of Main Canals. It is strangely silent about reported conveyance efficiencies [pages 133 to 135]. Following points need serious & urgent consideration:

1. Only major projects have been considered.
2. Only main canals of major projects have been considered.
3. Out of total 57 major projects, approximately 50% projects have reportedly submitted inconsistent data & hence, it is not considered for analysis.

Data considered as "consistent" by MWRDC reveals following:

i) There is significant season-wise variation in the efficiency of the same canal. In case of some canals, efficiency in

Efficiency	Profile
Less than 10	Bor, Upper Penganga
11 to 20	Wan, NM Weir
21 to 30	Kadwa, kanher, Kal-Amba
31 to 40	Bhima- Ujjani, Jaykwadi-II, Bhandardara, NMweir, Ghod, Chaskaman, Dhom, Kanher
41 to 50	Bhima-Ujjani, Jayakwadi-I, Bhandardara, Gangapur, NM weir, Ghod, Chaskaman, Khadakwasla, Neera, Dhom, Kanher, Surya

hot weather is more than that in rabi season

ii) Conveyance Efficiency of Main Canal has been reported [in 27 projects] as low as given below:

If the reported low efficiencies are true, then the matter is really serious. If Conveyance Efficiencies of Main Canal itself are so low, what will be the Overall Project Efficiencies? If one believes WA report then are these projects need to be simply abandoned? Or they need to be classified only as "water recharge projects"? Something is seriously wrong in WA Report because many of these projects are contributing significantly in irrigated agriculture & state's economy. Is it correct to officially report unbelievable efficiencies in case of such projects? MWRDC & in fact, now WALMI should have given more serious thought to this conveyance efficiency part particularly when WRD has now entrusted the responsibility of determining Conveyance Efficiencies of 12 projects to WALMI.

Determining efficiency is a tricky & hence, challenging issue. Comprehensive & indepth analysis in mature manner is urgently called for. Over simplistic approach in case of a very complex situation leads to absurd results.

In case of Bhandardara Project, the explanation for low efficiencies given below needs to be checked: " this is because of the water is let out through canals from ozar pick up weir, 85 km D/s of Bhandardara dam" [page-38]. How this fact affects the conveyance efficiency of main canals from pick up weir?

GUJARAT GOVT'S POOR TRACK RECORD ON WATER FRONT

In many ways, the 2012 assembly elections in Gujarat could be challenging for chief minister Narendra Modi. 2012 monsoon has been the worst monsoon for the state in 11 years that Modi has been at the helm. Till August 22, 2012, the rainfall deficit had been 82% in Saurashtra and Kutch. This means that the kharif has been destroyed in most of Kutch, Saurashtra and north Gujarat. By the end of monsoon, the deficit declined to around 34%, which was still remain substantial, signalling that even the rabi crop will face a serious water shortage. Had the Gujarat govt done prudent work in water sector, this should not have been the situation after so many bountiful years.

Politically, the Kutch-Saurashtra region is significant for Modi; it accounts for 58 of the 182 seats (add 28 in the 4 North Gujarat regions which are also mostly drought prone) and the BJP commands an overwhelming influence here. Any drastic change in the numbers could mar the BJP's fortunes in the polls. The Saurashtra area is also the backyard of Modi's arch rival and former CM Keshubhai Patel, who has come out to contest Modi for the first time in elections. It's unlikely that Modi's recent announcement of filling Saurashtra dams with 1 million acre feet of Narmada waters cut any ice here, since his earlier such repeated promises have not been fulfilled. On October 3, 2012, Congress president Sonia Gandhi, while speaking in Rajkot, noted that the Gujarat government had failed to bring Narmada water, to parched Saurashtra where many farmers have committed suicide this year. However, the Congress too have failed to raise the issues of Gujarat farmers with any effectiveness over the last 17 years or earlier.

Modi's track record on water politics has been pretty questionable: he has consistently favoured the prosperous and powerful central Gujarat areas with the exclusion of

the eastern tribal belt, the drought-prone Kutch, Saurashtra and north Gujarat.

Since he took over as CM in 2001, Modi has had about 11 years to complete the Sardar Sarovar Project (SSP) canals, particularly in Kutch, Saurashtra and north Gujarat, as these drought-prone regions were the chief justification for the project. These areas should have got the priority in the Narmada Project, which has been the chief plank of Modi's water strategy in Gujarat. Eleven years is long time for this task. But even today work on the Kutch and Saurashtra's main branches of the Narmada canals remains incomplete; leave aside the rest of the network. And Modi cannot blame Narmada Bachao Andolan for this as there was no NBA present to stop work on the canals.

In fact there are no areas in Kutch and Saurashtra that are getting water for irrigation from the Narmada project. Out of the 18.45 lakh ha of cultivable command area of the SSP, the command area development up to 'sub-minor' level has been completed only in 3.69 lakh ha, which is about 20% of the total command area. Irrigation water is reaching to even lesser extent, just 2.5 lakh ha, which is about 13% of the command area. Most of this 13% area is in central Gujarat, which is already water-rich. Modi has failed to provide irrigation to areas for which the project was meant, particularly when the area was facing an unprecedented drought earlier this year.

