A Study on the Impact of Constructing Dams across the River Ganga

Ajay Veer Pundir[1] Dr. Seema Mahlawat[2]

[1]Research Scholar

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INTRODUCTION

India is endowed with rich water resources. Approximately 45,000 km long riverine systems criss-cross the length and breadth of the country. Major 46 medium river basins extending over the states of

Uttarakhand, Uttar Pradesh, Haryana, Himachal Pradesh, Delhi, Bihar, Jharkhand, Rajasthan, Madhya Pradesh, Chhattisgarh and West Bengal.

Rapidly increasing population, rising standards of living and exponential growth of industrialization and urbanization have exposed the water resources, in general, and rivers, in particular, to various forms of degradation. Many Indian rivers, including the Ganga in several stretches, particularly during lean flows, have become unfit even for bathing. Realizing that the rivers of the country were in a serious state of degradation, a beginning towards their restoration was made with the launching of the Ganga Action Plan (GAP) in 1985.

Ganga drains a basin of extraordinary variation in altitude, climate, land use and cropping pattern. Ganga has been a cradle of human civilization since time immemorial. It is one of the most sacred rivers in the world and is deeply revered by the people of this country The Ganga basin lies between East longitudes 73°30 and 89° 0 and North latitudes of 22°30 and 31°30, covering an area of 1,086,000 sq km, extending over India, Nepal and Bangladesh. It has a catchment area of 8,61,404 sq. km in India, constituting 26% of the country's land mass and supporting about 43% of population (448.3 million as per 2001 census).

December e potential of s, particularly in the stretch between Kannauj and Allahbad Ganga has many tributaries, both in the Himalayan region before it enters the plains at Haridwar and further downstream before its confluence with the Bay of Bengal -May are the lean flow months. The surface water resource Ganga has been assessed as 525 billion cubic meters (BCM). Substantial abstraction of water for various purposes including irrigation, power generation and drinking water has impacted the quantity of flows in the river.

The Ganga Action Plan was launched in 1985 with the objective of pollution abatement to improve the water quality in the river. The programme included 261 schemes spread over 25 Class I towns of U.P., Bihar and West Bengal. The main focus of the Plan was on Interception & Diversion and treatment of sewage generated from these identified towns.

Sewage Treatment Plants (STPs) with a treatment capacity of 869 mild have been set up under the Plan. GAP I was completed in March 2000 at a cost of Rs. 452 crores.

GAP II was started in 1993. It covers 59 towns located along the river in the five states of Uttarakhand, U.P, Jharkhand, Bihar and West Bengal. 319 schemes have been taken up under the Plan, out of which 200 have been completed.

An expenditure of Rs. 370.40 crore has been incurred so far and sewage treatment capacity of 130 mld has been created. GAP II was expanded in 1996 into the National River Conservation Plan (NRCP), which presently covers polluted stretches of 36 rivers in 20 States in the country.

The Ganga river water quality evaluated on the basis of pollution indicators (DO, BOD and coliform) indicates that dissolved oxygen levels have improved in the main stem of Ganga. The values are mostly above the recommended value of 5.0 mg/l, except in the stretch between Kannauj and Kanpur where values below 5.0 mg /l have been noticed on several occasions. BOD values are also within stipulated limits in the upper and lower reaches of the Ganga but tend to be higher than 5.0 mg /l in the middle stretch from Kannauj to Varanasi. This can be described as the critical stretch.

REVIEW OF RELATED LITERATURE

Diwakar Bhatt in press conference alleged that, “It may be

that the Central Intelligence Agency (CIA) of the US or Pakistan's Inter Service Intelligence (ISI) are behind these so-called anti-hydro projects in Uttarakhand, as by doing so they are hampering development of the state and ultimately of India. So by that way they are traitors and should be opposed by people too."

In Mid-June 2013, Dr. Agrawal began his fast in the wake of inactivity of National Ganga River Basin Authority. He stopped taking water on September 21 as his fast entered 101st day. Due to

Government's apathy towards Dr. Agrawal's fast, three members of National Ganga River Basin Authority, Rajendra Singh, Ravi Chopra and Rashid Siddiqui resigned.

Work on the Loharinag Pala Hydro Power Project was stopped when Dr. Agrawal came close to dying on the 38th day of his fast in protest of the harnessing of the river Bhagirathi. In a letter dated 19

February 2009 to Dr. G.D. Agrawal, the Ministry of Power stated that it had ordered immediate suspension of work on the Loharinag-Pala Hydropower Project on the Bhagirathi River. In response Dr. Agrawal ended his fast the next morning at 11:00 am.

The Indian government agreed to speed up its inquiry into how electricity could be generated without the flow of the Ganges being impeded.

Dr. Agrawal's devotion to the River Ganges comes from his strong Hindu faith and his conviction that India is staring at an unprecedented ecological and cultural catastrophe. As a citizen and a patriot, he has made it his life's mission to recall India to its traditional reverence for nature and to share that wisdom with the "developed" world. His sense of duty allows him to do no less.

