PROCEEDINGS OF THE

INDIA RIVERS WEEK 2014

(24 - 27 November 2014)

New Delhi

INDIA RIVERS WEEK 2014: Proceedings

WWF India, INTACH, SANDRP, Toxics Link and PEACE Institute Charitable Trust

INTRODUCTION

A recent appraisal has found that there is no river in any of the top 50 cities in the country that is not sick or dying with river Yamuna in Delhi-Mathura-Agra and Ganga in Kanpur-Varanasi-Patna leading the list. Widespread devastations in Uttarakhand (June 2013) and J&K (Sept 2014) and Assam-Meghalaya in North East (September 2014) bring home the fact that disturbed rivers can become dangerous and highly devastating.

Dams, diversions, bumper-to-bumper hydro projects, diverted natural flows, encroached flood plains, embanked river channels, degraded catchments, destruction of local water systems and pollution of various kinds are causing this. Climate change uncertainties are expected to further compromise the integrity of our rivers.

It is in this backdrop that the first ever India Rivers Week – 2014 (IRW 2014), a conclave to enable learning and promote river restoration skills and actions from sharing and exchange of ideas, experiences and practices was held between November 24 th to 27th, 2014, at New Delhi. Over 125 River experts, planners, researchers, artists, enthusiasts and activists from different parts of the country congregated at first ever India Rivers Week.

The event was organized by a consortium of NGOs including WWF India, INTACH, SANDRP, Toxics Link and PEACE Institute Charitable Trust, with additional support from Arghyam (Bengaluru), International Rivers (Mumbai), and Peoples Science Institute (Dehradun).

Inaugural session

24 th November, 2014

Ramaswamy Iyer, former Secretary to the Government of India stressed in his keynote address that rivers are, ”more than just water, and an integral part of our social, historical and cultural fabric.” He presented a broad overview of the vast subject of rivers and its many dimensions. It began by asking “What is a river? Is it a water channel, a transporter of sediment; it is also the river-bed, the banks, the vegetation on sides, the floodplain, the catchment. The totality of these constitute a river. A river is a natural, living, organic whole, a hydrological and ecological system”.

Ramaswamy Iyer noted that “unfortunately, most people have a simplified, unidimensional perception of a river as channel carrying water. It is this perception that allows “the flows of rivers to be obstructed with dams and barrages” with the result that “the abstraction/diversion of their waters is regarded as the proper ‘use’ of their waters”. He stated that “the engineering, economic, commercial, managerial, and in general the instrumentalist view of rivers leaves little room for thinking of rivers as living things, as ecological systems in themselves and part of larger ecological systems, as having roles to play beyond serving human economic activity, and as having an existential and not merely an instrumental value.” Even the concept of minimum flow represents an instrumentalist view of rivers. “Instead of respecting the natural flow and

diverting the minimum unavoidably necessary, the approach is to abstract the maximum water from the river and grudgingly let flow a minimum", he said.

On inter-State river water disputes, Ramaswamy Iyer noted that the issue is entwined "with issues of control, power and political relations, social justice and equity and hence gets embedded in electoral politics and becomes intractable". This is more so in the context of large projects. On hydroelectric projects, Ramaswamy Iyer noted that "the projects particularly run-of-the-river ones, are not environmentally benign. These projects operating as peaking projects result in huge undesirable diurnal variations in downstream flows".

"We have to ask ourselves whether we are prepared to kill our rivers for economic development, whether economic development or human civilization itself will survive the death of rivers, and what kind of development it is that demands the death of rivers", Ramaswamy Iyer noted.

The River Conservation Authorities which are created remain "ineffective because the original causes of pollution and contamination remain unrecognized and unremedied, and also because these are top-down bureaucratic organizations not involving the participation of the people", he said.

Former Union Minister Jairam Ramesh, delivering the inaugural address at the first ever India Rivers Week emphasized "Ours is a paradoxical society. While we show a lot of respect for rivers socially, we deal with rivers with utmost unconcern and disrespect… India Rivers Week and India Rivers Forum is most welcome, will look forward to participate in it… If we want to save our rivers, the first step is to ensure that no untreated industrial effluent or sewage finds its way into our rivers." Standards and regulations do exist in the country but they are not enforced. Almost seventy five per cent of the pollution in Ganga is due to untreated sewage. It is relatively easy to control the discharge of industrial effluents but far more difficult to control the discharge of untreated sewage. In the last 20 years because of successive interventions the Biochemical Oxygen Demand (BOD) and Dissolved Oxygen (DO) levels has improved in large stretches of Ganga. But faecal coliform levels have deteriorated because of discharge of huge quantities of untreated sewage in both Ganga and Yamuna.

Speaking on development objectives and the growing energy needs of India, he clarified, "Hydro projects may be a painful choice, but we cannot close our doors to it. This is because we cannot use too much of coal; mining of coal is environmentally disastrous, burning of coal leads to more carbon dioxide emission leading to global warming. Nuclear plants take along period to install and there are serious hazards associated with them. Solar and wind energy should be developed but can it meet the energy needs of a population of 1.2 billion?

Presently we have developed about one-third of our hydel potential and twenty per cent of our electricity comes from hydel sources. We have considerable hydel potential left to be harnessed but much of this potential is in rivers that are subject to inter-State disputes or are in environmentally fragile areas like upper reaches of Himalayas; one-third of India's hydel potential is in the state of Arunachal Pradesh. This requires buildings of large dams, submergence of vast forest areas, biodiversity areas and transmitting that power over 2000 km. There is the problem of reservoir induced seismicity in addition. However, India cannot completely neglect the development of hydel resources. What we can do is ensure stricter environmental regulations & their enforcement, a cumulative assessment at 'basin' and not 'project' level and the minimum environmental flow in the river itself." He was critical of the current dispensation's move to dismantle all environmental regulations. The engineering approach of water resources development has ensured extraction of maximum water; the point

is in ensuring maximum uninterrupted flows in the river. In Uttarakhand, the MoEF found out that minimum flow should be 4-5 times what was being provided by project authorities. Jairam Ramesh also raised the issue of encroachment of floodplains in the name of development or faith. There is a need to work on River Regulation Zone on the lines of Coastal Regulation Zone.

Former Union Minister Jairam Ramesh speaking at the India Rivers Week-2014

The Union Water Resources Ministry has been pitching for inter-linking of rivers saying the move can yield "rich dividend". Jairam Ramesh, former Minister, MOEF however stated "We seem to be indulging in the romance of interlinking of rivers. We need to be more cautious in hurrying up the proposed interlinking of rivers project and understand their ecological and environmental consequences better", he said. He urged for more debates on water agreement treaties, the need to look at water in the regional context and better cooperation within States and also with our neighboring countries.

Ravi Singh, WWF in his welcome address noted that "this is the first conclave to enable learning and promote river restoration skills and actions from sharing and exchange of ideas, experiences and practices". He said that "there has been 76 per cent reduction in aquatic biodiversity over the years from 1976. That figure is higher than the loss of terrestrial or marine biodiversity, showing the crisis rivers are facing and we need to act fast to address this crisis". "There is a stress on river systems globally. Barring two-three rivers in peninsular India, most rivers have alarming levels of pollution load and toxic metals" added Ravi Singh in his opening remarks.

Manoj Misra, PEACE Institute introduced the participants to the objectives of the conclave as "mainstreaming the cause and campaign for river's restoration and conservation in the country by bringing together river experts, enthusiasts and decision makers at a common platform for engendering a cross learning of ideas, experiences and river restoration techniques." "Not only are our rivers misunderstood but mistreated and thoroughly abused", said Manoj Misra. "We need to move beyond the understanding of a river simply in terms of water." While water is essential to a river, river is not water. A river has life; it has spiritual sanctity and a certain romance with it. As a matter of fact there is nothing like river on earth. It is a truly unique system. Through this conference the endeavour is to first understand the rivers as natural

ecosystem. Then there are threats that have brought them to a crisis situation where their present and future is not secure", Misra said. What makes this event significant is that the practitioners gathered here, through their experience sharing session and discussions, "will generate, adopt and present a National River Charter at the end of the meeting", Misra stated.

Lack of true understanding and appreciation – amongst planners, decision makers, various government departments as well as the common man – of rivers as ecological systems that provide a number of ecological and economic services is a major reason for the sorry state of our rivers. No wonder, there exists no national policy or law that could provide our rivers security from death, degradation and unsustainable and unfair exploitation.

Ravi Agarwal, Toxics link, while thanking the Chief guest and others present at the inaugural function reiterated, "Rivers are diverse ecosystems, where water is a common defining system", and hoped this 'unique meeting' would debate thoroughly on this complex issue.

A compilation 'My River Journey', containing river journey accounts of 48 of the participants has been prepared, published and distributed at the IRW-2014, conclave on 24 Nov, 2014.

The Conference participants were divided into four groups namely *Cauvery, Brahmaputra, Narmada* and *Satluj* to facilitate the functioning of the break out groups planned on different day.

Session: What is a river?

24th November, 2014

Concurrent discussions were held by four groups to **define rivers** 'holistically'. The focus was on – (a) What definitions existed traditionally? (b) What functions, values and services need to be considered while defining rivers? (c) How do we connect aspects of art & culture, spiritual values, biodiversity, livelihoods etc in the definition? (e) Any other relevant factor/s?

Manshi Asher representing the Brahmaputra group said that river is a naturally occurring entity, a living system, and that they speak to us. Flow is the basis of this living system, whether it's the ecological, geological, socio-cultural, religious or cultural role, she said. The group was of the view that a river is a natural body of water but also sediment and nutrients flowing down a gradient.