The situation, in fact, is much worse. Some farmers close to the incomplete main branch canals in Saurashtra tried to take water for low-water consuming groundnut crop this monsoon. But police cases were filed against them and many were arrested. At the same time, water from the Narmada main canal was released in the Sabarmati

River for the luxury of Ahmedabad. And there was no allocation in the project for such uses.

Even tribal villages close to the dam and canals are not getting water from the SSP dam. Forty years after the completion of the Ukai dam on Tapi River in south Gujarat, the right bank canal which could have benefited the tribal areas has not been built showing clear anti tribal bias of the government. The tribals had to go to the high court, which ordered on August 16, 2012 that the canals must be completed within seven years.

To compound the miseries of the tribal areas, the Modi government signed an MoU for Par-Tapi-Narmada river-linking project that would submerge tribal lands and forests in south Gujarat. There are 26 schedule tribe constituencies in Gujarat.

The reports of the Comptroller and Auditor General have repeatedly shown the serious irregularities indulged by the Gujarat government over the decade and a half, including in Modi's pet schemes like the Sujalam Sufalam and Sardar Sarovar, but Modi has failed to take any effective measures against those responsible. He has also failed to constitute a Lok Pal as required under the law.

In any other state, the combined impacts of this continuous neglect of large parts, along with court orders on the Gujarat riots and encounter murders — including against Modi's favourite ministers — and the anti-incumbency factor that the BJP rule of 17 years is facing, would have meant defeat for the incumbent. Modi has so far defied this logic. But this time he could face some tough challenges.

HIMANSHU THAKKAR

(an edited version of this appeared in The Hindustan Times, Oct 4, 2012)

OPEN LETTER TO NATIONAL WATER RESOURCES COUNCIL:

SUGGESTIONS FOR NATIONAL WATER POLICY 2012

This open letter was sent to the members of National Water Resources Council and issued to press on Oct 29, 2012 on the eve of the NWRC meeting scheduled for Oct 30, 2012. However, the due to the Union cabinet reshuffle on Oct 28, 2012 and new water resources minister taking over, the NWRC meeting has been postponed. The new date is yet to be announced.

The letter has so far been endorsed by EAS Sarma, former secretary, Govt of India (Andhra Pradesh), Ramaswamy Iyer, former Secretary, Govt of India (Delhi), Kalyan Rudra, Chairman, W Bengal Wasteland Development Corp, Dr Vandana Shiva, Research Foundation for Science Technology & Ecology (Delhi), Issac, Kshithij, Prabhakar, People's Campaign for Right to Water- Karnataka, Ranjan Panda, Water Initiative-Odisha, Vimal Bhai, Matu Jansangathan-Uttarakhand, Dr Latha Anantha, River Research Centre-Kerala, Sitaram Shelar, Pani Haq Samiti, Mumbai, Raju Bhise, Youth for Unity and Voluntary Action-Mumbai, Suhas Paranjpe, Society for Promoting Participative Ecosystem Management (SOPPECOM)-Mumbai, K J Joy, SOPPECOM & Forum for Policy Dialogue on Water Conflicts in India-Pune, Shripad Dharmadhikary, Manthan Adhyayan Kendra-Pune, Bharat Jhunjunwala, former professor, IIM Bangalore, (now in Uttarakhand), Soumitra Ghosh, NESPON-W Bengal, Gopal Krishna, Toxics Watch Alliance (New Delhi), Sudhirendar Sharma, Ecology Foundation (Delhi), Janak Daftari, Jal Biradari (Mumbai) Ravindranath, River Basin Friends (Assam), Nitya Jacob, Centre for Science and Environment (New Delhi), besides SANDRP.

To:

1. Prime Minister and ex officio chairman of NWRC
2. Chief Ministers, concerned Union Ministers and Planning Commission, all members of NWRC

Respected Sirs and Madams:

We understand that the National Water Resources Council is to meet on Oct 30, 2012 to consider the latest draft of the National Water Policy, and finalise the same. Some of us have been writing to the drafting committee and the Ministry about both process of formulation and content of the National Water Policy 2012 and in this context would like to reiterate the following points for your consideration when you meet to finalise the National Water Policy 2012.

PROCESS OF FORMULATION OF NWP

The National Water Policy concerns and affects every person and every ecosystem of the country. Hence the process of formulation of the NWP should involve every gram sabha in villages, every ward in cities and all concerned civil society groups. A credible process would thus involve availability of

the draft policy and also a credible report giving details of experience with the earlier (current NWP of 2002) NWP, in language and manner that people can understand. These basic requirements have not been satisfied and we would urge the NWRC to recommend such a process.

Suggestions for some key aspects of NWP 2012

• RIGHT TO WATER

The first draft of the NWP 2012 made public in January 2012 had said in its clause 1.3(v): "Access to safe and clean drinking water and sanitation should be regarded as a right to life essential to the full enjoyment of life and all other human rights." However, in the subsequent drafts, this sentence has been deleted. We urge the NWRC to add this draft in the NWP 2012 with an emphasis that right to water should be considered fundamental human right. In this context we would like to add that the Indian government is a signatory to the UN General Assembly resolution number 64/292 of 28th July 2010 "Human right to water and sanitation", approved by 120 countries. This is now legally binding in international law; UN Human Rights Council decision of September 28, 2011 also is relevant in this

context, as also the SC pronouncements reading Right to water in the constitution provisions including article 21.

