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Intrastate Hydro Politics: Issues of Hydro Resource Management in India

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ABSTRACT

This article addresses the intrastate hydro issues and conflicts in India. With the advancement of industrial development, the issue of hydro resource sharing and acquisition has emerged as a major issue in the country. Presently Indian states are facing serious disputes over the hydro resource sharing formulas and construction of mega water reservoirs over the shared water resources. Water deprivation has even compelled some states to demand for themselves a separate state, causing alienation from the Indian federation. This article strives to look into the parameters adopted by the federal government of India for resolution of the issues. It also investigates how India has been unable to adopt and devise a permanent hydro management policy. The expert view opines that if the grim hydro management situation is not addressed properly it may lead to water scarcity and consequent deteriorated internal political scenario. This article suggests that this issue can be resolved through viable hydro management strategies that involve all stakeholders with a positive purpose to satisfy each one of them. Ultimately, it is suggested that unless India improves its water sharing mechanisms with the neighboring countries, the internal strategies to resolve the issue would go in vain.

Keywords: *hydro resource management, water scarcity, intrastate water disputes, hydro policy of India, Water Tribunals, IRWD Act.*

Introduction

Federalism is an indestructible part of the constitution of India. Cooperation and coordination of Centre and States of India is the gist of federalism. Institutions of the Centre and States are required to exercise their respective powers with mutual consent, understanding and accommodation. There is no denial of the fact that

conflict and clashes of interest of both Centre and the federating units are inseparable part of the entire scheme of the federalism. It is equally necessary to develop the mechanism of amelioration and settlement of the expected conflicts. The framers of the constitution were well aware of stark industrial and economic disparities in many areas of the country; hence they devised federalism with a strong Centre. In this way Centre occupied a vital position in conflict resolution mechanism between and among the states. The target of viable socio-economic revolution in the country was asking for such federalist parameters in the constitution.

Presently there is an environment economic competitiveness among all the states for the funds allocation and establishment of mega projects which consequently could not only generate revenue for the state but also produce jobs for the people of that very state. As industry has become part and parcel of the development, it therefore has become a necessity that one finds areas where power, infrastructure and water is easily available. This very fact breeds animosity and competition among the states which pose a major challenge to the spirit of federalism.

Water is an indispensable necessity for the establishment of almost all industries. Among other shared resources, water has occupied a central position, especially in India which has about thirty major rivers and their tributaries. In a way almost every state has one or more rivers flowing in between states. In such a situation arising of water disputes is a natural phenomenon. Unless there is impressive water management mechanism, these intrastate disputes will keep on emerging. Water beds have their own formation and issues of upper and lower riparian. Rights of upper riparian are extensive than those of lower riparian states which refers to the core concept of Marxian thought of have and have not's (Ingram, 1982). In the wake of industrial economy formation incessant availability of water has become an inevitable and decisive factor.

Increasing hydro function in the industry as well as agriculture has increased its significance and possession along with other means of production. This very fact has made hydro resources fulcrum of controversy and politics. There is a long history of hydro politics and consequent conflicts. The history of South Asia is fraught with the hydro politics and resultant conflicts. The earliest well known water issue is known as *Goutama Buddar Kappiyam*. This conflict was over Rohini River between Sakyan and Koliyan clans. It is believed that this conflict made Budha leave his home (Mehta, 2012). Second important instance is the abandoning of the construction of Akbar's dream city Fatehpur Sikri during the 16th century and also due to the scarcity of water resources (Oudshoom, 1997). Likewise, water sharing issue of River Kaveri between Madras and Mysore is centuries old. Ultimately, the British authorities had to intervene in the matter and they facilitated water sharing treaty between two side once in 1881 and then in 1924. The water sharing issue between two sides, madras and Mysore again arose in 1956 which even the establishment of tribunals could not effectively resolve. In the same way it is believed that Teesta and Ganges water issue between India and Bangladesh has its roots in the colonial era (Biktamdit De, 2012).

Indian constitution contains the provisions for the creation of new states on linguistic basis. When these new states are formed, they are usually involved in the controversies of resource sharing and hydro resources are the most prominent among them. Hydro resource controversies are generated on two distinct grounds.

Intrastate Hydro Politics: Issues of Hydro Resource Management in India

The first issue relates to consent; the upper riparian states build water reservoirs without seeking consent of the lower riparian states. The second concerns sharing mechanism; hydro resource sharing mechanism and quota allocation among the states. These conflicts are becoming intense with every passing phase of industrial development, in India. The conflict mechanism between and among the federating units of India predominantly depends on the behavior of the concerned states over the issue. This very factor is making hydro resource management an extremely challenging issue in the country.

Apart from managerial issue there are several other subsidiary hydro sector related issues like ground water depletion, water pollution and waste dumping in the waters (rivers and oceans), overuse and storage is creating alarming situation for the overall environment in the country (Pattanayak, 2015). Numerous dams constructed in the recent times have seriously contributed to environmental degeneration, in India (Cain, 2014).