Manoj Misra speaking on behalf of the Cauvery group defined river as a, "Hydrological, ecological, geomorphic living entity containing other life forms, landscape level ecosystemic identity in dynamic equilibrium between rainwater, snow, glaciers surface water, groundwater, sea, estuary, and providing a large number of social, cultural, ecological and economic services to people and ecosystems all along its basins." The group felt that a river has a defined form; it is called its channel where it flows normally. Either side is called the banks. Areas beyond the banks, which a river occupies in high flows, are called the flood plains. Can we think in terms of 'rights of the river' and then make it part of some legal system, discussed the group.

The conference also deliberated on what a river is not. Mallika Bhanot speaking on behalf of Narmada group said that a river is not static, an artificial drain, lifeless, embanked/ obstructed, without sand and sediments, carrier of wastewater or just a channel of water. "A living, wide, water course which has natural fresh, flow above and under the surface, nurturing life forms, ecosystems, culture, conserving biodiversity in it and is inclusive of small and big tributaries in

its catchment area", can be defined as a river, she said. Bhanot said that "rivers are a living entity and conservation and protection of rivers is inclusive of protection of the riverine ecosystem; a river cannot be protected without protecting its catchment and its riverine ecosystem.

Manu Bhatnagar, representing the deliberations of the Satluj group said, "River is a living commons that drains a catchment along a natural course with natural and dynamic flow providing ecological goods and services necessary for the development and sustenance of human civilizations under challenging social, economic, political and climatic drivers." The group was of the view that no two rivers or sections within the same river are like. Onkar Mittal, a group member raised the issue of politics of defining a river. Flow in a river is dynamic with well defined seasonal and diurnal variations, he said.

Dr BC Choudhury and Dr Tripta Wahi, chaired and co-chaired the plenary of this session.

Speaking on the issue Professor Brij Gopal noted that, "River regulation is the root of all problems. We need to regulate human behavior and activities".

Ramaswamy R Iyer defined the river as "A natural, organic, hydrological, ecological system that flows and performs many functions." The attempt was to pen an aspirational, visionary and implementable definition of rivers to underpin an India Rivers Charter", to be prepared at the end of these deliberations.

DAY TWO

Session: River – An ecosystem

25th November, 2014

In this session the participants were to arrive at a narrative on "River – an ecosystem". The focus was on catchment and delta, flow, floods and flood plains, form, biodiversity, aquifer and sub surface flows, meander, longitudinal and latitudinal connectivities etc. Concurrent discussions were held by four groups respectively on the topics (a) Flow/s (surface and sub surface) (b) Floods and flood plains (c) Form (geo-morphology etc) and (d) Biodiversity and riverine connectivities.

Shashank Shekhar presenting the discussions of the group discussing **"Flows (surface and sub surface)"** clarified that "flow is a defining characteristic of river. The temporal and spatial aspect of flows needs to be considered. The flow with its natural variability includes natural water, nutrients, sediments and biota". This he said enables it to sustain ecosystem functions; carry out geo-morphological functions (natural material transport); perform groundwater recharge function; support/ meet needs of living beings on sustainable basis and maintain social and cultural heritage. The group discussed about virgin/ pristine flows versus one with human intervention and the various components of flows. The linkages between sub-surface and surface flows were stressed. Flow decline can happen because of upstream diversions as also groundwater extraction through borewells for needs like irrigation. Groundwater is the country's lifeline today but excessive groundwater development is not sustainable. The need to understand river bed and its geomorphology was highlighted since changes in bed morphology often leads to connectivity loss. The importance of soil profile was also mentioned.

Dinesh Mishra, Barh Mukti Abhiyan, presenting on behalf of the group on **"Floods and floodplains"** said that "Rivers are self cleansing, flooding is purifying and rivers become pure after floods." He also presented some narratives related to flood plains. The evolution of humans from hunter to settler is dependent on floods and flood plains. The protection from floods led to the evolution of three agencies: Engineer, Contractor and State. Scriptures and traditional Hindu knowledge on rivers and floods is immense. The British brought in the concept of drainage system. Local wisdom regarding floods in villages is not taught in engineering colleges; only flood 'control' limited to embankments and bunds is taught in colleges.

Floods have now also become an urban phenomenon. There are limits to human intervention, Dinesh Mishra said. How much can we intervene with the flood plains is a question. Intervention will happen – most definitely. There is a need to analyse data on velocity (withheld by the Government in many cases), population density, rainfall and topography. Humans have changed the topography and hence it is important to identify deviation of topography. There is a need for regulation and delineation of flood plains. Cultural indicators should be understood and not ignored, he said.

On politics of floods he was of the view that floods are different for people, the state and the NGOs working for relief and rescue operations. It is difficult to define floods when floods create problems of erosion after embankments have been constructed, but before that floods were not a problem. The fury of floods has increased after the embankments were constructed but the state refuses to acknowledge this. The authority should be challenged when interventions challenge people's faith and culture. Fury of floods is much more now due to human intervention. The state is not prepared for a debate or discussion with the people. The arrogance of the establishment is known to all. Highlighting the need to focus on traditional knowledge, he said that local wisdom differs from place to place. The definitions do not hold as climate change is occurring. There are many traditional practices to adapt to floods. Traditional practices are on the decline due to a false sense of security given by the state due to embankments. There is a need for merging of traditional wisdom and engineering skills for floods and flood plain management, Dinesh Mishra said.

Pranab Choudhury speaking on behalf of group discussing **"Biodiversity and Riverine Connectivities"** began with discussing how conservation of biodiversity and traditional livelihoods is significant given that river system hosts varied life forms (higher and lower vertebrates; insects; reptiles; birds; microbial biodiversity; aquatic flora and fauna; river bank agro-biodiversity and mangrove. He went on to provide an account on types of habitat. The typologies based on geographical considerations were (a) Sources of rivers (b) Main channel (c)

Side channels (d) Drainage- biodiversity (endemism) (e) River-bed used for cultivation (f) River bank land-use- riparian vegetation (g) Estuarine zone. In typical/niche habitat he highlighted (a) Oxbow lake (b) River islands (c) Wetlands and (d) Mangroves and (e) Habitat of Mahaseer, Dolphin etc. River connectivity across time and space is essential to maintain biodiversity and a well connected (longitudinal, lateral and vertical) river carries typical and niche habitats for biodiversity right from its source to its estuarine zone. Riparian communities (seasonal farmers, mallahs, fisherman etc) have traditional livelihood dependence on rivers, he said. Riverine biodiversity forms a part of the human food basket. Riverine biodiversity (fisheries, river bank agriculture, riparian forests, mangroves) forms an integral part of the local livelihoods.

He gave an account of the types of biodiversity and how water quality was dependent on biodiversity. He talked of faunal diversity (higher vertebrates and lower vertebrates), microbial biodiversity, aquatic flora, river bed and bank agro-biodiversity and mangrove diversity (silt and saline dynamics). River flows for ecosystem functions and biodiversity shall be legally enforced, he said. He discussed the issue of conservation of biodiversity as against utility. The need to document biodiversity was highlighted. He noted the importance of defining and protecting rights of riparian communities especially the poor, including from downstream areas. Today these are neither assessed, nor compensated, he said. Connectivity across space and time (longitudinal, lateral and vertical connectivity) affects biodiversity. So does the governance or growth model. Efforts shall be made to restore riverine connectivities for species restoration, he said. There is a need for water allocation for biodiversity. The group was of the opinion that it should be mandatory to develop a baseline before any EIA/CEIA/river-intervention etc. There should be no commercialization of river spaces. There is a need for maintenance of river bank vegetation strip and creation of River Regulation Zone. Water for ecosystem and biodiversity should be legally enforceable. CCA (Community Conserved Areas) around rivers should be encouraged and spaces around rivers should be protected. Institutional linkages across river stretches shall be promoted for collective action for river protection and rejuvenation, he said.

Rajiv Sinha speaking on behalf of the group discussing **"Form"** said that the form of a river includes its width, character of the channel, bank slope, stability, substratum and the flood plain as an integral part of the river ecosystem. The rivers form has a lot to do with the river's hydrology and dynamics of its sediment transportation and determines the longitudinal, lateral and vertical connectivities. The form of a river which is the basis of varied habitats provided by the river has integral links with the river's biodiversity. Rajiv Sinha speaking on interlinking of rivers said that "proposals to artificially link rivers are likely to have major impacts on the form of the concerned rivers". Rivers, which have complete floodplain, are considered to be in equilibrium as also in good health. Rajiv Sinha noted that "active flood plains and valley margin defines the space for the river to perform its myriad functions and all interventions on river shall maintain the natural form (e.g. channel and flood plain relationship etc). Also the river structure in different sections (headwaters; montane floodplain; piedmont valley floodplain; coastal floodplain and delta-estuary) of a river should be appropriate for fulfilling its functions like sediment transport (aggradations/degradation), support to riparian vegetation, geomorphic connectivities (longitudinal and lateral) and diversity (riffle-pool sequence, bar complexity). The impact on form of a river due to interventions (dams/barrages; bridges; embankments; roads/culverts; channelization/floodplain encroachments; abstraction of water; discharge of waste; sand mining; catchment scale intervention and role of vegetation) is often not assessed properly and this has adverse impacts on the rivers ecology." The group was of the view that impacts on river form shall be assessed for river projects and historical variability should be taken into account and river space shall be designated. Any sharp change in form due to interventions should be avoided. On the proposal to interlink rivers the group was of the view

that it should be investigated in details and approved or rejected based on amongst other matters also on its impact on the form of the concerned rivers.

Paritosh Tyagi summed up the discussion by saying that the older concept of River Action Plan that focused on river water quality should be replaced with focus on the complete basin.