• NO CASE FOR PRIVATISATION

In this context we would like to suggest that the draft NWP 2012 suggesting privatisation of water services should be deleted as it is in contradiction with the Right to Water as mentioned above. The global trend is also for re-municipalisation, reversing the privatisation of water that was implemented in few places, including in France (e.g. Paris), US (e.g. Atlanta), Italy, Uruguay, Netherlands, among others.

• SHUN FAILED BIG IRRIGATION PROJECTS

Data from Union government and several state governments show that over the last two decades, there has been no addition to the net area irrigated by major and medium irrigation projects. The CAG reports, as also the Planning Commission has also endorsed this. The recent exposure of massive corruption in big irrigation projects Maharashtra is a sign of the same disease. The NWP needs to recognise this reality and ensure optimal

(contd on page 23...)

CAG PERFORMANCE AUDIT OF HYDROPOWER PROJECTS:**EXTREMELY WEAK, INADEQUATE NON-AUDIT?**

The above statement was issued on Sept 3, 2012 and also sent to CAG and others. It was endorsed by E.A S Sarma, Former Secretary to Govt. of India (now in Andhra Pradesh), Bharat Jhunjhunwala, former professor, IIM Bangalore (now in Uttarakhand), Ravindranath, Rural volunteers Centre (Assam), Ms Malika Viridi, E Theophilus, both from Himal Prakeriti (Uttarakhand), K. Ramnarayan, Save The Rivers Campaign (Uttarakhand), Samir Mehta, International Rivers (Mumbai), Shripad Dharmadhikary, Manthan Adhyayan Kendra (Maharashtra), Dr. Latha Anantha, River Research Centre (Kerala), Manoj Mishra, Yamuna Jeye Abhiyaan (Delhi), besides SANDRP.

The CAG issued a press release on Aug 31, 2012 for its "Performance Audit Report No. 10 of 2012-13" of hydropower projects for the 11th 5-year plan ending on March 31, 2012. This CAG audit is an extremely weak and inadequate work of the CAG. In fact it does not really audit the performance of hydropower projects at all. The audit fails to raise many of the fundamental issues related to the hydropower projects. It does not draw strong enough conclusions that are warranted based on its audit. Its recommendations are even weaker and do not address the issues raised in the conclusions. It seems like more of a business as usual, status quo effort that does not do justice to the formidable reputation that the CAG has attracted through some of its exemplary work over the years and recent past.

Firstly, the audit is not much of a performance audit of hydropower projects or hydropower companies. The basic purpose of hydropower projects is generation of electricity at stipulated annual, seasonal, daily and peaking hours. However, the CAG performance audit has not gone into this question at all at any stage. If it had gone into this, it would have found that 89% of India's operating hydropower projects generate at below the sanctioned rates and half of them generate at below the 50% of design rate. It would have also realised that over the last two decades, generation of electricity per MW installed capacity has reduced by a huge 20%. The CAG would have

also found out that no one is assessing how much of the power generation from hydro projects is during peak hours when generation of peaking power is supposed to be the USP (Unique Selling Proposition) of these projects. Both storage-based and so called run of the river hydro projects involve huge social and environmental costs, apart from deforestation and displacement of people. They are justified on the ground that they meet the peak time demand for electricity. A performance audit that does not address these aspects is not only incomplete but also misleading.

One of the fundamental issues CAG has refrained from looking at is the social, economic, environmental, cultural, religious and other services a free flowing river provides to a large cross section of the society and how these services are destroyed when a hydropower project is built. Rivers are functioning service providers, unlike the case of bandwidth (2G licenses) and coal in the mines, issues on which CAG has rightly shown great concern recently. It is inexplicable as to why the CAG has refrained from considering this issue while assessing the efficacy of performance of hydropower projects.

Thirdly, it is welcome that CAG has noted that there has been lack of "due diligence" and proper "survey and investigation" before taking up of projects. However, the CAG has not held agencies like Central Electricity Authority (CEA)

responsible for giving concurrence to the projects under Electricity Act without ensuring that the projects have done full and proper appraisal. For example, CAG has found in its audit that geological surprises have been one of the reasons for delays, and that the companies have not been doing necessary testing. But these are the issues that CEA is supposed to look into in collaboration with Central Water Commission and Geological Survey of India. It is clear from the audit that CEA has been routinely giving concurrences to the projects without ensuring that full appraisal and due diligence has been done and without any transparency or independent members on its panel. CAG should have held CEA, CWC and GSI responsible for such flawed concurrences and should have raised fundamental issues about the process followed by CEA before giving concurrences. Similarly CAG should have raised questions about the fundamentally flawed process of environment impact appraisal followed by the Union Ministry of Environment and Forests (MEF) and MEF's the Expert Appraisal Committee (EAC) on River valley projects, but has refrained from raising them. Why CAG has refrained from reaching such conclusions logically implied by its audit is surprising.