Rapid Industrialization and Urbanization

Indian governments have failed to control the immensely increasing population, despite their massive population control campaigns and measures. Initially, at the time of independence in 1947, according to the UN statistics, the population of India was about 330 million, however, at present, as of 2019, it has reached up to 1,368 billion. It is anticipated that India is going to leave China behind, in population ratio within 3-4 years. It can also be observed that this increased population has been up-surging the water consumption demand per capita, particularly with the increased urbanization as well as middle class families. Furthermore, in 1985, middle class was comprised by nearly 10% of the Indian population, nevertheless, by 2030, it is estimated that 70-90 million families would be the part of Indian middle class society. Besides, half of the people will be residing in Indian urban areas. This massive population growth, effects the economic development which has implications on national dietary habits; like increased consumption of fruits, vegetables, meat, poultry, milk and fish than past.

Moreover, rapidly expanding urban dwellings and cities have continuously been putting pressure on the hydro-supply lanes (water supply) in these cities. Particularly, in the summer season, in these areas the water demand is quadrupled, because of which the states are continuously facing public pressure.

In many state and cities, the scarcity of drinking water has been transformed into severe crisis due to which a number of state governments have been facing criticism and have lost popular vote (Singh, 2014). Though, many states have included private corporations, in order to overcome water scarcity, in urban areas, yet the results are not promising and states have not succeeded in achieving the set goals of drinking water (safe) provision to its citizens. Most of the water utilities own huge distribution and transmissions losses (up to 50%) or are financially bankrupt. It has also been estimated, that during transmission or distribution, usually 50-40% of safe drinking water is wasted in New Delhi (Asthana, 2008).

Increasing drinking water degradation is another serious issue. In the whole of India, river water was not drinkable. Though, to improve the situation numerous water-cleaning projects have been inaugurated and acted up, yet, no commendable improvement has been observed (Shah, 2004). Another chief cause of water

pollution is religious usage of water. Statistics of water usage in industry and household is not available. Scientific researchers have frequently reported of toxic crops and water.

In India, water is contaminated and more than 5 million Indians are more likely to consume water with higher concentrations of arsenic (over 50 ug/l-greater than national standard) (Mehta, 2012). For this water pollution clean-up, governments have spent millions, but no remarkable changes have been made. Thus, another serious issue is water quality because of non-systematic sewerage treatment. Water waste treatment of domestic and industrial water has not been accomplished. In addition, pesticide and fertilization are also among the chief causes of water pollution. A huge quantity of waste water (untreated) is incorporated in rivers and lakes which pollute both ground and surface water instigating serious lethal health problems throughout the state. Therefore, to some extent, every river is polluted (contaminated). The dangerous combination of industrial effluents, sewage disposals, arsenic fluoride, and farm runoffs' chemicals has rendered water bodies (Indian rivers) unsuitable for irrigation, drinking and even for the industrial usage.

Additionally, it has been reported that nearly 4.6 billion people are affected from diarrhea (water-related disease) and almost 2 lakhs Indian population dies, because of polluted water-related diseases, every year¹.

The other key reasons of water pollution include unhygienic handling, obsolete infrastructure, agricultural runoff, and inclusion of animal and human faeces through the leaked pipelines (Mehta, 2012). Although, Indian government has set the national water standard in accordance with the international set water standard, yet conducive outcomes haven't been received yet.

The economic development has added more fuel to fire as industrial development has accelerated both the water demand along with generation of waste water. Besides, products manufacturing, infrastructure construction, and power-production process has increased the continuous and stable demand of water. Water is extensively used in India for the cooling functions in power-generating sources. In India, hydro-electricity has accounted for 19.3 percent².

Agricultural Water Usage

Being an agricultural state, India is under immense pressure to render sufficient food for its increasing population. In order to foster agricultural production, smooth and swift water supply has been a strong focus of state policy makers. In India, major water sources include ground water, watersheds, water tanks, dams, rivers and rainfalls. Internationally, India possesses the biggest irrigation structure and is one of the largest ground-water user's. India seeks to use ground-water more than USA and China, which is nearly 25 percent (230 Cu km per annum) of the global ground water³. However, the used ground-water has also been instigating agricultural problems. Water contamination by fertilizers and pesticides, lack of power

¹ www.ias.ac.in/

² www.governancenow.com/view/think-tanks/indian-cities-waste-almost-45pc-their-water-supplyI

³ www.worldbank.org

Intrastate Hydro Politics: Issues of Hydro Resource Management in India

generation (electricity) according to demand, rapidly reducing ground water, and depleting water reservoirs are some of the key issues (Bharwada & Mahajan, 2002).

At present, over half of under-cultivation is still being irrigated through the rainfall (Ashok, Gulhati & Banerjee, 2016). Climate change has been altering the pattern and ratio of rainfall. For instance, South Pennar and Brahmaputra basin have lowest per capita water availability, which tended to provide for the highest water ratio previously. The quality of rain, moreover, has also been falling⁴.

In the post-independence era, rapid construction of dams', policy of low electricity price for agricultural use has reduced the usage of electric wells for the extraction of ground-water particularly in Haryana and Punjab. For water provision, ground water is the safest and easiest way throughout the year. However, the basic problem is that the extraction of ground water took place without considering the safety of environment and water reservoirs (underground) (Spade, 1994). At present, the water level (underground) had been decreasing at an alarming rate, particularly in the Indian province of Punjab. In Punjab, in 2013, threatening ground-water depletion has been noticed (Kulkarni & Shah, 2013).