The plenary of the session was chaired and co-chaired by Ravi Chopra and Paritosh Tyagi

Session: A debate on interlinking of rivers

25th November, 2014

An open debate on interlinking of rivers moderated by Ramaswamy Iyer with Himanshu Thakkar and Brij Gopal as panelists was held as a part of the India Rivers Week. Participants from different parts of the country who congregated at the first ever India Rivers Week held at Delhi, discussed the issue in the wake of the present government's move to 'fast-track' the interlinking of rivers. The group was apprehensive that the project would amount to committing a deliberate hydrocide. The sense of the house was that the government should not go ahead with the interlinking of rivers until basin-wide options assessment was done in consultation and with the consent of the gram sabhas and the concerned communities.

Ramaswamy Iyer, former Secretary to the Government of India said, "interlinking of rivers has nothing to give to the drylands of India". Iyer expressed his distress at the move to expedite the project and stressed that the project was fundamentally flawed and potentially disastrous. "The deeply disquieting judgment by the Supreme Court in 2002 was a case of judicial overreach", he said.

Iyer noted that the National Commission on Integrated Water Resource Development Report had, in 1999, observed that optimal utilization of land and water should be aimed at fully exploiting intra-basin surpluses before considering inter-basin transfers. "The Commission had, after a careful examination of the water balances in the various basins, noted that there was no imperative need for massive water transfers. The assessed needs could be met with more

efficient utilization of intra-basin resources, except in the case of the Cauvery and Vaigai basins where limited water transfers could take place by transferring water from Godavari River".

Himanshu Thakkar, SANDRP, New Delhi, a panelist at the session deplored the lack of scientific basis of the project and said that “There is a need to do a proper basin and sub-basin wide options assessment for water resources management and development. Such options assessment would include local rainwater harvesting, watershed development, groundwater recharge, local water systems, optimum use of existing water resources, proper cropping pattern, System of Rice Intensification, treatment and recycling of effluents and demand side measures”. No such assessment has been undertaken in any river basin or sub-basin in India.

Open debate on “Interlinking of rivers” at India Rivers Week-2014, New Delhi

Thakkar questioned the soundness of the project in terms of the various benefits that are claimed on its behalf. “Groundwater constitutes the bulk of the water that is used in agriculture, drinking and in industrial sectors. The government needs to wake up to this reality. It should focus on increasing groundwater recharge and at the same time taking up community-led regulation and demand measures to reduce groundwater exploitation”, he said.

Brij Gopal, an eminent ecological scientist who had worked extensively on the Ken-Betwa river ecosystem, questioned the hydrologic viability of the gargantuan scheme. He challenged the very concept of surplus and deficit rivers. "Does the Ken river have surplus water to transfer to the Betwa"? He also wondered how the detailed project report has put forth different per capita basin water requirements for the two basins with similar characteristics. "Why have the people of the tribal dominated area where the proposed Doudhan dam is being constructed been not consulted? The loss to Panna Tiger Reserve and the Ghariyal sanctuary in the downstream of Gangau dam will be immense owing to submergence", he said. He highlighted the reduction in downstream flows and the permanent damage caused to the fisheries, wildlife and biodiversity.

Manoj Misra, PEACE Institute, New Delhi said that “There is a need for urgent reconsideration of the decision”. He urged that the union government supplement its talks with various state governments with civil society moves to bring the peoples' voice to the forefront.

Suresh Babu, WWF, India raised the issue of economic feasibility of the interlinking project, which is slated to cost a whopping Rs. 11.2 lakh crore. "This surely cannot be met from the government’s planned expenditure". The claims of the National Council of Applied Economic Research (NCAER) report regarding the several benefits of the programme by way of irrigation & power, improvement in growth rate of agriculture etc., were dubious. “Even if the government

raises the capital through loans, taxes and global financing, from where will it improve the cost recovery when irrigation will be unable to marginally recover even the running cost, let alone the project establishment cost. Where is the capital of this magnitude going to come from?" he questioned.

At the end of the day the organizers brought out a 2015 desk calendar featuring the photos of 12 different rivers and highlighting the sacrifice that the tribals have made during the famous struggle against the Koel Karo project in Jharkhand.

DAY THREE

Session: River – Threats

26th November, 2014

In this session the participants were to arrive at a narrative on "River – Threats". The focus was on structures (Dams, Barrages, Roads & Bridges) & flow diversion; Embankments; Pollution; Invaded flood plains; Hydro-power; Deforestation; Soil Erosion; Sand mining & River bed dredging; Flood control; Biological harvests / poaching; Constitutional & Legal issues. Concurrent discussions were held by the four groups on the topics (a)Dams, embankments, barrages, HEPs (RoR) (b) Polluted & encroached rivers (c) Over exploitation of river resources (sand mining; fishing; diversion of water etc) and (d) Unprotected status of rivers & river conflicts (Constitutional, Legal issues).

Shuchi Vora, WWF-India representing the deliberations of the group on **"River pollution and encroachment"** said, "Rivers are considered to be self-cleansing, and hence overburdened. Most rivers are dead or dying due to pollution and this indicates the failure of governance. Polluters get represented in governance, but affected have no role". Rivers have been polluted and their bed and flood plains encroached. There is absence of a river specific law preventing pollution and encroachment. The Water Act has been found to be ineffective with the result that our rivers are getting polluted.

Pollution of rivers not only leads to sick rivers but also adversely impacts the health of the people dependent on it. Pollution of the rivers is attributed to drainage of municipal sewage, industrial effluents, toxic agricultural runoff, mining (coal, aluminum, copper, iron etc) wastes etc into the nearby river. Dumping of municipal solid waste as well thermal pollution from power plants is also a cause of river pollution. Some of the key polluting industries include tanneries, chemicals, textiles, cement, sugar and paper and pulp. Today many seasonal rivers are wet and carrying sewage and industrial effluents in non-monsoon months, polluting groundwater and agricultural produce irrigated from them. Bed and flood plains of river stretches in many urban areas have been encroached and converted for river incompatible land uses. This has reduced the river's carrying capacity and increased the flood fury and dangers from them. Encroachment of river bed also reduces the potential of flood water spread and consequent recharge of groundwater. The river governance in the country including the pollution abatement mechanisms (CPCB and SPCBs) have failed to clean even a single river in the country. In matters of pollution and encroachment of rivers it is the prevention that is the crux.

The group was of the view that a river law covering amongst other things the issues of river pollution and encroachment should be enacted on a priority basis. Economic and health impacts of river pollution should be studied and documented. National standards on healthy rivers that deal not just with the water quality but also with the integrity of the river ecosystem should be

established, published and disseminated. CPCB and SPCB should be mandated to bring out annual report on the state of Indian Rivers and publish a red list of Indian Rivers. Governance of rivers in the country should be decentralized with emphasis on the promotion of local governance structures.

Plenary on threats to Rivers was chaired and co-chaired by Shripad Dharmadhikary and Dinesh Mishra

Anil Gautam, speaking on behalf of the group deliberating the issue of **"Overexploitation of rivers"** began with defining what river resources include. He said that a river can be called overexploited where longitudinal connectivity of river water, lateral connectivity with floodplain & river valleys, and vertical connectivity with subsurface water is broken. "Any use that goes beyond the basic needs & requirements of rivers and before meeting the needs of the riparian communities or negatively effects their basic needs can be called overexploited", the group noted.

The group was of the view that the adverse impacts of the over exploitation of river resources include drying and desiccation of rivers; pollution of river stretches; depletion and pollution of ground water; loss of soil fertility; disturbance and breakage in water and nutrient cycles; loss and even extinction of certain species; coastal erosion from reduced discharge into the seas; loss of traditional river dependent livelihoods; adverse impacts on the health of humans and non humans and an increase in social conflicts over river and water resources. The group recommended that thresholds by law of sustainable use of river resources should be established and implemented. Scientific studies should be undertaken to establish the adverse impacts of the over exploitation of river resources on human health.

Jiten Yumnan representing the group on **"Dams, embankments, barrages, HEPs"** said that structures across (dams, barrages, HEPs) and along (embankments) rivers are considered to be the most deleterious to the health of the rivers. They break the river connectivities (longitudinal, lateral and vertical), reducing the river's carrying capacity and often result in natural events like floods becoming far more furious and devastating than before. Their adverse impacts on riverine form and biodiversity is most telling. The drivers of major structures on the rivers are often 'outsiders' and vested interests with profit motive and at costs which are borne mostly by the river and the local people, Yumnan said. The benefits available from these structures are often unrealistic and deliberately exaggerated. The demand of energy and water in whose name the hydroelectric projects are justified are also doubtful. Decisions are taken in a top down and erroneous manner. The current EIA instrument does not cover embankments and

their impacts. Impacts of embankments on river Kosi and the local people in Bihar is a case in point. Post facto impact assessments and performance assessment of dams, barrages and embankments are absent.

There is a need to adhere to the recommendations of World Commission on Dams, he said. "The commons nature of rivers has to be respected in all aspects", Yumnan said. Cumulative impacts and carrying capacity studies of river based projects should be conducted and environmental clearances should be valid for only five years. All new projects should be halted till post facto impact and performance assessment of all existing projects in the river basin has been carried out, the group felt. There is a need to assess existing and under construction hydroelectric projects and barrages for its climate change implications and disaster potential. Basin level optimization and coordination should precede any planning for new projects.

"Constitution talks about rivers in a restrictive context. This need to be revisited closely", said Videh Upadhyaya, Lawyer representing the group on **"Unprotected status of rivers & river conflicts"**. Rivers are considered as 'living' ecological systems but their true understanding amongst planners and decision makers is inadequate. There are no legal provisions in place to ensure healthy rivers including adequate flows, protection of river form, connectivities or the water quality. There is no enunciation of river rights. Upadhyaya said that "conflicts over the use of river resources at different scales (local, regional, national and international) have increased in absence of any legally enforceable river law that may consider river holistically as an ecosystem and not just as a channel of utilizable water".

