State Consultation on Water- a resource for survival in Crisis

(Background paper for workshop on 29th & 30thDecember, 2008 by IGSSS[1], SPWD[2] & SPARK)

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Water is a prime natural resource, a basic human need and a precious national asset. Planning, development and management of water resources need to be governed by national as well as global perspectives. It is the part of a larger ecological system. Realizing the importance and scarcity attached to the fresh water, it has to be treated as an essential environment for sustaining all life forms.

As per the latest assessment (1993), out of the total precipitation, including snowfall, of around 4000 billion cubic metre in the (India) country, the availability from surface water and replenishable ground water is put at 1869 billion cubic metre. Because of topographical and other constraints, about 60% of this i.e. 690 billion cubic metre from surface water and 432 billion cubic metre from ground water, can be put to beneficial use. Availability of water is highly uneven in both space and time. Water, as a resource is one and indivisible: rainfall, river waters, surface ponds and lakes and ground water are all part of one system. Floods and droughts affect vast areas of the country, transcending state boundaries. One-sixth area of the country is drought-prone. Out of 40 million hectare of the flood prone area in the country, on an average, floods affect an area of around 7.5 million hectare per year. Planning and implementation of water resources projects involve a number of socio-economic aspects and issues such as environmental sustainability, appropriate resettlement and rehabilitation of project-affected people and livestock, public health concerns of water impoundment, dam safety etc. Problems of water logging and soil salinity have emerged in some irrigation commands, leading to the degradation of agricultural land. The development and overexploitation of groundwater resources in certain parts of the country have raised the concern and need for judicious and scientific resource management and conservation. Growth process and the expansion of economic activities inevitably lead to increasing demands for water for diverse purposes: domestic, industrial, agricultural, hydropower, thermal-power, navigation, recreation, etc. So far, the major consumptive use of water has been for irrigation. While the gross irrigation potential is estimated to have increased from 19.5 million hectare at the time of independence to about 95 million hectare by the end of the Year 1999-2000, further development of a substantial order is necessary if the food and fiber needs of our growing population are to be met with. The country's population which is over 1027 million (2001 AD) at present is expected to reach a level of around 1390 million by 2025 AD.

Production of food grains has increased from around 50 million tones in the fifties to about 208 million tones in the Year 1999-2000. This will have to be raised to around 350 million tones by the year 2025 AD. The drinking water needs of people and livestock have also to be met. The demand in rural areas is expected to increase sharply as the development programme improves economic conditions of the rural masses. Demand for water for hydro and thermal power generation and for other industrial uses is also increasing substantially. As a result, water, which is already a scarce resource, will become even scarcer in future. This underscores the need for the utmost efficiency in water utilization and a public awareness of the importance of its conservation.

[1] Indo global social service society

[2] Society for Promotion of Wastelands Development

In Jharkhand state a total of 11 river basins are existing. These river basins are Gumani, Mayurakshi, Ajay, Sankh, South Koel, North Koel, Barakar, Damodar, Kharkai, Subarnarekha and others. The annual water availability on the basis of 75% dependency on these 11 river basins the surface water is 260162 lakh cubic meter and the groundwater is 49924 lakh cubic meter.

The 82.7% of Jharkhand water reserves is surface water and 17.3% is ground water. According to the Bihar Irrigation Commission, Jharkhand has 29.7Lakh hectares of land usable for agriculture of which 12.25 lakh ha. of land can be irrigated, however only 2 lakh hectares of land is actually provided with irrigation. Of the irrigated land, 58.3% is irrigated using surface water, while 41.7% is irrigated using ground water. 29.5% of the irrigated land is irrigated using wells and bore wells. 18.8% of the irrigated land is serviced by tank and reservoirs. 17% of the total area is being irrigated by canals which are the part of major irrigation projects in the Jharkhand.

Tanks and reservoirs in Jharkhand is currently covering 30093.99 hect. area. Out of this 20044.24 ha. is of government tanks and approx. 100049.75 ha. area is of private ponds. The state has an appropriate climate for vegetable production which required water from sources like pond, wells etc. As per the data[3] a surplus of 10.29 lakh million ton vegetable was produced in the state. Since vegetable production is a profitable venture for the local farmers as it has more demand, less production time and readymade market etc. the inclination is increasing towards that. In terms of food-grains the state is still far behind the required production.

The topography of the state has also accepted the small water harvesting structures like ponds, wells, diversions structures etc which plays the role of water recharging and sources of irrigation too. But the increase in population, urbanization and new life style of human has oriented them to extract the underground water for there daily use. The farmers are also extracting groundwater for agriculture purposes.

In the state rainfall plays an important role in determining land use since agriculture is mostly rain-fed. Being heavy rainfall region still the area experiences drought. Pre-monsoon rain plays an important role in timely sowing during Kharif season, while "Hatia" rains in September correspond to the milking stage of paddy. Rainfall in the milking stage is critical; lack of it drastically reduces the productivity. The post monsoon rain stabilizes rabi crop, by providing residual moisture. Efforts like farm ponds in medium and low lands as well as 5% model have been made to provide supplemental irrigation, but more research on crop modeling and decision support system is required.