The Power Production Projects

The electricity demand in India surpasses its national production, mainly because of the expanding urban middle class and increased economic development. Therefore, for the smooth provision of water to the canals (water bodies) and power generation, dam is sought to be the cheapest solution (Naryanamorthy, 2013). In this regard, nearly, 477 dam projects are under execution and a large number of ambitious power projects are under consideration. Most of these, water-reservoirs are either between India and its neighbors or controversial between downstream and upstream states. A mega-project of Indian Rivers InterLink Canals is going to inter-connect thirty Indian rivers through a huge civil engineering project of dams and canals. This project is aspired to transfer water from the flooded areas to the water-scarce areas. Some states, nonetheless, have been refusing and resisting to complete their respective part chiefly because of the destruction and extinction of historical places, and issues of massive migration (Mary, 2006).

According to the World Bank official statistics (June 2005), the river irrigation performance is poorest. The water economy of India has been bracing for an unstable future due to maintenance of the water-stock resources, replacement cost and irrigation infrastructure by nearly USD4 billion per annum which is just about two-times the yearly capital budget in a 5-year plan⁵.

International Water Management Institute, in 2006, has reported that the performance of the canal irrigation has been decreasing, as the water reservoirs across the country have been silting up. Same cases are also being reported about canals and other water bodies. These all statistics explicitly indicate the poor water management of India. Indian Media reports and study not only endorsed such reports, but has also highlighted that water is one of the major sources of corruption.

Intrastate Hydro Resource Sharing Disputes

⁴ <http://pib.nic/newssite/erelease-www.indianwaterportal.org.image/6209>.

⁵ www.worldbank.org

Gulati and Banerjee (2016) has stated in 2014 and 2015 that India has faced severe drought. During this period, Marathwada region of Maharashtra was severely affected, particularly Latur district. Water reservoirs decreased to less than 6 percent, when the regional situation became extremely serious, then Central government had to enforce Section 144. "Special trains" containing water were transported to the district. It was requested by the High Court to issue verdict about the non-conduction of IPL matches in Maharashtra for water saving purpose. That drought attempted to hit nearly 250 out of 678 Indian districts, which constituted nearly 37 percent of the net districts (Naryanamorthy, 2013).

In monsoon and summer season, water becomes more crucial, as water demand increases by many folds. That's why when local administrations failed to deliver sufficient water, more criticism is turned onto the Federal government. Increasing media influencers tend to use this opportunity for agenda setting. Mostly, protests are staged against the upstream states and central government. Opposition parties exploit such situation to enhance their popularity among people. In order to control such situation, government consults the policy makers and experts for their advice, who in turn term state "water scarcity," as the leading cause for problems concerning water. Now the question is, Is India really a water scarce state?

Numerous technical experts and scholars have claimed that in India, water crisis among the Central government and its states is because of water scarcity. But, there is a clear difference between water scarcity and water stress. Water stress is a condition, when a state's yearly water supply is less than 1700 cubic meters per person. A country becomes water stressed, when the supply of water is between 1000 to 1700 cubic meter per person. Besides, when the supply of water is reduced from 1000 cubic meter per person then it is termed as water scarcity, which can also threaten the food production (Mehta 2012, Prhabu, 2012). Though, India isn't a water scarce state, but it is a water stressed country because of water mismanagement, disorganized planning and over and inefficient water usage. Neighboring states of India, like Pakistan, nevertheless, is becoming water scarce because of the Indian control of water as well as torrent water control. Unlimited extraction of ground water from the western areas near Pakistan's side of Punjab has been decreasing the level of ground water in Pakistan.

India, being a promptly developing state requires continuous and steady water supply for its agriculture, drinking, industrial and power usage. Countries are continuously under immense pressure, in democratic system, to deliver basic facilities and infrastructure for avoiding criticism both from the media and opposition, who do not let any country go for greater good. Any compromise is perceived as traitorous or defeat towards the state citizens. Thus, it has become a common norm from state governments not to compromise over any resolution of the water-sharing dispute.

Inter-state disputes over water allocation in India have stimulated many destructive actions, protests and violence. The water policy of Indian government has led to immense criticism, holding the stance that it is poor in nature. Inadequate water availability is criticized and mostly blames are laid upon one another. In present times, water disputes among states are the most serious and biggest challenges in India (Tortajada, Saklani, & Biswas, 2018). These challenges are perceived as a serious threat and obstacle to economic development and social solidarity of New

Intrastate Hydro Politics: Issues of Hydro Resource Management in India

Delhi. Media and politicians employ water issue to blame federal government and states. State governments exploit water-related issues against the Central government. Contrarily, federal government is blamed for using water-tribunal verdicts against the opposing state governments. Political scholars and experts, from a long time, have been stimulating the Central government to make advance legislation and utilize water as an instrument of national wealth.

Inter-State Council (ISC)

Under Article 263, in 1990, an Inter State Council was created, as a constitutional body in order to deliver a platform for resolving or discussing disputes among the states within a particular time framework. Prime Minister and Chief Ministers of the states are members of this council. However, regular meetings of Inter State Council were also held. The present Modi government, under its cooperative federalism slogan (motivated from United States model) has targeted improvement in its performance at sub-national level deciding to activate ISC. In 2016, a meeting was conducted and in May 2018, the 16th meeting was held, indicating Modi's commitment towards the ISC. States have been contesting over investment opportunities, consequently, funding pattern have been changed; as now states enjoy higher autonomy in formulating their respective development programs.