Fourthly, CAG should also audit the process of allocation of hydropower projects to private developers. CAG has rightly raised the issue of competitive bidding in case of bandwidth (2G) and coal

recently while allocating these "natural" resources to private developers, but for some unknown reason, has refrained from scrutinising the process of allocation of rivers to private developers for developing hydropower projects, which the private developers are using for their profiteering. The rivers are society's resources and are the biggest natural resource, and it is high time all concerned including CAG look into these issues. Similarly, why is the CAG not auditing the accounts of private hydropower developers, when these developers are using these national natural public resource?

Fifthly, the CAG audit in question has very rightly raised the issue of failure of monitoring mechanisms and how conflict of interests prevail in the functioning of hydropower projects, with even an former power secretary (Mr P Abraham) simultaneously being on govt committee probing a hydropower project and also on the board of the company involved in the specific contract being probed. These issues prevail because there is absolute lack of transparency and lack of presence of independent credible members monitoring the functioning of these projects and companies. Unfortunately CAG has not found it necessary to make such recommendations even though they are clearly warranted from its own audit.

Lastly, CAG's recommendations are peripheral and pedestrian. They have not addressed the systemic and institutional issues that are at the root of the problems covered in the audit, however weak it may be. These issues revolve around the professional capabilities, transparent and independent functioning of CEA, the role of MOEF and its EAC, the need to ensure that the composition of EAC and other monitoring and other committees are such that its members have no conflict of interest in appraising projects and how a few influential power developers have been able to corner most of the projects as a result of the non-transparent award procedures adopted. What are proposals to change the situation in any fundamental way? There are none.

We are therefore forced to reach the unfortunate conclusion that this CAG audit is highly inadequate, misleading and devoid of any attention to the basic issues. We would urge CAG to urgently look into the issues raised and redo the audit keeping these issues in mind.

NWRC LETTER (contd from page 21...)

utilisation of existing irrigation infrastructure, make sustenance of groundwater lifeline central focus of water resources development and stop funding new and comprehensively review ongoing major and medium irrigation projects. Also the costs and impacts of decommissioning of projects should be included in the project proposal and operating projects should be reviewed every 25 years keeping in mind the option of decommissioning.

• **GOVERNANCE**

NWP needs to note the need for clearly defined decentralised, bottom up participatory mechanism for planning, decision making and allocation of water for different uses, none exist today. In absence of such legally enforceable mechanisms, there is serious threat to the water, food and livelihood security to millions of people all over India as water is being diverted for urban (beyond justifiable needs) and industrial use when there is none for basic food production and livelihoods of farmers.

LAW TO PROTECT RIVERS NWP needs to stipulate the need to protect rivers through legislation; Today Rivers in India have no protection and rivers with freshwater flow all round the year has become endangered species. This is also relevant in the context of recently concluded COP 11 on Convention on Bio Diversity in Hyderabad during 8-9 Oct 2012. It is well known that freshwater sources, including rivers are some of the largest repositories of biodiversity and they need to be protected also from the perspectives of livelihoods of millions of people and climate change. Unfortunately, today

impacts of dams on riverine biodiversity, livelihoods are not even assessed, leave aside mitigated or compensation for those affected. Revision of NWP is an occasion to emphasise and make amends in this situation.

• **RECOGNISE THE WATER SAVING POTENTIAL OF SRI**

The NWP needs to explicitly recognise the huge water saving potential of System of Rice Intensification, and related methods like System of Wheat Intensification, Sustainable Sugarcane initiative, among others. This can go a long way also in reducing the load on groundwater draft.

• **STATE WATER REGULATORY AUTHORITIES**

The draft NWP 2012 says (sec 7.2), "A Water Regulatory Authority (WRA) should be established in each State". This is uncalled for since the experience of only functioning Water Regulatory Authority is far from encouraging. Maharashtra experience needs to be evaluated and until there is encouraging experience over a prolonged period, such a recommendation is uncalled for.

• **DATA MANAGEMENT**

NWP should recognise the need for making all water data pro actively in public domain, setting up the process for generating and updating eco - hydrological data linkages in all rivers with the long term objective of arriving at and allocating e flows based on such a data, encouraging ways to increase soil capacity to hold moisture.

We welcome some of the positive changes brought about in the latest draft of NWP 2012 compared to the earlier ones and also publication of the agenda of the NWRC on the website of the Ministry of Water Resources. However, we believe NWRC needs to go further and make recommendations along the lines suggested above. In this context we would also like to draw your attention to the comprehensive alternative draft of National Water Policy brought out by Shri Ramasway Iyer, former secretary, Union Water Resources Ministry, the draft was published in Economic & Political Weekly issue of June 25, 2011.

CLIMATE CHANGE AND WATER SECTOR

National Water Mission to be Dropped?

In a major embarrassment to the Ministry of Water Resources, Planning Commission of India has recommended dropping National Water Mission from the National Action Plan on Climate Change (NAPCC) and merging it into the proposed national programme for sustainable management of water resources, to be launched in the Twelfth Plan. Ministry officials claim that the decision to change the NAPCC lies solely with the Prime Minister's Council on Climate Change and the Planning Commission has not consulted this council.

The Planning Commission has suggested reworking the entire Rs 23,000 crore NAPCC. It has reduced the number of missions and refocused them in line with "priorities". Some of the reasons behind this move are low carbon markets and dim prospects of international long-term finance.