The right of rivers and right to water/right to environment under Article 21 of the Constitution need to be understood clearly. Right of rivers to be an ecosystem needs to be legally acknowledged. The River Basin Management Bill, 2012 needs to be revisited to remove many lacunae. Sustainable abstraction limits need to be legally defined and enforced. No stretch of rivers should be privatized," he said.

Shankar Sharma, power policy analyst from Shimoga speaking on the occasion said that the power sector demand-supply deficit stands at just 11 per cent and can be easily managed by improving the efficiency since potential of saving though efficiency improvement is much higher. Most forms of power generation be it coal/gas based, hydel or nuclear require tremendous amounts of water. The power sector is highly inefficient and according to the Integrated Energy Policy, the transmission and distribution losses are as high as 22-30 per cent. Most hydroelectric projects are very inefficient and peak power can be managed through other means. Most run of the river projects in India run for just five per cent of time and store energy for the remaining 20-22 hours, he said. We need a national debate on how much electricity we need and what is the optimum way of achieving it.

Session: River Futures

26th November, 2014

In this session the participants were to arrive at a narrative on "River – Futures". The focus was on Good & replicable practices / examples of a) Restored rivers; b) Protected rivers; C) rivers & people; d) Conflict resolution. Concurrent discussions were held by four groups on the topics (a) Campaigns for protection / Rejuvenation of rivers (b) Dams decommissioning & restored rivers (c) Good legal interventions & secured rivers and (d) Community initiatives for conflict resolution on rivers.

K J Joy, SOPPECOM, Pune speaking on behalf of the group that deliberated on the issue of **"Community initiatives for conflict resolution on rivers"** said that "there is a need to recognize the complexity, diversity and heterogeneity of conflicts around rivers. These conflicts often end up in courts for redressal. The experiences and struggles reveal limitations in the processes being handled in the court, thus raising the question of whether courts/tribunals are adequately equipped to redress these conflicts. At the same time there are several community evolved and driven resolution mechanisms, sometimes in the form of customary practices. These are often co-opted and/or sabotaged by vested interests and inappropriately mandated state agencies/ laws. There is a need to search for policy, legal and institutional avenues for legitimizing these resolution practices, and also frame alternative mechanisms within a normative framework of social justice, sustainability, and equity and democracy.
"

Bhai KK Chatradhara on behalf of the group on **"Campaigns for protection or rejuvenation of rivers"** highlighted the success stories like Koel- Karo (Jharkhand), Subansiri (Arunachal Pradesh, Assam), Tipaimukh (Manipur) and reservoir operations management strategy at Chalakudy River (Kerala). He said that "river rejuvenation should be looked at from a holistic perspective – from source to sea. Cumulative Impact Assessment including downstream impact assessment should be done before taking up of any new project. That should require consultations with and consent of Gram Sabha and local panchayat raj institutions. Local community people should be involved in discussions and decision making processes at all levels. Effective cost benefit analysis including options analysis and direct and indirect costs incurred such as cost of decommissioning, aesthetic and landscape loss, disaster potential of an area should be assessed. Sand auditing should be carried out." Agricultural policies/ patterns must be synchronized with e-flow requirement of the rivers. Extraction of water should not impact the river flow. Assessment of critical stretches within a river should be identified for protection. Local community people should be involved in discussions and decision making process at all level. CIA including downstream impact assessment shall be done before taking up of any new project.

Preeta Dhar representing the group on **"Good legal interventions and secured rivers"** pointed that "there is a need for addressing outdated laws and standards, gaps and for accounting for changes in technology." The greater role of panchayati raj institutions and local communities in governance was stressed. There are limitations of litigation as a strategy, so it should be the last step recourse. The group recommended the need for use of legal spaces to develop best practices and to go for strategic litigation. There is a need to raise public awareness regarding issues and laws and engage people. Implementation of laws and judicial orders is important. The group suggested some litigation strategies related to (i) role of trial courts (ii) penalty provisions (iii) accountability of institutions (iv) compliance of Environment Clearance conditions and (v) need to identify crucial issues like Cumulative Impact Assessment for hydro projects.

The plenary session on Rivers futures *was chaired and co-chaired by Himanshu Thakkar and Rohit Prajapati*

Sudhirendar Sharma, speaking on behalf of the group on **"Dams decommissioning and restored rivers"** said that "decommissioning of dams is new in the Indian context and in the light of the Mullaperiyar Dam, highly contentious and political. The arguments favoring decommissioning, if at all, are in a nascent stage both in terms of arguments, language and its presentation. The idiom of decommissioning has yet to be located. Locating decommissioning in the context of potential politics is weak in argument and smells of what critics might argue as a case of kinetic politics."

The group was of the view that decommissioning of dams which have outlived their projected life should be considered seriously. In river stretches where a cascade of dams have resulted in drying of the river, decommissioning of some of the offending dams should be carried out. In light of rapid technological advancement of non conventional sources of power like solar and wind and climatic adverse impacts of dams, their decommissioning for the restoration of rivers should be taken up. Further, some of the dams with major adverse impacts on river biodiversity should be considered for decommissioning.

Session: Bhagirath Prayas Samman

26th November, 2014

The Indian Rivers Week-2014 conference awarded individuals and organizations the "*Bhagirath Prayas Samman"* for their dedicated work on river integrity and safety. Mr Justice Madan Lokur, Hon'ble Judge, Supreme Court of India was the Chief Guest at the Awards Ceremony, held on 26 November, 2014. Speaking on the occasion he stressed on the need to put in place alternative dispute resolution mechanisms to resolve river conflicts. Courts are perhaps not the best or the first option for this, he said. He lamented the fact that there was no river protection law in the country but some key judgments of the Supreme Court could be cited where the Doctrine of Public Trust has been upheld in favour of river protection. Sri Anupam Mishra, Gandhi Peace Foundation, who was the Guest of Honour in this function spoke on the value of time-tested systems of water harvesting and the need to promote the use of indigenous

knowledge to solve water problems instead of gigantic and destructive schemes like the interlinking of rivers.

The awards were given to the following individual/ organisations:

Dr Latha Anantha, Chalakudy Puzha Samrakshana Samiti who has worked on safeguarding the integrity of the river Chalakudy (Kerala) was awarded for her exemplary capacity for combining sound research with the mobilization of community, political and state agencies, and for ushering in a unique methodology of consensus- based conservation of rivers in the country.

Akhil Gogoi, Krishak Mukti Sangram Samiti who has successfully utilised the Right to Information Act in conjunction with mass mobilization of communities with respect to ill conceived projects in river Subansiri (Assam) that could threaten their life, property and livelihoods. Due to the efforts of KMSS led by Akhil Gogoi, in association with a number of other organisations, the government had to make large number of changes in the construction and operation of the Lower Subansiri project.

Koel Karo Jan Sangathan, an organization born in 1976 was recognized for its untiring efforts to safeguard the integrity of the rivers Koel and Karo (Jharkhand). Koel Karo Jan Sangathan has through community mobilisation made exemplary efforts to conserve their sacred sites and to look at alternative development paths in place of the proposed Koel Karo hydroelectric dam. The Sangathan has carried on a long and heroic struggle in the face of enormous pressures from the vested interests, battling tremendous odds to forge one of India's foremost resistance movements to save rivers, riverine communities and their culture. The Sangathan has demonstrated the use of many innovative methods of struggle including people's curfew and people's check points.

Bhagirath Prayas Samman awards being conferred to individuals and organizations for their work on river protection

DAY FOUR

Session: India Charter for Rivers

27th November 2014

With 'Rivers in crisis' as the theme, the Conference attempted to devise a National Charter for Rivers and promote a National Forum for Restoration of Rivers.

The session was chaired and co-chaired by Shekhar Singh and Sanjay Kumar.

Detailed deliberations have resulted in a **Delhi Declaration on Rivers – Let our rivers live.** (**Annexure 1)**

The declaration deals with the causes of decline of rivers and states that the task in front of us is two-fold –

- The immediate stoppage of all harmful factors and interventions, so that rivers that are now in reasonable health may remain so, and those already affected to some extent are not further harmed; and
- The restoration of sick and dying rivers to reasonable health within a certain period of time.

It then provides an elaborate account of river What is a river?", "What is a dying river?", "Imperative of a flowing river", "Threats to river", "River futures" etc.

Valedictory session:

27th November, 2014

Mrs CT Mishra, member secretary, INTACH welcomed the Hon'ble Union Minister of Water resources, River development and Ganga rejuvenation to the Conference. Sushri Uma Bharati, Union Minister of Water Resources, River Development and Ganga Rejuvenation speaking in the valedictory function of the India Rivers Week hailed the first ever event on the vital issue.

She emphasized "if we want to save our rivers, the first step is to ensure that no untreated or even treated effluent or sewage finds its way into our rivers." Speaking on the issue of interlinking of rivers, she clarified that strict environmental regulations will be enforced while taking up the project. "River based projects may be a painful choice, but we cannot close our doors to it as it yields 'rich dividends' for the people", she said.

She assured that environmental flows will be maintained in the river itself and that a taskforce has been set up to "understand the ecological and environmental consequences of interlinking of projects". "Government will not proceed with interlinking of rivers if environmental consequences are adverse", she said. Manoj Misra, member of the organizing committee of India Rivers Week cautioned her not to proceed hurriedly on the project given its potential adverse social and ecological consequences.

Sushri Uma Bharti, Union Minister being felicitated at the valedictory function

Deliberations at Valedictory function of India Rivers Week

Release of publications and other matters:

***E newsletter on Mahanadi basin*:**

Sri Ramaswamy Iyer ji released the inaugural e-newsletter on water conflicts around the river Mahanadi focused primarily on ground works on issues of agriculture & industry; ground water and e-flows. The newsletter has been produced by the Forum for Policy Dialogue on water conflicts in India.