The uncertainty in rainfall necessitates a need for development of irrigation systems. In Jharkhand 12.9% of the net sown area is under irrigation[4] . Wells are the main source of irrigation (29.38%) followed by others (streams, rivulets) 25.7%, and ponds (19.07%). Canal irrigates only 17.5% of the cultivated area.

Jharkhand has one major and ninety seven medium irrigation projects with a potential of 2.088 lakh ha. but the actual irrigation is only 0.95 lakh ha. There are 55,225 minor surface irrigation projects with a potential of 2.09 lakh ha which irrigates 1.36 lakh ha The state has 3.24 lakh ground water sources with a potential of 2.12 lakh ha. irrigating 1.54 lakh ha., the efficiency of groundwater based sources is highest, thus indicating high pressure on groundwater with very little effort on ground water recharge.

[3] From agriculture department of Govt. of Jharkhand for the year 2005
[4] Dep't. of Water Resources, GOJ

The Drinking water supply in case of Capital of Jharkhand is the responsibility of Public Health Engineering Department (PHED- covers 50% area) and RMC[5]. The present drinking water supply to Ranchi town is being made from three surface water sources namely: Kanke Dam, Hatia Dam, and Rukka Dam having the combined capacity of 246 MLD. The Existing water distribution system is old and is patched at places with new pipelines. There are only 13710 number of Household connections in the city at present, which amounts to be only 7.8 % of the total estimated household of 1, 74,750. The other sources of water supply in the city comprises of 1718 number of tube wells, 510 number of stand posts, 35 number of wells in RMC area. The present water supply covers 65% of the population. (RMC & PHED estimates it as 80%). On an average, it is stated that water is supplied to households at 100 lpcd per household. At present non-revenue water is about 92%. The other identified issues are; non-uniformity in supply (levels), High amount of distribution losses (Over 40%), inefficient operations, high pollution in distribution network, depleting ground water etc., In view of the 3 above the city proposes to address to prepare the comprehensive water sector development plan and to encourage the consumers to install Metering system. In rest of the state the Water supply system is hardly effective. This all is not at all applicable for rural mass as they have to depend on some of the installed hand pumps (functionality..?).

In Jharkhand the water quality is also a major issue. It has the problem of arsenic and fluoride contamination along with more percentage of iron in water in several parts of the state. Many peoples are suffering from fluorosis, a crippling disease, drinking fluoride contaminated water.

Jharkhand accounts for 37% of the national mineral resources. It accounts for 29% of national iron ore reserve, bauxite bearing plateau covers 190 sq. km, while the state has 72204.11 Million Tones of coal reserves (Deptt. of Mines and Geology, GoJ). According to a report by TERI in the year 1999-2000, 300MT of coal production resulted in degradation of 7500 ha of land. We are staring at a proposition of more than 18lakh ha under degradation, and if we add to it the degradation due to other minerals the picture becomes very alarming. These mining and industrial units pollute streams and rivers. Toxic substances carried by rain water into nearby water courses, alters their chemistry and often makes the water unfit for human use. By locating mineral treatment facilities near the mines, water pollution problems get worse.

The large scale mining operations going on in the region have adversely affected groundwater table in many areas with the result that yield of water from the wells of adjoining villages has drastically reduced. Further, effluents discharged from mine sites have seriously polluted the streams and under groundwater of the area. Acid mine drainage, liquid effluents from coal handling plants, colliery workshops and mine sites and suspended solids from coal washeries have caused serious water pollution in the region, adversely affecting fish and aquatic life.

Damodar and Subernrekha river valley are the major river basins of the state on side of which most of the mines and industrial setups are existing. **About 130 million litres of industrial effluents and 65 million litre of untreated domestic water find way to Damodar drainage system every day.** A study of the area showed that one coal washery alone was discharging about 45 tonnes of fine coal into the Damodar every day and there are as many as eleven coal washeries in the region with an installed capacity of 20.52 million tones annually. Other major rivers of the region are also seriously polluted. The Karo river in the West Singhbhum is polluted with red oxide from the iron ore mines of Noamundi, Gua and Chiria. The Subernrekha shows a different type of pollution which is even more hazardous in nature. Metallic and dissolved toxic

[5] Ranchi municipal corporation

wastes from TISCO[6], Jamshedpur and HCL[7] Ghatsila and radioactive wastes from the uranium mill and tailings ponds of the uranium corporation of India limited at Jaduguda flow into Subernrekha and its tributaries.

The release of different toxic metals like arsenic, mercury, chromium, nickel etc. from the coals and mine spoil heaps in Damodar and its tributaries have caused severe damage to water quality. Continuous dewatering by underground mines also affects water resources. These mines annually pump out millions of litres to drain mine galleries and release it into nearby water courses. This has caused flooding, silting, water logging and pollution in the mining areas of Jharkhand. They have also reduced the surrounding water table, and also reduced the available groundwater.