Nearly five years after launching of NAPCC in 2008, the progress on many of these missions has been slow and nearly non-existent. National Water Mission relied on large dams and storages despite world experience and research indicating that large dams in fact aggravate the risks of climate change. The Planning Commission has conceded that for a mission under the NAPCC to succeed, "it must have separable objectives, dedicated implementation machinery and adequate funding". None of the Missions can claim this and this has led the Planning Commission to rework the National Action Plan with "updated priorities".

The strategic knowledge mission has also been dropped. The Plan panel is of the view that this mission is likely to "remain peripheral and is not likely to attract adequate funding through this window".

For the Sustainable Habitat Mission, the Plan document suggests pruning as the overarching objec-

tives "are out of proportion to the limited funding that is available".

The Planning Commission has suggested a separate mission for wind energy. It has suggested seven policy thrust areas which will be monitored by the Prime Minister's Council, these include advanced coal technologies, technology improvements in steel and cement industry, solid waste management in towns and cities, treatment of sewage being released into water bodies, dedicated freight corridors along major routes, improving urban and non-motorised transport, and climate related research through scientific departments. (The Economic Times 150912).

NEPAL: Local Adaptation to climate change

Nepal will shortly start implementing local adaptation plans for climate vulnerable communities in its impoverished far-and mid-western region under the National Adaptation Programme of Action (NAPA). NAPAs, submitted to the UN Framework Convention on Climate Change, provide a process for Least Developed Countries to identify priority activities that respond to their urgent and immediate needs to adapt to climate change.

Nepal was the first country in the world to officially endorse a Local Adaptation Plan of Action (LAPA) as part of its 2010 NAPA framework. The bottom-up approach will be Nepal's first attempt at translating central-level climate adaptation plans into tangible projects on the ground, including input from vulnerable communities.

For each LAPA, communities prioritized projects would improve their adaptive capacity. The plans reflect the precarious environment in the region, many focusing on improved drinking and irrigation water supply, landslide protection, and new agricultural techniques. LAPA implementation will start by the end of 2012. (IRIN 130912) There are many lessons India can learn from this. India's National Action Plan on Climate change has no scope for local participation & is proving to be ineffective.

Vagaries of rain hit Paddy in Vidarbha

Late arrival of monsoon followed by excessive, intense rain; a hallmark of climate change in Peninsular India has hit paddy cultivation in Vidarbha. Wardha district is hardest hit with insufficient rainfall in July followed by moderate rainfall in August and excess rains and floods in September. Huge tracts of farmland were submerged due to floods in Arvi and Ashti talukas. Earlier, crops were hit due to insufficient rainfall. Parts of Chandrapur, Nagpur and Gadchiroli districts have also suffered crop damage. (The Times of India 200912)

DAMS AND BIODIVERSITY

Impacts hydro on Himalayan Terrestrial Biological Diversity

"Indian Himalayan basins are earmarked for widespread dam building, but aggregate effects of these dams on terrestrial ecosystems are unknown. We mapped distribution of 292 dams (under construction and proposed) and projected effects of these dams on terrestrial ecosystems under different scenarios of land cover loss. We analyzed land-cover data of the Himalayan valleys, where dams are located. We estimated dam density on fifth- through seventh-order rivers and compared these estimates with current global figures. We used a species-area relation model (SAR) to predict short- and long-term species extinctions driven by deforestation. We used scatter plots and correlation studies to analyze distribution patterns of species and dams and to reveal potential overlap between species-rich areas and dam sites. We investigated effects of disturbance on community structure of undisturbed forests. Nearly 90% of Indian Himalayan valleys would be affected by dam building and 27% of these dams would affect dense forests. Our model projected that 54,117 ha of forests would be submerged and 114,361 ha would be damaged by dam-related activities. A dam density of 0.3247/1000 km² would be nearly 62 times greater than current average global figures; the average of 1 dam for every 32 km of river channel

would be 1.5 times higher than figures reported for U.S. rivers. Our results show that most dams would be located in species-rich areas of the Himalaya. The SAR model projected that by 2025, deforestation due to dam building would likely result in extinction of 22 angiosperm and 7 vertebrate taxa. Disturbance due to dam building would likely reduce tree species richness by 35%, tree density by 42%, and tree basal cover by 30% in dense forests. These results, combined with relatively weak national environmental impact assessment and implementation, point toward significant loss of species if all proposed dams in the Indian Himalaya are constructed."

Its noteworthy that this paper is based on estimates of number of dams in Himalayan states that is much lower, the actual numbers are much higher. (Abstract of a paper by Maharaj K Pandit & R Edward Grumbine in Conservation Biology)

DAMS AROUND MUMBAI

Kalu Dam: Mah Govt applies to MoEF again Even as Maharashtra reels under the irrigation and dam scam which was initiated by dams like Kalu and Kondhane, the state government has shockingly applied to the Ministry of Environment and Forests (MoEF) once again, seeking the go-ahead for the construction of Kalu Dam. The Ministry had earlier rejected the proposal sent by the state, which had already begun construction of the dam without the necessary sanctions from MoEF. (DNA 101012)

On the 27th July, the MoEF, based on a report submitted by its Forest Advisory Committee, cancelled giving clearance to Kalu Dam. The project area falls under the ecologically sensitive zone of the Western Ghats and involves displacement of large number of tribals. The state has not worked on a rehabilitation plan, environment or social impact assessment, a technical report on wildlife status and management, nor does it have gram sabha resolutions from forest dwellers who should have been granted rights under the Forest Rights Act

(2006). Settlement of individual and community forest rights is also not done till date. It is shocking to see that under these circumstances also, when the state has done next to nothing to justify the dam or responded in any way to the unfulfilled requirements, it has actually reapplied for a clearance.