The 14th Finance Commission report has suggested the increment in share in taxes from 32 percent to 42 percent from Federal funds to state funds, providing greater fiscal autonomy to states. This autonomy has given little opportunity to states accusing the Central government for their weak performance or negligence. States have been competing in programs like Rashtriya Krishi Vikas Yojna (RKVY) or National Agricultural Development Scheme and Smart City etc. The central aspect of these schemes is that the Central government gives Central assistance, if a state successfully increases or maintains the percentage of its agricultural sector or other related sectors. The feature of developed infrastructure can also attract funding from the federal government as well as from private sector. This continuous development, nevertheless, has kept for increasing the intensity of water rivalry among the states.

Role of Federal Government in Hydro Management Disputes

Federal government has been under greater criticism, because of the highly intensified Inter-state water conflicts. In 2012, Prabhu has commented that the inconsistent water policy has made it difficult to execute a holistic policy in New Delhi. However, it is observed that it has been serving both the national as well as international Indian interests. Against the central government, explicit grievances have not risen yet. According to the Constitution of India, states are responsible for dealing with their water issues, on their own. But, Federal government does own a mandate and is constitutionally responsible to settle the inter-state disputes, which arise from the use of water of inter-state rivers.

The Central government has set up numerous departments to render the technical support for mega-projects in navigation, irrigation, drinking water and power generation. Nearly, at Central level, there are 11 water-related institutions named commissions, boards, departments, and ministries. On water issues, commissions are tended to make jurisdictions such as Central Groundwater Authority, and Central Water Commission (CWC). Besides, all the state governments have similar

departments at the state level as well, like, minor irrigation, department for drinking water, environment monitoring and hydropower projects departments.

The Constitution of India has acknowledged the water as a state object, nevertheless, the Central government, in the public interest can work in collaboration with the states to enhance the quality, quantity and availability of water. Therefore, it has created several departments and ministries to deal with different water-related fields. In India, a general opinion prevails, that no such mechanism exists in India, which could deliver an efficient and permanent resolution of water issues among the disputed states. Article 262, of the Indian Constitution renders opportunity to disputed states to do some homework on their own before entering in any adjudication procedure under the IRWD Act, which was passed by the Indian Parliament in 1956. This Act advocates that if two disputed parties failed to resolve the conflict between themselves, then federal government is supposed to set up a tribunal to resolve the matter. This procedure is separate for every individual case, instead of a permanent guide for every case as a whole. On the other hand, water-related treaties with other neighboring states needs ratification from the Parliament of India.

Tribunals tend to take a lengthy time framework, during which the disputed parties went on a return-stage. Moreover, Biswas (2018) has criticized the tribunal approach, holding that it tends to intensify the state rivalries, as it has failed to yield a long term and sustainable solution. In most of the cases, tribunals have failed to settle the water disputes. They are operationally inconsistent and ambiguous, whereas issues require logical and uniform decisions to be welcomed and accepted. Tribunals, sometimes, worked against the international norms or sometime against the previously given verdicts by other inter-state tribunals on the same water issues with the same disputed parties, therefore, leaving disputed parties unsatisfied. Effected parties often tend to demonstrate their impartiality suspicions of Award and fairness or rationale of trail.

Critics hold that under Article 262-3, the tribunals do not have enough capacity to manage the complexities of new state-parties as well as their claims. In case of emergence of new states from Uttar Pradesh carving out, then tribunals would have to settle more cases related to the water allocation of Ganges River among downstream, upstream and non-riparian states.

The Water Policy of Indian Government

Ministry of Water Recourse, in 1980 has commenced an “Inter-Linking of River Water” for Development in the National Perspective. Environment Protection Act, in 1986 has allowed for continuation of the Inter-Link project. However, the critics held that rivers had not that surplus water, that’s why it would be a waste of resources to implement the project. West Bengal, Assam, Chandigarh, Goa, Bihar, Kerala, and Punjab do not support it, holding that it is against their own state interest. Whereas, Madhya Pradesh, Tamil Nadu, Haryana, and Rajasthan are supportive of this act (Cullet & Gupta, 2009).

In 1987, the first water policy of India was introduced by the Union Ministry of Water Resources. It was revised two times, first in 2002, and then in 2012. It was decided, in 2012, to use water as an economic good. It is also planned to better the quality, effective usage and efficiency of water. The privatization of water supply,

Intrastate Hydro Politics: Issues of Hydro Resource Management in India

particularly, in the drinking water field was encouraged as well. Critics, however, claimed that it was not proved successful. Later on, it is emphasized that, instead of economic commodity, water should be used as a social welfare product (Narasiman & Gaur, 2010). The policy was ambiguous and did not envisage the clear rules for the water commercial use, particularly about ground-water, which has continuously been depleting (Levermann et al, 2009). In 2012, many states didn't endorse the new policy.