***Headwater extinctions*:**

Sri Ravi Singh, CEO and SG, WWF India released a new publication by SANDRP titled 'Headwater Extinctions – Hydropower projects in the Himalayan reaches of the Ganga and the Beas: A closer look at impacts on fish and river ecosystems.

This is based on research done on impacts of HEPs on fish biodiversity at sites in Uttarakhand and Himachal Pradesh carried out by E Theophilus of Himal Prakriti, Uttarakhand. The publication can be seen at http://sandrp.wordpress.com

Exhibitions held at the foyer

WWF-India organised a panel exhibition during India Rivers Week 2014, reflecting the programme's two year journey under its Rivers for Life, Life for Rivers programme. The programme envisions ***Ganga and Ramganga (one of its major tributaries) as healthy river systems, rich in biodiversity, and aims to provide long term water security to communities, businesses and nature.*** The panels highlighted themulti disciplinary, multi stakeholder approach adopted by its four pillars— habitat and biodiversity conservation, sustainable water management, urban and industrial water stewardship and climate change adaptation.

PEACE Institute Charitable Trust exhibited a detailed map of River Yamuna in three parts (Upper Yamuna, Middle Yamuna and Lower Yamuna). Photographs from different sites on the river which show the pristine river in the upper stretch of Yamuna as well as the dry and polluted river in the middle and the lower stretch of Yamuna were exhibited. A poster on the activities promoted by PEACE under a project titled "Developing River Restoration Techniques" was also exhibited.

Toxics Link put up an exhibition of photographs taken on rivers.

The **Himdhara** team put together a photo exhibition titled 'Disappearing Lifelines of India's Hydro State'. The exhibition highlighted the impacts of operations, under-construction and planned Hydro projects in the five river basins of Himachal Pradesh. Himachal Pradesh is India's largest hydropower producing state and has a planned potential of about 23000 MW. The costs of this development are being borne by the Himalayan River Basins.

Surender Solanki, an upcoming photographer exhibited photographs taken by him at different sites on river Yamuna.

Social (online) outreach at the IRW

Three social media platforms were built as the main tools for the online outreach. The primary platform being the Facebook (community) page - India Rivers Week, with maximum concerned audience, was set up for daily updates (visual & textual) during the conference week. Along with this, was a twitter handle under the same name, for live updates and snippets, from the experts' talks, discussions & chief guests' opening speeches and other behind the scene moments. To support these platforms was a YouTube playlist made in collaboration India Water Portal. This playlist went live last week and collects all the talks from the 4 days of the event.

We were able to perform as planned on our Twitter and Facebook account. With the aim to get maximum following & participation, our account and individual posts were re-shared by IRW partners, i.e. SANDRP, WWF - India, Toxics Link, India Waters Portal, International Rivers and INTACH. We strived for and successfully made 3 - 4 posts per day on Facebook and over 50 on twitter. The cross sharing helped us reach to larger audiences and we now have over 600 likes on Facebook and 55 followers on Twitter. In fact, on Day 2 & 3 our Facebook page's activity was 200% of total following. We continue to keep the page's activity up by sharing relevant news and proceedings of the IRW conference.

Conference proceedings videos (41) can be seen at
https://www.youtube.com/playlist?list=PLb77XCLwpLATm8Ut10GLTiuaLWzgORMrI

India Rivers Week coverage in media

http://www.dailymail.co.uk/indiahome/indianews/article-2852232/Centre-vows-push-river-links-plans-deemed-ecologically-sound.html

http://indiatoday.intoday.in/story/river-interlinking-nda-government-uma-bharati-india-river-week-ken-betwa-river-link-ganga/1/404126.html

http://www.thethirdpole.net/no-interlinking-of-rivers-if-it-affects-environment-says-minister/

http://www.counterview.net/2014/11/government-of-india-ready-to-reconsider.html

http://www.downtoearth.org.in/content/non-profits-organise-conference-draw-national-river-charter

http://greenwatchbd.com/not-proceeding-with-river-linking-if-eco-consequences-adverse-uma-bharti/

Times of India
http://timesofindia.indiatimes.com/city/delhi/Citizens-charter-votes-against-linking-rivers/articleshow/45784519.cms

Hindustan Times
Experts join hands to save dying rivers (Hindustan Times 16 Nov 2014)
http://yamunajiyeabhiyaan.blogspot.in/2014/11/experts-join-hands-to-save-dying-rivers.html

SANDRP

http://sandrp.wordpress.com/2014/12/01/dr-latha-anantha-cpss-and-river-research-centre-for-the-rivers-to-flow/

http://sandrp.wordpress.com/2014/11/27/union-minister-uma-bharti-at-irw-government-will-not-proceed-with-interlinking-of-rivers-if-environmental-consequences-are-adverse/

http://sandrp.wordpress.com/2014/11/25/india-rivers-week-day-2-roots-strongly-for-flowing-rivers/

http://sandrp.wordpress.com/2014/11/25/lessons-from-farakka-as-we-plan-more-barrages-on-ganga/

http://sandrp.wordpress.com/2014/11/24/india-rivers-week-inaugurated/

http://sandrp.wordpress.com/2014/11/24/celebrating-the-story-of-koel-karo-resistance-kkjs-gets-bhigirath-prayas-samman-at-first-india-rivers-week/

http://sandrp.wordpress.com/2014/11/24/an-introduction-to-godavari-basin/

http://sandrp.wordpress.com/2014/11/22/wris-river-basin-reports-hits-and-misses/

India Water Portal

http://www.indiawaterportal.org/articles/river-restoration-be-focus-first-india-rivers-week

http://www.indiawaterportal.org/articles/chalakudy-river-system-wins

http://www.indiawaterportal.org/articles/link-or-not-link-debate

http://www.indiawaterportal.org/articles/what-river

http://www.indiawaterportal.org/articles/smiling-river-crusader

http://www.indiawaterportal.org/articles/government-reconsider-river-interlinking-project

http://www.indiawaterportal.org/articles/non-violent-anti-dam-protest-wins

http://www.indiawaterportal.org/articles/how-will-ramganga-flow

Annexure - I

LET OUR RIVERS LIVE - DELHI DECLARATION

India Rivers Week, 27 November 2014

I. Preamble

(1.1) Most of India's rivers are in varying degrees of decline and distress. It is a deep concern at the plight of our rivers that lay behind the India Rivers Week 2014, the overall theme of which was 'Rivers in Crisis'.

(1.2) Arising from those deliberations, we, the organizers, delegates, and other participants of the India Rivers Week (New Delhi, 24 – 27 November 2014), have adopted and issued this Declaration.

II. Causes of Decline (Threats to Rivers)

(2.1) Many factors cause the decline of rivers:

- obstruction of flows by structures such as dams and barrages, based on an engineering approach of controlling and manipulating nature, in particular, rivers;
- excessive abstraction or diversion of waters (largely for irrigated agriculture - water-intensive crops, extension of irrigation to water-short areas, etc - but also increasingly for industrial use);
- excessive extraction of groundwater affecting the base flow in rivers;
- disruption of continuity in flows and large diurnal variations caused by run-of-the-river hydroelectric projects;
- drastic reduction of aquatic and riparian bio-diversity (primarily the result of deteriorating river-health, but also a contributory factor);
- dumping of construction debris on or near river beds;
- restriction of channels by embankments;
- occupation of floodplains;
- deterioration of catchments through human activity such as deforestation, destruction of water sources (springs, lakes, wetlands), etc;
- reckless and unregulated mining of sand from the river-bed;
- enormous generation of waste by urbanisation, and its disposal, untreated or partially treated, into rivers;
- dumping/discharge of sewage, industrial effluents, chemical residues from agriculture, and other pollutants and contaminants;
- disposal of religious offerings and idols, which has multiplied over time beyond the river's capacity to absorb; and so on.

(2.2) All these constitute threats to the well-being of rivers, aggravated by an instrumentalist/utilitarian engineering-cum-economic view of rivers, a limited perception of rivers as merely a source of water, with little concern for their multiple aspects, dimensions and values, and the absence in India of any statutory protection for rivers from abuse and misuse.

(2.3) Rivers and other natural resources are also threatened by improper nexuses, motivations and corruption, as well as by a flawed conception of development that exalts consumption as the ultimate value, but those are larger subjects not specific to rivers, and therefore not gone into in this Declaration. However, any effort to restore our rivers to health will eventually and inevitably lead us to those larger issues.

The Task

(3.1) The task is twofold:

(3.1.1) The immediate stoppage of all harmful factors and interventions, so that rivers that are now in reasonable health may remain so, and those already affected to some extent are not further harmed; and

(3.1.2) The restoration of sick and dying rivers to reasonable health within a certain period of time.

III. What is a River?

(4.1) A poor understanding of rivers lies at the heart of the widespread abuse of rivers The first step in any effort for the revival of rivers must be a proper understanding of what a river is.

(4.2) A river is more than a channel carrying water; it is also a transporter of sediment; it is also the catchment, the river-bed, the banks, the vegetation on both sides, and the floodplain. The totality of these constitutes a river. A river harbours and interacts with innumerable organisms (plant, animal and microbes). It is a natural, living, organic whole, a hydrological and ecological system, and part of a larger ecological system. A river is also a network of tributaries and distributaries spread over its basin and the estuary.

(4.3) As rivers flow, they perform many functions. Rivers are the major geomorphic agents which sculpt the earth's surface by incising deep valleys, carrying rocks and boulders and turning them to gravel, sand and clay. They support aquatic and riparian bio-diversity (flora and fauna); provide drinking water to human beings, their livestock and wildlife; influence the micro-climate; recharge groundwater; dilute pollutants and purify themselves; sustain a wide range of livelihoods; transport silt and enrich the soil; carry essential sediment to the estuary and to the sea; close the hydrological cycle by flowing to the sea, and maintain the temperature and salinity gradient in the sea, which are among the key drivers of the monsoon; prevent the incursion of salinity inland from the sea; provide nutrients to marine life; and so on. Rivers are also integral parts of human settlements, their lives, landscape, society, culture, history and religion.