His campaign was taken up by leaders of the opposition party who called for stopping all dam constructions upstream of the river. The

Government of India was quick to commit itself to ensuring perennial environmentally acceptable flows throughout the river and also informing Dr. Agarwal of the same. The Government then went a step ahead and declared the Ganges a National River and set up the National Ganga River Basin Authority (NGRBA) as an empowered planning, implementing and monitoring authority for the Ganges.

On 4 November 2009 in New Delhi, Prime Minister Manmohan Singh, also the chairman of NGRBA, directed concerned officials to expedite setting up of a National Ganges River Basin Research Institute (NGRBRI). The Centre for Environmental Studies and Technology (CEST), Banaras Hindu University was named as the research institute to act as knowledge centre for collection and analysis of all relevant data regarding the Ganges basin.

RESEARCH METHODOLOGY

In order to identify the actual instances of lacunas in the policy instruments, in the performance of the government agencies and the misalignments in Norms and Interests, diverse methods could be employed. To map the institutional structure, the study is restricted to a review of policy documents and existing body of academic knowledge on these issues. To distil the critical perspectives on the EC process, a range of stakeholders ranging from government officials, NGO workers, social activists and local people were interviewed in the Upper Ganga Basin.

A brief review of significance of river Ganga, hydropower development on Ganga and consequences of this development is presented as follows.

The 2,510 km long river Ganga originating from the *Gangotri* in the Himalayas in the state of Uttarakhand drains through one million square kilometers before emptying in the Bay of Bengal (NGRBA, 2011).

Concepts of EIA includes the assessment of alternatives for the proposed activities and negative environmental impacts should be assessed for each of these alternatives. The alternatives should be assessed comparatively and the least negative impact ones must be selected and approved. Present EIAs do not consider this notion.

In order to reduce, mitigate and manage negative environmental impacts, it is mandatory for project proponent to prepare and implement an Environmental Management Plan (EMP) suggesting precautionary measures and mitigation plan in detail and it must be approved by MoEF (MoEF, 2010a). However, proponent takes onus of neither implementing one"s own plan, nor to evaluate the efficacy of its implementation which is generally done by the Forest Department with finance received from the proponent. Even if an EMP is implemented effectively it is not adequate because of the conceptual shortfalls in it. For instance, definition of a Catchment Area is ill-defined in the case of Catchment Area Treatment (CAT) plan which are integral part of EMP and then there are issues regarding the fund and work allocation.

People must be made aware about the importance and modalities of public hearing since informed participation plays a critical role. Because people are not formally introduced to the process, and the significance of public hearings and expectations, it finally becomes a bone of contention between many groups.

The EIA Notification has laid down the detailed procedure for providing necessary information (like date, time and venue of the meeting, summery of DPR and EIA-EMP reports) in local language well before the date of the meeting. However, though these provisions are not violated per say, are not also followed to meet the desired end of the study and to encourage them to participate in the debate by ensuring an open, democratic process whereby their concerns are respected. In other words, participation is manipulated, if not neglected.

DATA ANALYSIS

The Central Government may by notification in the Official Gazette, appoint or recognise such persons as it thinks fit and having the prescribed qualifications to be Government Analysts for the purpose of analysis of samples of air, water, soil or other substance sent for analysis to any environmental laboratory established or recognized under sub-section (1) of section 12.

Any document purporting to be a report signed by a Government analyst may be used as evidence of the facts stated therein in any proceeding under this Act.

(1) Whoever fails to comply with or contravenes any of the provisions of this Act, or the rules made or orders or directions issued thereunder, shall, in respect of each such failure or contravention, be punishable with imprisonment for a term which may extend to five years with fine which may extend to one lakh rupees, or with both, and in case the failure or contravention continues, with additional fine which may extend to five thousand rupees for every day during which such failure or contravention continues after the conviction for the first such failure or contravention.

CONCLUSION

The Environment (Protection) Act is the most comprehensive law on the subject. The law grants power to the Central Government to take all measures necessary to protect and improve the quality of environment and to prevent pollution of the environment.

In terms of responsibilities, the Act and the associated Rules requires for obtaining environmental clearances for specific types of new/expansion projects (addressed under Environmental Impact Assessment Notification, 14th September 2006) and for submission of an environmental statement to the State Pollution Control Board annually.

As per the EIA Notification, 14th September 2006, new projects or activities require Prior Environmental Clearance. Projects have been grouped under Category „A" requiring clearance from Expert Appraisal Committee (EAC) of MoEF, GoI and Category „B" requiring clearance from the State Expert Appraisal Committee (SEAC). All hydropower projects with more than or equal 50 MW capacity and/or 10,000 ha of culturable command area come under

"Category A". Projects less than 50 MW capacity but more than or equal 25 MW capacity and loss than 10,000 ha of culturable command area come under "Category B".

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