SANDRP has been working closely about the issue with Shramik Mukti Sangathan, which had filed the initial PIL against Kalu and has made number submissions to the Forest Advisory Committee about the illegal nature of these dams and their huge impacts on the society and ecology of the region. (For details http://sandrp.in/dams/PR_FAC_Rejects_Forest_Clearance_TO_Kalu_Dam_GOM_has_a_lot_to_answer_for.pdf/view?searchterm=Kalu)

LOCAL WATER BODIES

Shimla Water Catchment Sanctuary is a 1020.32 ha protected area 8 km from the capital of Himachal Pradesh which has been facing several developmental pressures. This old water catchment area of Shimla was turned into a wildlife sanctuary by the name of Shimla Water Catchment Sanctuary in 1999. The sanctuary has the highest reported density of koklass pheasants in India under natural conditions and is bifurcated by a host of seasonal streams which form the catchment of the Aswini Khad. The khad drains into Giri River, a tributary of river Yamuna. It also connects the Chail Wildlife Sanctuary through a forest corridor. The sanctuary protects deodars and other trees.

The sanctuary has a 16 feet deep reservoir built by the British in 1901 to tap water from falls all around the forest, with a capacity of 100 m litres. Today, the water is supplied to the residents of the nearby Dhalli area. Water from over 19 falls in the sanctuary reaches the reservoir through pipes.

The area was first notified as a sanctuary in 1958, re-notified in 1982, and finally notified as a wildlife sanctuary in 1999. The area remained under the control of Mu-

nicipal Corporation Shimla till mid-2006 and under the control of Shimla Forest Division (Urban) till March 2009. Due to reorganisation of divisions, the area of the sanctuary is transferred to the Wildlife Division Shimla from April 2009. (The Hindu 230912)

Such protected areas, conserving upper catchments of reservoirs are extremely important to check sedimentation, erosion and improve the water yield of the catchment. The Catskill Mountain ranges in New York is a striking example of upper catchment protection, which has proved to be more cost effective than conventional water treatment plants. Himachal has been facing harsh impacts of climate change and destructive projects. In this scenario, the importance of such sanctuaries is evident.

DAMS AND ECOLOGY

HEPs in Bhutan threaten endangered species The endangered white-bellied heron, the great Indian hornbill and the endangered golden mahseer gaming fish found along the Punatsangchu river could come under great risk, once the Punatsangchu hydropower projects start operations. As of now, the two projects, with an installed capacity of around 2,150 MW are under construction, but once the river is channelled in from dams to the underground powerhouses through the 8.9 km long headrace tunnel of phase I and 8.6 km of phase II, the original river course and surrounding habitat will undergo a massive change.

Environmentalists and conservationists are concerned about endangered species like the golden mahseer fish, which is endangered and highly sensitive to habitat change. "When we try to use a net, they don't show up for the next week," says environmentalist Sangay Dorji, who led a sample study of the fish to understand its behaviour and habitat. "The fish may stop coming after the construction of these dams." The golden Mahseer, found in Dichu, and at the confluence of the Punatsangchu and Kamechu

streams, migrate to Brahmaputra, India, by the first week of October, and return to Bhutan in early summer. Around the world, this species has suffered severe decline, because of habitat loss, also in Uttarakhand & Himachal Pradesh in India.

Environmentalists, this year, curved the Kamechu stream at the confluence to slow down the river current, so that the Mahseer can easily lay eggs, and thereby grow in numbers. All these local conservation efforts will be wasted if the mega dams come up.

The critically threatened white-bellied heron, seen along Kamechu and Punatsangchu rivers in Pinsa, will also be greatly affected when the Punatsangchu is dewatered, and only a small quantity of water remains in its original course. When the water quantity goes down, so will the fish, on which the bird survives. "In dewatered stage, when the river undergoes a complete change, resulting in loss of aquatic ecology, the white-bellied heron will no longer be able to feed in its original place," Sangay Dorji said. It is believed that, out of 140 white-bellied herons across the globe, 26 are in Bhutan.