(4.4) The notion that river water is used only when it is abstracted, and that in-stream water flow, particularly to the sea, is 'wasted', is a fallacy that shows a poor understanding of a river.

(4.5) A river as a system is connected *longitudinally* from the source to the delta, *laterally* with its flood plain and *vertically* with the bed and the associated aquifers.

(4.6) No two rivers are alike. Each river has a characteristic identity based on the totality of its physical, chemical, biological and functional attributes. Different sections within the same river also may vary in their characteristics.

(4.7) Indian rivers are monsoonal: their flow volumes vary greatly between the monsoon (high flows) and the non-monsoon months (lean season 'base' flows). The Himalayan rivers also receive water from snow-melt and glaciers.

V. What is a Dying River?

(5.1) Deteriorating flow regimes and the discharge of organic and toxic effluents combine to affect a river's health adversely. Further deterioration occurs when its 'organs' – the tributaries, the riparian vegetation, the floodplain, the bed, the biota – are damaged and mutilated. At some stage, the resilience and homeostatic ability of the river are lost, and the river ecosystem reaches a threshold from which recovery becomes very difficult, and the river may then be said to be dying.

(5.2) As the main river and the tributaries and distributaries together constitute a system, the decline of a tributary will lead to the decline of the river as a whole.

(5.3) The survival of the river cannot be ensured by the mitigation of only a few causative factors. For example, ensuring some flows and/or a reduction in waste discharges cannot revive a river in the absence of its floodplain or riparian vegetation or the biodiversity within the river or even the regular renewal of its bed sediments. Action may be needed on multiple fronts.

VI. Imperative of a Flowing River

(6.1) Natural flow by gravity is the defining characteristic of a river. What flows is not only water but also biota, sediment and nutrients, all of which serve vital purposes.

(6.2) Interference with natural flows must be exceptional. With every proposal for such interference, the question must be asked: is this interference absolutely necessary? Are there options that can obviate it?

(6.3) Large dams and barrages obstruct rivers, and smaller dams and diversion structures do so to a lesser extent. It follows that in every such case, large or medium or small, the effect of the intervention on the river and on the ecological system needs to be considered.

(6.4) Where structures across rivers are considered absolutely necessary, every effort must be made to maintain reasonable downstream flows, simulating the pattern of natural flows as far as possible.

(6.5) In that context, the concept of 'minimum flow' (cosmetically renamed as 'environmental or ecological flow') is misconceived. Every drop serves a useful purpose and therefore all flows are 'ecological'. What is needed is not 'minimum flow' but minimum interference with natural flows.

(6.6) In particular, there should be no diversion of waters from a river during the lean season.

(6.7) A cascade of dams or barrages across a river constitutes maximal interference with natural flows, and must be avoided.

(6.8) A run-of-the-river hydroelectric project for peaking purposes is a particularly destructive intervention in a river because it means both interrupted flows (with a series of interruptions in the case of a cascade of projects) and enormous diurnal variations in flows arising from the intermittent operation of the power plant. Such a project effectively kills a river and its biota. Other answers must be found to energy needs.

(6.9) In view of the vital relationship between groundwater and surface water, the impact of the extraction of groundwater on the base flows of rivers needs to be considered.

(6.10) In particular, the extraction of water through borewells on the river-bed will affect the base flow seriously and should not be approved without a careful examination.

(6.11) The above principles must govern future cases. Interferences with natural flows that have already taken place must be reviewed to consider the restoration of the original state of the river to the extent feasible.

VII. Floods and Floodplains

(7.1) Periodical floods are part of the river and are natural phenomena, not necessarily natural disasters. They could occasionally be fierce but are often benign and beneficial.

(7.2) The attempts to 'control' floods often increase the danger and damage. Large dams are not often planned with flood moderation as a primary aim, and even where they are, the competing claims of irrigation and power-generation often override the flood-moderation function. If the flood cushion is overlooked and the reservoirs are kept full at the beginning of the flood-season (for irrigation or power-generation), there will be no space to accommodate the floods when they come; and the flood waters, when released, will cause more and sudden flooding downstream than might have occurred in the absence of the dam.

(7.3) Not 'flood control' but 'learning to live with floods' is the right answer to this phenomenon.

(7.4) As for embankments, they have to be repeatedly rebuilt at great cost; they may fail in the event of a major flood and cause greater difficulties; by jacketing the river and preventing it from spreading they may create new problems further down; by blocking drainage from the adjoining areas into the river they often lead to water-logging and 'man-made floods' in the 'protected' villages; and they deprive the farmers of the benefit of the deposit of silt by the receding floods. Thus they have often proved a remedy worse than the disease.

(7.5) The river needs space to accommodate floods. That space must be determined with reference to the hundred-year return flood, and left free to the river. Without this, the floods may become destructive. The floodplain is therefore an essential and integral part of the river and must be respected. It is not vacant space available for building on or for 'development'.

VIII. Protection from Pollution

(8.1) The best protection of a river from pollution is the complete prevention of pollutants and contaminants (even after treatment) from entering the river. This applies to industrial effluents, commercial waste, agricultural runoff, municipal and domestic sewage, etc

(8.2) For domestic and municipal sewage, alternatives such as local, decentralised, ecologically appropriate and less-energy-intensive sewage treatment methods, with local use of treated material, must be considered. Treated material, after recycle and re-use, eventually reaching a river, must be at tertiary level.

(8.3) Alternatives to flushing toilets must be worked out and adopted.

(8.4) For Industry, the medium term goal must be full treatment of waste, i.e., zero effluents. In particular, certain severely polluting industries require special and urgent attention; these include slaughterhouses, tanneries, pharmaceuticals, chemicals, mining, textiles, cement, sugar, paper and pulp, and power of all kinds. In all cases, there must be full recourse to recycling and multiple use, with water-use as a closed cycle.

(8.5) As for agriculture, the pollution and contamination of irrigation runoff by chemical fertilisers and pesticides can only be stopped by a transformation from the Green Revolution-type of high-chemical-input, high-energy, high-capital, centralised agriculture to low-external input sustainable agriculture (LEISA). Such a transformation is doubtless difficult and will require much time and effort, but is inescapable.

(8.6) Once the inflow of pollutants and contaminants into a river has been stopped, the river will purify itself in time provided the necessary flows are maintained.

IX. What Needs to be Done?

(9.1) ***Flows:***

(9.1.1) River flows shall be *aviral* (uninterrupted, continuous) and unpolluted (*nirmal)*. This over-riding principle shall govern all uses of and interventions in rivers, and shall be given statutory backing. In particular, certain rivers, because of their biodiversity and social/cultural significance, should be left untouched.

(9.1.2) Abstraction of waters from rivers needs to be minimised in every possible way, and avoided altogether in the lean season. Reducing our freshwater footprint is an essential part of rescuing rivers from decline.

(9.1.3) As part of this discipline, there shall be no external water for a city until it exhausts all local options including rainwater- harvesting, groundwater recharge, protection of local water systems including floodplains and forests, and so on.

(9.2) ***Projects: Dams, Barrages, Embankments etc:***

(9.2.1) There shall be a thorough, rigorous and comprehensive review of the impacts, positive and negative, of all existing dams, barrages, embankments and other structures on rivers. The original cost-benefit calculation on which the investment decision was taken in each case shall be rigorously re-examined *ex post facto*.

(9.2.2) The decommissioning of those dams, barrages, embankments or other structures that were *ab initio* misconceived and serve no useful purpose, or have done great harm to environment and ecology, or have become old and can be presumed to be nearing the end of their useful life, must be initiated immediately.

(9.2.3) There shall be no further construction of dams, barrages, embankments or other structures that interfere with river flows until the comprehensive review proposed above has been carried out.

(9.2.4) Where, in an exceptional case, such a project is proposed as necessary, it shall be subjected to a stringent scrutiny and shall be considered only if, in an options assessment with reference to felt and identified needs, it represents the unique option or the best available option in the given case.

(9.2.5) Any such project shall be planned and appraised within a river-basin-level hydrological and ecological framework, governed by a perspective of social justice and equity.

(9.2.6) In any such project, the principle of minimum interference with natural flows shall be observed, and downstream flows shall be maintained, not at a minimum level, but at a level appropriate for the wide range of functions that a river performs.

(9.2.7) Run-of-the-river hydroelectric projects do great violence to rivers and shall be avoided as far as possible. The place accorded to them in energy policy shall be re-examined, and other answers found for energy needs estimated with due regard to efficient and economical use.

(9.2.8) Not only big dams, barrages and embankments but even check dams, bridges, culverts, and anicuts may have an impact on river flows. This shall be carefully assessed before the construction is undertaken.

(9.2.9) The Inter-Linking of Rivers project, a wholly misconceived project based on completely fallacious ideas, will not merely fail to produce the expected benefits but will also cause immense harm to rivers, ecological systems, and people. It shall be carefully re-examined with reference to all the criticisms that have been made. The reasons why it cannot and should not be undertaken shall be explained to the Supreme Court.

(9.2.10) The proposal to build barrages and related structures on the Ganga and the Yamuna for navigational purposes is fraught with danger to the rivers and shall be abandoned. Navigation on these and other rivers shall be confined to what is feasible with the natural flows of the rivers. No river shall be re-engineered for navigational purposes.

(9.2.11) Similarly, there shall be no dredging of a river for navigational purposes. Dredging the river-bed for navigation is open to the same objections as sand-mining. It will do

physical violence to an organic component of the river, and amounts to the disembowelling of the river.

(9.3) ***EIA/SIA:***

(9.3.1) The entire process of environmental, ecological, social and related assessments of projects by Committees of the Ministry of Environment and Forests shall be overhauled to ensure professionalism and objectivity and ensure insulation from improper political influence. The track record of persons to be appointed to the appraisal Committees shall be carefully examined to determine their suitability for inclusion, and avoid conflicts of interest.