Constitutional Status of Water Dealing

The competition over water development projects has intensified the contention among the downstream and upstream states (Lachman et al, 2016). Currently, the focus of water management is exerted on effective water management. Water conservation is viewed as a most reliable and wise option, but, this act decreases the flow of water to the downstream states, which accuse that all of their water issues are because of low flow of water. In the Indian Constitution of 1949, water has been made a state subject. It has also been reinforced in the 7th Schedule of constitution (under the II State List). If the two disputed states have differences and could not reach on a mutual consensus, then Article 131 facilitates the Apex court to resolve the issue between both states. In 1965, nevertheless, parliament passed the Inter-State Water Dispute Act, which entitled the federal government, under Article 262 to establish the tribunal to settle issue between disputing parties.

Inter-State River Water Dispute Tribunals (IRWD)

The Tribunals were established to deal with these water cases. Three tribunals were created in 1969, to settle inter-state water disputes over the Beas, Ravi, Narmada, Krishna and Godavari waters. However, it should be considered that this tribunal approach did not prove successful, only three above-mentioned Awards could be concluded, rest of the Awards are still in process. Under the IRWD Act (1956), the following tribunals were established.

Godavari Water Dispute Tribunal

The tribunal was established in 1969 to settle the water dispute of Krishna and Godavari water dispute among the states of Madhya Pradesh, Andhra Pradesh, Maharashtra, Karnataka and Orissa. A large number of small and large dams are built on these rivers by the disputed states. After 11 years, in 1980, the tribunal has given the award. Nevertheless, the disputed parties were not satisfied. Media and opposition criticized the Central government and accused the ruling party for selling the state interest. Instead of resolving the dispute, it has created more resentment.

Krishna Water Dispute Tribunal I

This tribunal was established in 1969 to settle the water dispute over the water usage of Krishna River among undivided Maharashtra, Karnataka, and Andhra Pradesh. In 1976, the Tribunal Award was given. It has yielded similar results like Godavari Dispute. After the Telangana separation from Andhra Pradesh, it started to contest with its mother state over the division of resources, which still continues. Later on, again a new tribunal was made.

Narmada Water Dispute Tribunal

In 1969, the tribunal was established to resolve the quota for Madhya Pradesh, Gujarat, Maharashtra and Rajasthan. Rajasthan was a non-riparian state, but it was rewarded a share of water from the Sardar Sarovar Dam, which was not welcomed by others. In 1979, the Award was rewarded, yet the state parties perceived it as a form of exploitation.

Ravi & Beas Water Dispute Tribunal

The water dispute took place among Rajasthan, Punjab and Haryana over the water division of Beas and Ravi water. In this dispute, the state of Punjab did not agree to share water with Rajasthan (a non-riparian state). Initially, the dispute was between Punjab and Rajasthan, but after Haryana's separation from Punjab, the issue was exacerbated. In 1986, therefore, a tribunal was established. In this case, the Award, ironically, was quick and in 1987, it was awarded. But, Punjab reacted exceptionally and it filed a legal petition for the explanation and clarification of the Reward. In the Apex Court, a Presidential Reference was included as well. In 1986, Ravi-Beas Tribunal was also set-up to resolve the water share of Rajasthan, Haryana, and Punjab. In 1987, Tribunal reported that the government of Punjab under Punjab Termination of Agreement Act (PTAA) released the central government from its legal obligations under 1981 agreement. The Government of India has considered this act against the Constitution of India⁶.

Cauvery Water Dispute Tribunal

During 1990's, this tribunal was constituted to explain the water quota among Karnataka, Kerala, Tamil Nadu, and Pondicherry. All these states are against dam making by the up-stream states, since, it drastically has reduced the significant portion of water for the downstream states. In 2007, Award was presented, yet, the disputed state-parties have filed a petition in the Apex court.

Krishna Water Dispute Tribunal II

In 2004, the Tribunal was set up to settle the issue of Water quota from the River Krishna among Chhattisgarh, Orissa, Andhra Pradesh, Telangana Maharashtra, and Maharashtra. First decision was given in 2010. As usual, it was not welcomed by the disputed states. In 2011, Supreme Court has banned the publication of Award, by holding the stance that an official complaint (application) was already submitted in the Apex court.

The time frame of Krishna Tribunal II was expanded for 2 years, and then further extended for one year. In Supreme Court, the Telangana government filed a petition and the issue is still under consideration.

Vansadhara Water Dispute Tribunal

A tribunal, in 2010, was established to resolve the water dispute between Andhra Pradesh and Orissa related to the Vansadhara River. This tribunal became

⁶ Business Standard, May14, 2016 www.business-standard.com/article/opinion/india/-facing-its-worst-water-crisis-ever-himanshu-thakkar-1160514007041.html

Intrastate Hydro Politics: Issues of Hydro Resource Management in India

controversial, when disputed state-parties accused the impartiality of the tribunal members. The preliminary judgment has come out in 2013, but, it faced immense criticism and the next verdict is yet to come. In 2014, Orissa has filed a Special Leave to Appeal, henceforth, the decision has not been taken yet.

Mahadayi Water Dispute Tribunal

Severe differences have emerged among the Goa, Maharashtra, and Karnataka over the water control and usage of Mahadayi water. A tribunal was made in 2010, to settle the issues among the disputed parties. Karnataka state, in 2002, has obtained the permission from the Central government to construct Kalasa-Banduri Nala to upgrade the supply of safe drinking water to its chief three districts, but, this initiative could badly affect the water flow to Goa, consequently, which began to challenge the project.