The great hornbill, another near threatened bird that nests in the evergreen forest and tall trees will lose its habitat, when roads, electricity, and housing colonies come up on both sides of the Punatsangchu. The common otter found in Kamechu will also lose its source of food and will be negatively affected by habitat loss. (Kuensel Online 141012)

India has funded most of hydro projects in Bhutan including Tala, Chukha, Kuricchu, and now the Punatsangchu and Mangde chu HEP. Indian companies have worked on most EIAs and Indian companies are building these projects. India is also set to get power from these projects. Many local organisations have protested about the huge ecological impacts

of these dams. (<http://dorji.net/?p=196>)

RIVERINE FISH AND FISHERIES

New fish species found in Urmodi, Krishna rivers Scientists and a naturalist recently scientifically found a new fish species in Urmodi and Krishna rivers in Satara district and named it '*Balitora laticauda*'. This rare hill stream fish species is endemic (restricted to a specific geographic location) to northern western ghat region. Sunil Bhoite, a naturalist from Satara district, Shrikant Jadhav, scientist from the Zoological Survey of India and Neelesh Dahanukar, a fellow from the Indian Institute of Science Education and Research have discovered the spe-



Muck dumped in the Punatsangchu River. Photo courtesy www.indianembassythimphu.bt

cies which inhabits rapidly flowing water. According to Dr. Dahanukar, around nine fish were found here and there should be a small population in this region. The local Marathi name for the species is *Palmasa* (*Pal* means lizard, *masa* means fish) given because of its general appearance resembling a lizard and the habit of clinging to the rocks in streams and river. According to the researchers, the Northern Western Ghats is relatively unstudied and may have many more undiscovered, endemic species. (The Times of India 011012). Greatest threats to the habitat loss is due to Dams and hydropower projects.

BHUTAN

Dagachu HEP faces heavy time & cost overrun Upcoming 126-mega-watt Dagachu hydropower project in Bhutan, with India as a major beneficiary, is suffering from heavy cost and time overrun. According to Dasho Rinzin, MD of Bhutan's Druk Green Power Corp (DGPC) that holds 51% stake of the project, its new completion date has been assessed to be in March 2014 in place of Aug 2013. Against the initial estimation of Rs 800 crore, as per the latest estimation, the final project cost is going to be equivalent to Rs 1200 crore.

DGPC is considering Asia Development Bank as the source of additional financial support. ADB is already involved in the project as financial and technical supporter. Dagachu project has been registered as the first cross border project activity under Clean Development Mechanism of the United Nations Framework Convention on Climate Change. This is the first major private public partnership project in Bhutan with multiple Bhutanese and external stakeholders. The company formed to look after the project consists of Bhutan's DGPC and India's Tata Power Company. (The Economic Times 31x12)

NEPAL

Churning in Power Sector These are interesting times in Nepal's Power sector. First came the memorandum of understanding with the China Three Gorges International Corporation (CTGIC) in Feb 2012 to build the West Seti HEP. However, the govt, one fine day in Sept 2012, decided to terminate the contract with a Chinese company that had been dragging its feet on the tunnelling component of the Melamchi water supply project. A few days later, the Investment Board formed by the govt decided to give green signal to the Indian companies GMR and Sutluj Jal Vidyut Nigam (SJVL) to go ahead with the preparatory works for Arun III and Upper Karnali projects. Interestingly

all of those projects-West Seti, Arun III and Upper Karnali-are now being handled by the Investment Board the government formed to supersede the energy ministry.

The Chinese contractor for Melamchi tunnel construction was in touch with the Prime Minister's office and had also tried to pull China's diplomatic strings in Kathmandu. But the Asian Development Bank endorsed the sacking of the Chinese contractor. The Chinese contractor performance in digging the Melamchi tunnel had indeed been pathetically poor. The Chinese company that built the 20,000 MW Three Gorges Dam does not have a clean record in China itself. The Chinese National Audit Office had uncovered 31 financial issues related to accounting, financial management, investment, bidding and corporate management, according to the Chinese state-run Xinhua news agency. So, worth watching for now will be how the Investment Board deals with the Indian companies GMR and SJVN.

With no manpower and technical expertise of its own-and with the energy ministry totally bypassed-will it be able to strike the right deal? A litmus test, for instance, can be whether Nepal can make sure that both companies are given in agreement papers specific project sites and not "vague description of areas that leaves room for manipulation in the future."

The current language in the Memorandum of Understanding-particularly with GMR-is quite ambiguous as to where the Upper Karnali project site would be and how far it could be expanded. The MoU the govt signed with GMR states, "Govt of Nepal acknowledges that due consideration may be accorded to GMR-ITD Consortium for the allotment of upstream/downstream project, if any... GON shall ensure that the development, implementation and operation of upstream/ downstream projects by other developers shall not be

detrimental in any way to the (Upper Karnali) project."

Also worth watching will be whether a planned proposal by the Nepali side to maximise power supply to Nepal during dry season can make its way in the final agreement. The MoU signed with GMR requires it to provide 12 percent of monthly generated power from the Upper Karnali project free to Nepal. For SJVN the figure is 22 percent. Both Arun III and Upper Karnali have been widely criticised because most of their power will be exported to India while Nepal is left with crippling power cuts. The moves to award them to the Indian companies have also been challenged in the court. If the Investment Board caters to the need of power-centres only, power-starved Nepali people will be caught between the devil and the deep blue sea. (hydroworld.com 05x12)

IRRIGATION SCAM

(contd from page 16....)

ongoing projects is completed and made available in public domain, and necessary action taken.

5. Allow no further finances and cost escalations to upcoming projects in Maharashtra until the above mentioned scrutiny is complete, and necessary action, including more participatory, transparent and accountable system of governance of this sector is in place.