(9.3.2) In each case, there shall be a truly independent, objective, transparent, professional Environmental Impact Assessment (EIA), as also a Social/human Impact Assessment (SIA), and a Disaster Potential Assessment (DPA), by an agency or agencies far removed from the ambit of influence by the project proposers or approvers. The agencies for this purpose shall be chosen by the Ministry of Environment and Forests (or by a statutory body for administering the Environment Protection Act if one is established) out of a panel maintained by it.

(9.3.3) In addition to the project-level assessments, there shall be a cumulative impact assessment (CIA) of all projects in a river basin, including carrying capacity studies.

(9.3.4) In any EIA/SIA/CIA, the inter-relationship between the river and the associated aquifers shall be kept in view.

(9.3.5) In the appraisal process, the preservation of bio-diversity (flora and fauna) shall be a very important consideration.

(9.3.6) In all decision-making on such projects, the approach and criteria recommended by the World Commission on Dams (2000), shall be followed.

(9.3.7) In particular, the question “Who will benefit from the project and who will bear the risks and costs of the project” must be gone into. See also the reference to the principle of Free, Informed Prior Consent in section 9.7.1 below.

(9.3.8) In the EIA/SIA/CIA, all costs and benefits, direct and indirect, upstream and downstream, proximate and ultimate, quantifiable and non-quantifiable, shall be gone into.

(9.3.9) Adequate time – no more, no less - must be allowed for a proper EIA/SIA/CIA. The spirit and integrity of the process shall not be compromised by an undue concern for speed of clearance, which is important but shall not be an over-riding consideration. Besides, “clearance” must be understood to include “non-clearance”, i.e., rejection, in certain cases.

(9.3.10) It shall be understood that the timely and positive outcome of the whole process will depend on the prompt submission of full and reliable information and documentation by the project proponents.

(9.3.11) There shall be regular periodical post-clearance monitoring of compliance with clearance conditions, and there shall be penalties, including cancellation of clearance, for non-compliance and/or misrepresentations at any stage.

9.4 Public Consultation

(9.4.2) The consent of the local people shall be an essential requirement for all projects, and a Public Hearing (PH) is an instrument for securing that consent. It shall be held in all affected blocks, including not only submergence areas but also downstream areas.

(9.4.3) PH shall be real and effective and not nominal and ritualistic. It must be kept in mind that PH is more than just 'hearing' and must be true *consultation*.

(9.4.4) The EIA/SIA/CIA and other relevant documentation shall be made available in English, Hindi, and the local language at least a month in advance of the PH.

(9.4.4) PH shall be conducted by an independent panel to ensure relevant knowledge and experience, true professionalism and immunity to improper influence.

9.5 Environmental Management Committee

(9.5.1) There shall be an Environmental Management Committee (EMC) for each project, and it shall include, to the extent of 50%, members from local groups, NGOs, and independent persons.

(9.5.2) There shall be an EMC for each Sewage Treatment Plant, each urban area, each 5-km stretch of rivers, each Pollution Control Board from the Block upwards

9.6 Climate Change:

(9.6.1) The phenomenon of climate change is leading to changes in the rainfall pattern and glacier-melt and in the river-flow patterns, rendering all past project planning obsolete. Fresh studies of the impact of climate change on precipitation, quantum and variability of river flows, snowfall, snowmelt, glacier melt, etc, need to be undertaken and completed urgently.

9.7 Displacement, Rehabilitation:

(9.7.1) There shall be no involuntary displacement of people for 'developmental' projects. The principle of Free, Informed, Prior Consent (of people concerned with a project in any manner) shall be observed.

(9.7.2) The people likely to be affected shall be fully kept informed and consulted at all stages from the first inception of a project to the final implementation and commissioning, and thereafter, reviewing and monitoring. The planning, implementation and operation of the project shall be truly participatory.

(9.7.3) The resettlement and rehabilitation of project-affected people shall be such as to make them better off than before.

(9.7.4) The people likely to be affected by a project shall be statutorily given the first claim on the benefits expected from the project.

9.8 Natural Drainage Channels:

(9.8.1) In the processes of urbanization and economic development, care shall be taken not to interfere with natural drainage channels. Where interference has already taken place, efforts shall be made to restore the original conditions to the extent possible.

9.9 River Water Disputes:

(9.9.1) Inter-State and inter-country disputes over rivers arise from competitive unsustainable demands for their waters adding up in the aggregate to more water than there is in a river. This is the surest way of killing a river. While laws and treaties might exist for dealing with such disputes, community action for resolving them through people-to-people initiatives should be encouraged.

9.10 Integrity of river system:

(9.10.1) The ecological and hydrological integrity of the river system shall not be compromised. The river-bed shall be inviolate, the banks and floodplains shall not be encroached upon, and the water sources in the catchment shall be protected.

9.11 Bio-diversity:

(9.11.1) There shall be a thorough documentation (through participatory and multidisciplinary methods) of the riverine biodiversity, its uses, and the threats to it. River bank vegetation shall be restored. Efforts shall be made to maintain or restore riverine connectivities for species restoration.

9.12 Data Relating to Rivers:

(9.12.2) All data relating to rivers shall be in the public domain, and accessible to all citizens. The practice of treating such data as confidential or as available only for official use shall be forthwith abandoned.

(9.12.3) Wherever possible data on virgin flows at different points of a river should be collected.

9.13 Annual reports on Rivers:

(9.13.1) The Ministry of Water Resources and the National River Conservation Directorate of the Ministry of Environment and Forests shall separately or together bring out annual reports on the state of all rivers (Red Lists of Rivers).

9.14 No commercialisation:

(9.14.1) River space shall not be commercialised under schemes such as ‘riverfront development’.

(9.14.2) No river, or any stretch of it, shall be privatised.

9.15 A River Protection Law:

(9.15.1) Having regard to several of the points made above, a comprehensive law is needed for the protection of rivers from human abuse and misuse, *inter alia* recognizing a river as a legal person and conferring on it a legal right to its waters, natural variations in flows, physical components such as its bed, banks, vegetation, floodplains, biota, etc.

(9.15.2) Such a law shall specifically restate the constitutional obligation to protect the environment (including rivers and riverine biota) that already exists under Articles 48A and 51A (g).

(9.15.3) By judicial pronouncements, it is already part of Indian law that water as a natural resource (including rivers) is held by the state in public trust for the community. This could be specifically restated in the proposed law on rivers.

(9.15.4) In addition, River Zone Regulation measures shall be introduced to provide statutory protection to rivers and their essential connectivities. Community Conserved Areas (CCA) around rivers shall be encouraged and provided with legal protection. Institutional linkages across river stretches shall be promoted for collective community action for river protection and revitalisation.

(9.15.5) Critical biodiversity stretches in our rivers should be identified and kept pristine by law.

9.16 Livelihoods:

(9.16.1) Local and traditional livelihoods based on rivers shall be restored and promoted.

9.17 Responsibilities for All:

(9.17.1) All of us (the state, the engineers, bureaucrats, farmers, industrialists, institutions of all kinds, ordinary citizens) have contributed in varying degrees to the present state of our rivers. All of us must alter our ways and our relationship with rivers. Let the rivers live. Let us learn to live with and celebrate rivers.

(9.17.2) Based on this declaration, a national campaign shall be launched for the restoration of India's rivers.

Annexure II

Message of condolence

We the members of the Organising Committee of the India River Week 2014 are shocked and deeply grieved to learn about the untimely demise on 29 Nov 2014 of Sri Vijay ji in an unfortunate accident at the Mughalsarai railway station while he was on his way back after participation at the IRW.

Sri Vijay ji was an active member of the *Nadi Wapasi Abhiyan Samiti* and the *Jal Jan Jodo Abhiyan*. He had worked incessantly for decades for the rivers and the riverine communities of Bihar, had played an extremely active and constructive role at the IRW, and had offered to hold a similar meeting in Bihar on the subject of *Tanao Mein Nadiyan* (Rivers in Stress). In the few days we were together, we had chance of appreciating Vijay ji not only as a source of grounded knowledge and reflective ability, but also as a kind, patient, compassionate and caring human being.

Sri Vijay ji, as a result of his untimely demise, has left behind a family of three daughters, one son and a wife with health issues. Of the three daughters, one is married and the son is studying in Bangalore.

As we at the OC of IRW condole the sad and untimely demise of Sri Vijay ji, we make an appeal to the larger IRW fraternity to once again come together and to help and support the family of Sri Vijay ji.