The Disputed Water Projects

It could be noted that most inter-state conflicts are over building the power generation projects, reservoirs, or changing the course of river flow. Every Tribunal has a long story behind it, of feelings of deprivation, victimization, and deceiving from the upstream and downstream states. On the other hand, upstream states felt that they are bullied and blackmailed by downstream states that created hindrances to stop their water project resulting in slowing down their progress.

Some of the examples of disputed projects are discussed below.

Kelo Project

At present, a tussle exists between Chhattisgarh and Orissa over Mahanadi. Being an up-stream state, Chhattisgarh has been building dam under “Kelo project”. Orissa, which is already a water-stressed state, aggrieved that before the initiation of the project, it was not consulted. Therefore, Orissa filed a case against Chhattisgarh in High Court, which directed both State governments and Union to state their work (efforts) over Mahandi “Bachao Munch campaign”⁷. All the political parties have exploited the issue in 2019 election campaign, but no productive solution has been concluded.

Dibang & Babhli Dams Project

In 2006, Dibang Dam project was planned in Arunachal Pradesh. This mega project is going to deliver hydro-electricity and huge storage for monsoon flood-waters (Brahmaputra) in Assam. In 2013 and 2014, State government has demonstrated its serious concerns, which have also been endorsed by the Forest Advisory Committee of Environment and both of them have rejected it because of its lethal effect of climate and ecological life in a biodiversity rich Himalaya region. In 2019, nevertheless, PM Modi’s cabinet has allocated funds for this project, which is going to be completed in the coming nine years.

Babhli Barrage is a disputed reservoir, which is made by Maharashtra government over Godavari River. If this barrage project was permitted to complete, then more than hundred and thousand acres of land of Telangana would become infertile and

⁷ Hindustan Times, August 16, 2016.

barren. Hence, the case has been taken to Supreme Court. Finally, the Apex court has given verdict in Maharashtra favor.

Sutlej Yuma Link Canal (SYL) Project

This project was designed to connect both rivers; however, the problem started in 1966, when Haryana and Punjab was carved out. Yuma River was automatically given to Haryana as it was situated in it. But, in 1976, when Congress government had given a ruling pertaining to shared water usage between both states, then Punjab didn't welcome it wholeheartedly. Haryana went to Supreme Court in 1979, and shortly, Punjab also challenged Haryana with another civil suit. Later on, these issues transformed into a full-fledged battle between both states. Punjab, in 2004, has opted a controversial approach and passed the legislation of Punjab Termination of Water Agreement (PTAA). It has passed another bill, "the Punjab Sutlej Yuma Link Canal (SYL) Canal (Rehabilitation and Re-vesting of Proprietary Rights) Bill" in the wake of increasing pressure from judiciary and central government for the completion of SYL Canal project. Both cases reveal that without paying any heed to violation of Indian constitution, both states could cross the limits for their bilateral issues and problems.

Issues and controversies over water have quadrupled the sense of anger and deprivation among the minority groups. Water issues might start states' balkanization in India, which are particularly significant for the human survival as well as economic development. In the present times, water has become an influential weapon. This fact is true in Ravi Beas case, where a conflict emerged between Punjab and Haryana across the Link Canal construction towards Haryana as an integral part of Inter-Link Canal Project. Punjab, on the other hand, has continuously been involved in a fight with Haryana on the issue of water allocation, both have emerged as immediate competitors. This dispute has far-reaching consequences on both states, since this dispute has been affecting the bilateral relations, provincial development as well as economic development.

Inter-State River Water Dispute Tribunal (Amendment 2002) Act 1956

In the wake of immense criticism over the Tribunal approach and their aspirations of reconsidering the old initiatives, federal government has opted to amend the Act. In 2002, Union government has amended the 1956 Act of IRWD Tribunals. After the award's publication in official gazette by a tribunal, it would have similar status as of any Supreme Court Decree. Although, the central government and tribunals are awarded more power because of this amendment, but it has failed to produce any productive change in water conflict resolution or tribunals' efficiency.

Furthermore, policy experts and scholars have continuously been suggesting that the central government should create a more sustainable approach to resolve the inter-state issues. In this regard, since its first term, Modi government has been working on the establishment of a permanent tribunal to replace the individual tribunals. In 2018, during the election campaign, BJP has also endorsed this statement.

Inter-State River Water Dispute Tribunal Act 1956 (Amendment 2019)

In the recent past, Indian Parliament has passed the Interstate River Water Disputes' Amendment Bill, 2019. On July 25th, 2019, the bill was introduced in Lok Sabha, and within five days it was passed on 31st July, 2019. The new amendment advocates

Intrastate Hydro Politics: Issues of Hydro Resource Management in India

that interstate water conflict shall be resolved through two methods under the amended act of ISWD (1956). Within a year of receiving complaint, state governments have to send request to the Central government to establish a water dispute tribunal for the adjudication. Then, the Union government will establish a Dispute Resolution Committee (DRC), which can be extended for six months. This DRC will have to submit its findings and report to the Central government in a given time period. If DRC failed to resolve the issue, then Central government will transfer the dispute (case) to the Inter-State Water Dispute Tribunal within 3 months of getting the report of DRC.