6. Amend the EIA notification to ensure that (i) all large dams, irrespective of purpose, are included for Environment Clearance, EIA and Public hearings. (ii) If a project requires forest land, than an environment clearance should be mandatory.

7. All major irrigation projects need clearances from Union Ministry of Environment and Forests, Central Water Commission, Planning Commission, among others. All these agencies are supposed to ensure proper environment impact assessment and gov-

ernance, dam safety, proper cost and benefit appraisal, among other aspects. That all these aspects are under question in this scam underlines the need to include all these agencies under the scrutiny since all these agencies have clearly failed to perform their role both before and after the clearances. Union Ministry of Water Resources should also be included in the scrutiny since all finances for National Project (Gosikhurd project in Maharashtra got over 92% of the funds released under national Projects) and Accelerated Irrigation Benefits Programme are released only after approval from the Ministry or by committees where the Ministry officials are in decisive positions.

In the interest of safety of livelihood, food and water security of millions, safety of downstream population, irrigation benefits to farmers, drinking water supply to villages and urban areas and clean governance, the above mentioned points are minimum requirements.

Only a credible independent full scale scrutiny on the lines suggested above will give us some chance of knowing the maximum truth, if not the full truth. Unfortunately, as yet no such independent scrutiny is in place. Maharashtra Chief Minister has instituted a departmental enquiry against a large number of serving engineers of VIDC. But such enquiries have poor track record. Also the final say in the enquiry will be with the same department which are responsible for the scam. Under the circumstances, such an enquiry has almost no credibility.

It was interesting to read in the Economist column that recently said, "Folks in Maharashtra are looking for a messiah, and Mr Chavan (the current chief Minister) is the only sensible candidate around." We will soon know if Shri Prithviraj Chavan really wants to clean this sector and if he will be allowed to do that. And if he qualifies to be a messiah.

SANDRP

(a shorter version of this appeared in Nov 2012 issue of Civil Society)

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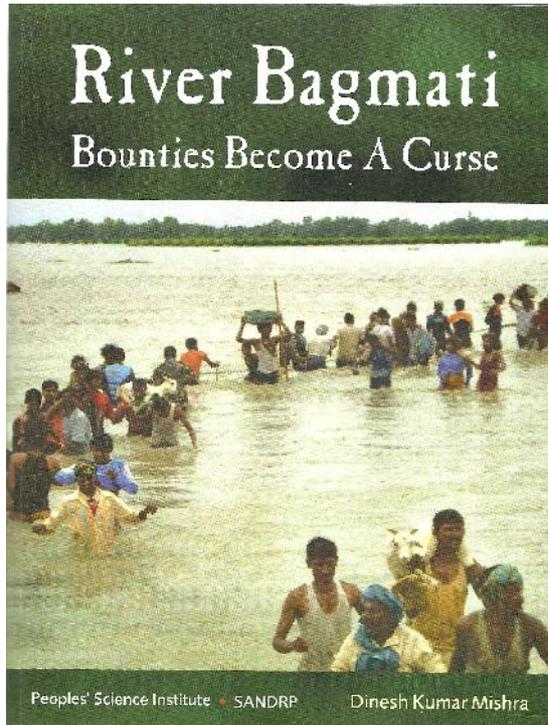
RIVER BAGMATI: BOUNTIES BECOME A CURSE

by Dr D K Mishra

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North Bihar is synonymous with floods. The season begins with the river Bagmati overflowing its banks and ends with either river Kosi or the Mahananda being in spate. Yet very little is known about the Bagmati, its basin, and its people.

Huge embankments were built along a significant portion of its length in the 1950s and later in the 1970s. Now construction is on to close the gap that was left in this chain of embankments. No one has ever cared to find out whether these structures served the desired purpose. People living along the rivers say their situation has changed for the worse because of these structures. It is a part of our culture to do our karma and not worry about their consequences.

Starting its journey from the Shivalik Range in Nepal, Bagmati enters India in Sitamarhi and flows down to Khagaria, where it joins Kosi. In the last 25 years, according to government figures, the embankments in North Bihar have been breached 371 times, with Bagmati alone accounting for 58. seem to have been learnt from them. We are not even sure about the authenticity of these figures as nobody really knows the entire truth in such matters. The only conclusion drawn by the

establishment from this is they can only tame the river by making the embankments bigger and stronger. The communities living along the banks recount that earlier the river used to flood their lands but after a short time it receded to its natural course and now the river waters flow through their windows and soon may cover their roofs too. Both the establishment and the people tell different tales and there does not seem to be any dialogue between them. This book is an attempt to lay the basis for such a discussion.

Mishra reviews events from ancient times to the present, and documents the post-Independence history of the basin by interviewing stakeholders including Chief Ministers, politicians, bureaucrats, engineers, landowners, workers, activists and flood victims.

The book not only discusses the limits of possible interventions in the river's regime, but also indicates alternatives.

For copies of the book, contact dkmishra108@gmail.com/ ht.sandrp@gmail.com/psiddoon@gmail.com. Price Rs 595/- + Rs. 60/- (for postage). Please send a check or demand draft to SANDRP, C/o 86-D, AD Block, Shalimar Bagh, Delhi - 110 088, Ph: 011-2748 4654/55.

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