His loss to his family and to the cause of the rivers is irreplaceable, but we can reach out to his family in their dark hour, to try and lessen their pain and the impact of his demise.
New Delhi; 8 December 2014

Late Vijay ji (right in the picture) with Eklavya Prasad (left)

Annexure III: Conference Pictures

DAY 1 (REGISTRATION, INAUGURAL FUNCTION, WHAT IS A RIVER)


RESERVED


WWF
CAUVERY


INDIA RIVERS WEEK, 2014
RIVERS IN CRISIS
24-27 November, 2014
New Delhi
india rivers week

DAY 2 (RIVER – AN ECOSYSTEM, INTER LINKING OF RIVERS DEBATE)

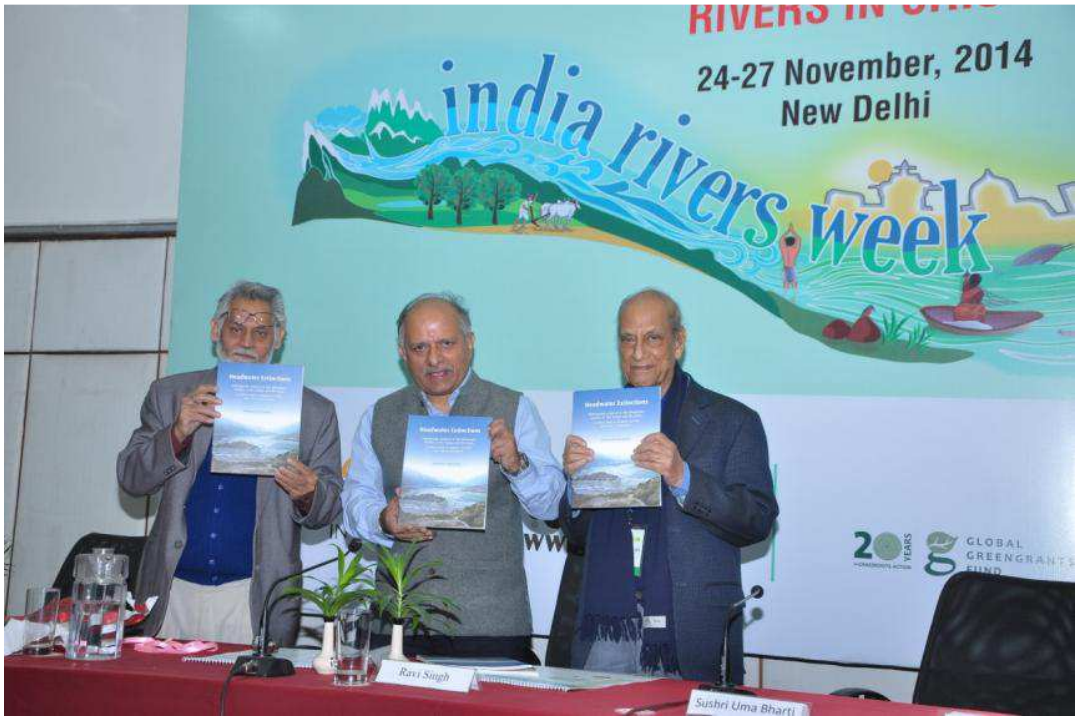

WWF

DAY 3 (THREATS TO RIVERS, BHAGIRATH PRAYAS SAMMAN)


New Delhi
rivers week
INDIA
RIVERS WEEK, 2014
RIVERS IN CRISIS


INTACH
WWF
Sejal Worah
Anupam Mishra

Day 4 (Rivers futures, Valedictory session)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New Delhi
india rivers week
Ravi Singh
Sushri Uma Bharti


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Annexure IV: Program
INDIA RIVERS WEEK, 2014 – "RIVERS IN CRISIS"
24-27 November 2014
WWF-India, 172-B, Lodi Estate, New Delhi – 110 003

DAY ONE - 24 November 2014

Time	Theme / Topic	Activity	Speaker / Panelist
9.00 – 10.00		Registration	
10.00 – 11.00	**INAUGURAL SESSION**		
10.00 – 10.05		Opening remarks & Welcome	Ravi Singh, SG & CEO WWF India
10.05 – 10-15		IRW objectives	Manoj Misra
		Key note address	Ramaswamy Iyer
10.15 – 10.35		Address by the Chief Guest	Sri Jairam Ramesh, MP
10.35 – 10.55		Vote of Thanks	Ravi Agarwal
10.55 – 11.00			
11.00 – 11.15		**TEA**	
11:15- 13:15	**WHAT IS A RIVER?**	**Concurrent Group discussions** Task: Defining Rivers 'holistically' **Focus**: a) What definitions existed traditionally? b) What functions, values and services need to be considered while defining rivers? c) How do we connect aspects of art & culture, spiritual values, biodiversity, livelihoods etc in the definition? e) Any other relevant factor/s?	**Conveners:** **Group A:** Manoj Misra **Group B:** Mallika Bhanot **Group C:** Manshi Asher **Group D:** Manu Bhatnagar
13:15- 14:15		**LUNCH**	
14:15- 15:15		Break out groups continue discussions	
15:15- 15:30		**TEA**	
15:30- 17:30	**Plenary**	1.Breakout groups present their findings 2.Open house discussion **Plenary Output:** River definition is adopted	**Chair:** BC Choudhury **Co-Chair:** Tripta Wahi
17:30- 19:00		Film screenings & experience sharing / story telling on rivers	Films / Documentaries

Group A-Cauvery; Group B – Narmada; Group C – Brahmaputra; Group D - Satluj

DAY TWO - 25 November 2014

Time	Theme / Topic	Activity	Speaker / Panelist
	THEME: RIVER NARRATIVES		
	Narrative 1. RIVER – AN ECOSYSTEM	**Focus**: Catchment & Delta, Flow, Floods & flood plains, Form, Biodiversity, Aquifer & sub surface flows, Meander, Longitudinal and latitudinal connectivities etc	
09:30-12:30		**Concurrent Group Discussions** **Subjects** Group A: Flow/s (surface and sub surface) Group B: Floods and flood plains Group C: Form (geo-morphology etc) Group D: Biodiversity and riverine connectivities	**Conveners:** **Group A**: Shashank Shekhar **Group B**: Dinesh Mishra **Group C**: Rajiv Sinha **Group D**: Pranab Choudhury
12:30-13:30	**Plenary**	1. Group presentations 2. Open house discussion **Plenary Output**: *Essentials of a Healthy River*	**Chair:** Ravi Chopra **Co-Chair**: Paritosh Tyagi
13:30-14:30		**LUNCH**	
	Narrative 2. RIVER - THREATS	**Focus**: Structures (Dams, Barrages, Roads & Bridges) & flow diversion; Embankments; Pollution; Invaded flood plains; Hydro-power ; Deforestation; Soil Erosion; Sand mining & River bed dredging; Flood control; Biological harvests / poaching; Constitutional & Legal issues;	
14:30-16:00		**Concurrent Group Discussion** **Subjects** Group A: Dams, embankments, barrages, HEPs (RoR) Group B: Polluted & encroached rivers Group C: Over exploitation of river resources (sand mining; fishing; diversion of	**Conveners:** **Group A:** Jiten Yumnam **Group B:** S. Janakrajan **Group C:** Pandurang Hegde **Group D:** Videh Upadhyay

		water etc) Group D: Unprotected status of rivers & river conflicts (Constitutional, Legal issues)	
16:00-16:15		**TEA**	
16:15-18:30		**Group Discussion continues**	
18:30-19:30		Public debate on "Inter-linking of Rivers"	**Moderator:** Ramaswamy Iyer **Panel**: Himanshu Thakkar; Brij Gopal

DAY THREE – 26 November 2014

Time	Theme / Topic	Activity	Speaker / Panelist
	Theme: RIVER NARRATIVES		
09:30-11:30	**Plenary** (continued from Day 2)	1. Group presentations 2. Open house discussion **Plenary output**: *Dealing with threats*	**Chair:** Dinesh Mishra **Co-Chair**: Shripad Dharmadhikary
11:30-11:45		**TEA**	
	Narrative 3: RIVERs FUTURES	**Focus:** Good & replicable practices / examples of a) Restored rivers; b) Protected rivers; C) rivers & people; d) Conflict resolution	
11:45-13:30		**Concurrent Group discussion** Group A: Campaigns for protection / Rejuvenation of rivers Group B: Dams decommissioning & restored rivers Group C: Good legal interventions & secured rivers Group D: Community initiatives for conflict resolution on rivers	**Conveners:** **Group A:** Bhai KK Chatradhara **Group B:** Sudhirendar Sharma **Group C:** Preeta Dhar **Group D:** KJ Joy
13:30-14:30		**LUNCH**	
14:30-15:30		Group discussion continues	
15:30-15:45		**TEA**	

15:45 – 17:30	**Plenary**	1. Group presentation 2. Open house discussion **<u>Plenary output</u>**: *Road map to river restoration*	**Chair:** Himanshu Thakkar **Co-Chair:** Rohit Prajapati
18:30-19:30		***BHAGIRATH PRAYAS SAMMAN****	• Welcome: Sri Manu Bhatnagar, INTACH • About Bhagirath Samman: WWF India • Address by Guest of Honour: Sri Anupam Mishra • Citation and audio visual on the awardees and the distribution of awards: Hon'ble Mr Justice Madan Lokur • Felicitation of Jury members • Address by Chief Guest: Hon'ble Mr Justice Madan Lokur • Vote of Thanks: Sri Suresh Babu, WWF India
19.30 – 20.30		**DINNER**	**WWF-India**

DAY FOUR – 27 November 2014

	<u>Theme</u>: INDIA RIVERS CHARTER (IRC) /DELHI DECLARATION ON RIVERS		
09:30-11:30	**Plenary**	1. Presentation of draft IRC 2. Open House **<u>Plenary Output</u>**: *India Rivers Charter is finalized*	**Presenter:** Manoj Misra **Chair:** Shekhar Singh **Co-Chair:** Sanjay Kumar
11:30-11:45		**TEA**	
	<u>Theme</u>: INDIA RIVERS FORUM (IRF)		
11:45-12:30	**Plenary**	1. Presentation of draft IRF 2. Open house	**Presenter:** Manoj Misra **Chair:** Shekhar Pathak

		<u>Plenary Output</u>: *Adoption of IRF*	**Co-Chair:** Ravi Agarwal
12:30-13:30	**VALEDICTORY FUNCTION**	1. Welcome 2. Highlights of India Rivers Charter / Delhi Declaration on Rivers 3. Address by SG & CEO, WWF India 5. Address by Chief Guest 6. Concluding remarks & Vote of Thanks	Dr CT Mishra, INTACH Sri Ravi Agarwal, Member, Sri Ravi Singh Sushri Uma Bharti, Hon'ble Union Minister of Water Resources, River development and Ganga rejuvenation Himanshu Thakkar
13:30-14:30		**LUNCH**	

Annexure V: List of participants

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