Another considerable change has taken place as well. Central government will make one tribunal but it will have many sub-branches⁸. The tribunal will compose of three judicial and three Expert, a vice chairperson and a Chairperson. The union government can employ two experts from the Central Water Engineering Service. Nonetheless, these experts wouldn't belong to any disputed parties. The allotted time will be two years, yet, if a state challenges or requests for reconsideration of the taken decision, then tribunal will submit report within a year. No provision of appeal will be included. The bill has bounded the Central government to authorize the agency to formulate an information system and a data bank to establish record for each basin at the national level.

This bill has also faced criticism, as local and regional political parties have perceived it as the centralization of powers. Associated lawyers (with disputes) have held that the chief problem is that, even after the tribunal verdict (award), the issue has been kept as a problem. Rivers forms a complete eco-system, whereas, tribunal viewed a river as a water channel. This approach failed to resolve the issue of both states and people. The efficacy of new amendment could be observed with the passage of time.

Dams Safety Act ,2019

Another bill for the “Dam Safety” has been presented by Prakash Javadekar (Minister for Environment) in 2019. He further held that this act would not only ensure the protection of existing dams, but also introduce the construction of 470 new dams. At present, India has nearly 5000 dams, after which, it would have 5,500 dams. This bill has also incorporated the instrumentation, annual maintenance and repaired funds, emergency action measures (plans), dams' inspection, and development of safety manuals for dams. The bill has provided for a uniform procedure and guideline, country wise.

Water Disputes and Dealing with Neighbors

In the contemporary era, India has water conflict over river-water sharing with nearly all neighboring states, Pakistan, Nepal, China, Bhutan and Bangladesh (Prabhu, 2012). In case of China; Bangladesh, and India, in case of Pakistan; Bangladesh are the lower riparian states. Water Supply relies on upstream infrastructure. Brahmaputra and Ganges Rivers originate from China. Besides, China has been building a dam in Tibet and till now no treaty has been signed between both states (Holslag, 2012). Previously, BJP was in opposition and it emphasized the Congress government (previous governing party) to ask Beijing for

⁸ Five tribunals established under 1956 Act will be dissolved.

compensation for using Brahmaputra water. On the other hand, Bangladesh is upset with India because of its national water policy, which has encouraged Farakha Barrage over Ganges and has also intensified Teesta River dispute. As compared to the national and natural requirement, India consumes more water, hence, because of increased level of water flow and lack of shared data (information) between both states has displeased Bangladesh, which is not only facing floods, but also has contaminated water (dangerous arsenic) for its population consumption. In 2012, Bikramadit Je has accused Bangladesh for its reluctant and cold attitude towards the Indian Barrages construction.

Pakistan, likewise, is a lower riparian state to India. Both states have signed Indus water Treaty with each other in 1960. This agreement has authorized Sutlej, Beas, and Ravi to India. However, Pakistan has been authorized with Indus, Jhelum and Chenab. India, nevertheless, has been continuously violating the Indus Water Treaty by building dams over Indus, Sutlej and Chenab rivers, which are reserved for Pakistan (downstream state), which is facing water scarcity at an alarming ratio.

Wullar Dam over Wullar lake (Jhelum), Salar Dam over Chenab, Baglihar, and Kishan Ganga, along with the other dams have been built without Pakistan's consent over the rivers, which was given to Pakistan according to the treaty (Baqai, 2005). After the construction of Indian dams, in 2011, water flow to Chenab has been decreased up to 40 percent. Pakistan's Terbella Dam, besides, has highly come under risk of water shortage as well as environmental security (Wang, Xu 2012).

Furthermore, Special Indian policy has been formulated to facilitate its people with electricity subsidy to utilize ground-water sparingly in the areas (states) along with Pakistan's borders has instigated severe decline in ground water in the Punjab province of both Pakistan and India. Near the Pakistani borders, the percentage of well-sinking is maximum as compared to the other Indian areas.

UJH Multipurpose Project

Indian PM Modi, during his election campaign rally in Haryana (15th, October 2019) has addressed that three rivers which are being flown in Pakistan, belong to the Indian farmers. He also argued that his government would not let Islamabad use a single water drop from Jhelum, Indus, and Chenab⁹. His government has already started to materialize this plan of action. In this regard, UJH Multipurpose Project is an initiative, aimed to stop the flow of water to the district of Narowal (Punjab-Pakistan), through 10 million water gallon for Kandi Belt. The dam is going to produce electricity of 196 megawatts and will store water (nearly 925 Cu m). This initiative will hardly leave any water to flow from Uch river into Pakistan (on completion).

Mahakali Treaty

India has convinced Bhutan for a joint venture to construct hydropower projects in Thimpu with its own investment and assistance, which have been generating nearly 25 percent of GDP through Indian paid royalty on electricity, Bhutan has been providing to it. Besides, in 1996, Nepal and India has signed a Mahakali Treaty for the mutual construction of three barrages and dams over Sharda River. Sharda River

⁹ Daily Jang Lahore 16 Oct, 2019

Intrastate Hydro Politics: Issues of Hydro Resource Management in India

is located between Nepal and India. Although, the opposition in Thimpu has accused India several times for exploiting the treaty and making more advantages of this joint venture as it is doing with other regional states.