The state has the history to struggle for water as the Damodar bachao abhiyan, Koel karo movement and several many more which is not yet noticed. These all needs to be noticed in course of discussion for need of a state level water policy.

The two day workshop is being held to revisit the issue of water, share the varying experiences and to identify role that civil society can play independently or in collaboration with state at the present juncture.

Reference:

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- *Richard H. Bryant, BA, PhD in PHYSICAL GEOGRAPHY Made Simple by Rupa & Co, New Delhi*
- *National Water Policy, Ministry of Water Resources 5 April 1, 2002*
- *What makes a local organisation robust ? Evidence from India and Nepal, Mary Hobley and Kishore Shah, Natural Resource Perspective , Number 11, July 1996 by Odi*
- *Participatory forest management and community initiatives by Nandini Sunder and Roger Jeffery*
- *Status of environment in chotanagpur-santhal pargana segment of Jharkhand by Uday Kumar, Kalpana Prasad and Binay Kumar*
- *Birsa Kisan Dainandani 2005, Directorate of Agriculture, Jharkhand*
- *Hemant, Talab Jharkhand, Tai Kitab , Delhi.*
- ***Concept paper on water for creation of state water forum by Pran Ranjan (SPWD's internal document)***
- ***http://www.americanchronicle.com/articles/79164 (IMPACT OF MINING AND INDUSTRIES IN JHARKHAND STATE, INDIA. Dr. Nitish Priyadarshi)***
- *http://jnnurm.nic.in/nurmudweb/cdp_apprep_pdf/CDP_Appraisals_CEPT/Ranchi_CEPT.pdf (Ranchi City development plan)*

[6] Tata Steel Company Ltd.
[7] Hindustan copper limited

Introduction of the workshop theme:

'Water' –A resources for survival in crisis (Jharkhand perspective):

Water status in Jharkhand in terms of use for Drinking, Agriculture, Mining, Industrial, recreational and others.

Different thematic panel discussion:

1. **Water in agriculture:** call Agriculture department, BAU, SPWD, PRADAN, and other organization, institution working for optimum utilization of water in agriculture (3 hrs.)

2. **Drinking Water and its Quality :** Unicef, PHED, Wateraid, etc.(2 hrs.)

3. **Water for industrial use:** Mining area and unused water, industries requirement of water and state's role. ….Tata steel, Jindal, Rungta etc.. (3 hrs.)

4. **Traditional Water harvesting systems**: An overview of existing traditional water harvesting systems

5. **Struggle around water:** Koel Karo, Putki..etc..Meghnat ji may play introductory role. Some other people (2 hrs.)

6. **Concluding Session :** Jharkhand State water policy (Draft) vis a vis Future action

Consultation Programme Schedule

DAY- 1 (04-12-2008)

10:00 A.M	Registration
10:30 A.M	Welcome address by Executive Director, IGSSS Inaugural address by SR,IGSSS-Jharkhand Self Introduction by the participants
11:00 A.M-11: 25 A.M	Overview of the consultation – SPWD, Eastern region
11:25 A.M – 11:40 A.M	Tea
11:40 A.M – 1:30 P.M	**Water in Agriculture**
SPEAKERS:	*1. Prof. Ratan- BAU, Kanke Ranchi,* *2. Prof. Uday – RU,* *3. Mr. P R Chowdhry – Orissa* *4. Prof. S. P Sinha – SHRMS* *5. Mr. Mansa Ram SEVABRATA, Purulia, W.B*
1:30 P.M – 2:30 P.M	LUNCH
2:30 P.M- 4:00 P.M	**WATER AND LIVELIHOODS**
SPEAKERS:	*1. Mr. P R Chowdhry – Orissa* *2. Ms. Anita – SBA / LJK, Madhupur* *3.Mr .H. R Prakash, ARTIC,Srikakulam*
4:00 P.M – 4:15 P.M	Tea
4:15 P.M – 5: 30 P.M	**FOREST AND LIVELIHOODS**
SPEAKERS:	*1. Mr. A. K Mishra, CCF Planning, FD, GOJ* *2. Dr. SMS Quli, BAU, Ranchi* *3. Mr. Nihar, Vasundhra, BBRR, Orissa*

DAY – 2 (13-09-06)

10:00 A.M – 11:15 A.M	**LOCAL GOVERNANCE AND ACCESS TO NATURAL RESOURCES**
SPEAKERS:	*1. Dr. Himadri Sinha, XISS, Ranchi* *2. Prof. Ramesh Sharan, RU, Ranchi* *3. Dr. Neeraj, Sathee, Godda*
11: 15 A.M –11:30 A.M	Tea
11:30 A.M – 1:00 P.M	-continued-
1:00 P.M - 2: 00 P.M	LUNCH
2:00 P.M – 2:50 P.M	CONCLUDING SESSION
2:50 P.M – 3:00 P.M	Vote of thanks
3: 00 P.M	TEA

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