Assessment and Analysis

India is in the advancing phase of development and it claims to be the competitor of the emerging economies of the Asian region. To compliment this claim India is expected to show the growth of domestic economy. As it is described earlier that the industrial economy is naturally associated with the resource availability and water is the most vital of all resources. Water is a routine daily life commodity; hence it is requiring collective planning from all sectors associated with it. Population is the one such significant sector. India has seen mass population shift from rural to urban areas. As per Stolman and Wardely, India is comparatively successful in the project of clean water provision to both rural and urban population (1996). As far as its economic growth rate is concerned, India is showing promising progress and trying its level best to invest on the water storage projects.

India is not facing hydro deficit situation; the hydro stress is mainly due to mismanagement in this sector. Increasing imbalance in the demand and supply of the water is due to rapid economic growth and inefficient use of domestic water supplies. As states are in perpetual need of water, slight inefficiency in the water management sector takes up the shape of huge propaganda campaign on media.

Dick &Mendoza has picked up another popular dimension of the issue. They are of the view that hydro expenditure in the agriculture sector should be advanced and it is appropriate to seek aid from the neighboring countries in this regard (1996). Along with this, there is another argument regarding the population displacement as the result of mega hydro project construction. This is the corollary of the hydro management sector.

Apart from effectiveness debate, there are several water conservation programs which are going on in India. Water storage program initiated by Gujrat is one such example. Although this program has gathered appreciation from the Modi Government but there is an expert level debate going on this project. Perry, for example doesn't support watershed building program. He opined that these watersheds would cause low flow of water in the mainstream rivers. While Shah (2013) on the other hand contradicts this view by clarifying that watershed program doesn't ask for the conservation of every single drop of water but only that which is necessary. (Perry & Shah, 2013)

Another problem associated with water management is water contamination due to increasing ratio of industrial waste and pollution. Consequently, an upstream state was barred by the Helsinki Convention to stop up to 30% of its water flowing to the downstream state in context of growing water contamination, it is estimated that 80% of rural and 20% of urban infant mortality rate is due to the contaminated water with toxic industrial waste.

In present times, hydro sector related efficiency is all about taking control of the water resources. The one who takes preference over taking control over a water source has generally brighter chances of gaining relatively more advantages (Lachman et al, 2016). This situation has breed feud over the attainment of water resources between and among the states. As it is almost impossible to allocate

proportion in the rivers, the riparian system has been unable to devise ultimate rules of the game in this regard. Many hydro management policies have been devised so far. First hydro management policy came in 1987 which was revised in 2002. It was decided to establish a data bank on both state and national level, but unfortunately it could not generate transparent and impartial data base of the water sector management.

Dick & Mendoza believe that if water is treated as the market commodity, the managerial, distribution and access issues of this sector can be resolved (1996). Lease system of hydro resources is practiced in USA and river water is traded to the lower riparian and non-riparian states. Similarly, the upstream riparian states can be made bound to give payment share in the dam construction projects. India has already signed one such agreement with Nepal and Bhutan.

Many policies can be adopted for altering the consumer behavior like reduction in the subsidies in the areas with ground water depletion issues and discouragement of much water demanding crops in the already water deficit areas. Media can also play a role in this regard. Informal ways of educating general masses regarding the better judicious way of water consumption and sharing. For agriculture and industrial sector treated water can also be utilized. Legal parameters can be adopted for the safety of ground water reservoirs. To be very precise hydro sector think tanks can be developed in order to bring about smart solutions to the water related issues and problems.

It is essential to depoliticize the hydro management sector in India. The innate interests of the stakeholders can be set aside and interstate hydro resource sharing issues can be resolved on mutual welfare basis. Through participation of ecological experts, cultivators and state parties, neighboring states involved could bring about the decisive solution on water related issues along with setting up of special tribunals set for the purpose. India lacks such holistic and genuine efforts required for the viable solutions of the hydro sector management related issues.

India possesses a vast and interrelated hydro sector which is naturally linked to the five neighboring states. All internal policies of hydro resource management have implications for the external actors naturally involved or associated with it. It is the moral obligation of India to observe respect for the international customs, conventions and treaties along with UN Resolution on the Law of Trans-Boundary Aquifers 2011, Madrid Declaration 1911, Montevideo Convention 1933, Helsinki Rules 1966 and UN Convention on the Laws of Non-Navigational Uses of International Watercourses 1997.

On regional level India has signed water treaties with Pakistan, Bangladesh, Bhutan and Nepal. It is expected that India will adhere to the true essence of the treaties and avoid unnecessary disputes and violations. Economy is not the only sector that can let India become a comity of civilized nations. Respect to the concluded treaties, international conventions and norms are equally necessary in this regard. International Law is explicit regarding water distribution mechanism on both internal and international levels. Indian constitutions should also not reflect confusion on this issue. India is more inclined to practice its traditional norms than the European traditions. It is a set standard that an indiscriminate approach to the state related issues provides moral stand to a federal state in all of its internal actions (Ross, 2016). India can call interstate conventions over the water sharing issues

Intrastate Hydro Politics: Issues of Hydro Resource Management in India

between and among its federating states. Secondly, practice of fair water sharing policy with the neighboring states can provide chances for resolving internal water management problems.

Last but not the least, a mature and focused media campaign is much needed to provided information to general masses about the international law, conventions and treaties on inter and intra states water sharing mechanism. It should be made part of the curriculum on all level of the educational sector's in order to reduce unnecessary pressure over states and union governments. This is the only possible solution which will open up a new vista of ecofriendly and welfare based hydro management policies.

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