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A Strategic Analysis of River-Water Conflict in India: A Case Study Approach

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Abstract

We all know that water constitutes 70% of the human body. The International Conference on Water and Environmental, 1992, states that water is a vital element for human life, and therefore is an essential part of daily life activities. In the present-day context, water has become a necessary factor of economic development affecting social development. From this paper, the researchers have tried to highlight the importance of water and show that the demand for water for domestic, agriculture, and industrial purposes in diverse fields is multiplying gradually, thus leading to its scarcity in different areas. Such problems arise due to increasing population, unequal distribution of water, and so on, which has led to a debatable issue and conflict. The water conflict arises not due to shortage or lack of water, but on the ways water and its resources can be managed. The government needs to control and regulate water use, leading to equitable distribution to areas with low water supply. Thus, it is crucial to formulate much more robust policies for the sustainable use of natural resources.

Keywords: *Water, Economic Development, Social Development, Water Conflict*

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INTRODUCTION

Defining Water

The International Conference on Water and Environmental, 1992, states that water is a vital element for human life, and therefore is an essential part of the activities of day-to-day life. Water is required in several activities, and unfortunately, this natural resource is becoming limited, and access to it might be difficult in the coming days. It is commonly said that the common wars in the future in the Middle East would not be over oil, but would be more on the availability of water. Due to climate change, the situation is becoming worse for future generations. About 11% of the global population is still without proper access to drinking water, which is the catalyst for prominent water disputes globally. Water is essential for life, sanitation, and commercial uses, and is also required in many industrial sectors for production and manufacturing of goods. Thus, as water is vital for life, it is essential to keep the river-water pollution-free, irrespective of whoever uses it. Consequently, water resources may pressure the parties to have their shares, causing tension or conflict (https://www.revolvy.com/main/index.php?s=Water%20conflict).

Water is the most important source of survival, and its resources are essential for humankind. In the present-day context, water has become a necessary factor of economic development affecting social development. Hence, water's importance and demand for domestic, agriculture, and industrial purposes in diverse fields are gradually multiplying, thus leading to its scarcity in different areas. Such problems arise due to increasing population, unequal distribution of water, and so on, which has led to a debatable issue and conflict. This conflict of river-water dispute is very prominent in federal systems like India and the United States of America, because a majority of the rivers of these two countries are inter-state and the source of resources, thus resulting in disputes. Hence, maintaining federal and better inter-state relations is essential, as water is the source of resources. Considering this fact, the construction and development of equitable mechanisms for sharing inter-state river water should be one of the significant issues of a peace-building theme among the states in the federal countries (Malik, 2015).

According to the Constitution of India, water is essentially a state subject, and the Union comes in only in the case of inter-state waters. Furthermore, as per List II of the Seventh Schedule, water, that is to say,

water supplies, irrigation and canals, drainage and embankments, water storage, and water power are subject to the provisions of entry (Malik, 2015).

Defining River Water

A river may be defined as a stream of water that flows through a channel (or passage) on the ground's surface. A river begins on high ground or hills or mountains and flows down from the high ground to the lower ground. The river plays a key role in economies associated with human life for human civilisation (https://simple.wikipedia.org/wiki/River).

As quoted by the Prime Minister, "Rivers are a shared heritage of our country; they should be the strings that unite us, not the strings that divide us". However, as per the current scenario, there arises a conflict with the river water dividing every section of the society: state, regions, castes, groups, farmers, and political parties. Hence, this modern-day conflict in society is dripping faster into the grassroots level of India.

Freshwater is a scarce, finite, and vulnerable resource, and is an essential part of life; hence, an effective holistic approach is required to use this scarce natural resource. This management should be based on a participatory approach that involves public consumers and policymakers. Water has an economic value, and it is the basic right of an individual to use water; because of lack of awareness among the consumers, this resource has become finite and limited. So, we need to manage this resource for efficient and equitable usage and encourage conservation and water resource protection. Consequently, the guiding principles for conserving water resources should be followed, to manage the fair use of water resources among the states and countries, thus avoiding water-related disputes (The Dublin Statement and Report of the Conference, 1992).

WATER DISTRIBUTION

Water distribution is a concept whose primary function is to deliver or transport appropriate quality, quantity, and pressure to the consumer. The distribution system describes the facilities used to supply water, from its source to the point of usage. The requirements of a sound water distribution system are as follows:

- No deterioration of water quality in the distribution pipes.

- Capability to supply water to all the planned places with sufficient pressure.
- Capacity to provide the requisite amount of water during firefighting.
- The design and layout of the water distribution system should be appropriate, so that none of the consumers are without water supply even when any of the sections are under repair.
- The water distribution pipes should always be laid one metre or above the sewer lines.
- It should be fairly water-tight to keep losses due to leakage to the minimum (https://www.wateronline.com/doc/water-distribution-system-challenges-and-solutions-0001).

THEORETICAL FRAMEWORK

The Doctrine of Riparian Rights: This emphasises equal rights to the water, to be used by the population adjoining the river. The word ripa means the bank of a stream or river. Thus, we can say that every population of the society has the right to use water, a natural resource.

Theory of Community of Interest: This theory states that a river is to be considered as one unit, even though it passes through several states; it ensures maximum utilisation of the water resources. To implement this theory, proper development of the policy and mutual agreement are required to avoid conflict (Malik, 2015).

Conflict Theory: Conflict theory in social work is a framework that tries to depict the general forms and variety of conflict in society: stating how a conflict starts its approach and its effects. This framework emphasises the unequal distribution of scarce resources and power in the society, which creates oppression in the lives of the clients affected due to the conflict in the society. This theory works with Weber's three systems of stratification: class, status, and power. Thus, the conflict theory perceives power as the central feature of the society, rather than taking society as a collective agreement encompassing a well-defined set of cultural standards. In continuation to power is well defined as the sections of the society which holds the maximum power and uses it; and those who do not are key to the fundamentals of conflict theory. Thus, the conflict theory states that power is the sole guide of society and social relations. Hence, in this issue of water conflict, we can summarise that scarcity of resources is the issue related to conflict theory, and as such, when the resources of

water are not equally distributed it affects the countries or states on the downstream line of that river basin, depicting the emergence of conflict among the states deprived of their rights. In this theory, the countries also utilise power to create tensions and violence among states (Dahrendorf & Collins, 2006).

River-Water Dispute: This term describes a conflict between countries, states, or groups over access to water resources. River-water disputes arise due to divergent interests of uses of water, both public and private, and the fight for the resource. In India, there are various types of conflicts on the issue of water, which has erupted since independence. Water is a natural resource and is a heritage of each country, because there are numerous activities carried on with this resource, both domestic and industrial, and agriculture and irrigation. So, water conflicts should be resolved to make an equitable distribution of this natural resource among the population to avoid violence among the territories. For example, there was a recent dispute on the use of the resources of Yamuna River among the states of Delhi, Haryana, and Uttar Pradesh. Fortunately, this dispute ended with the interference of and cooperation from the chief ministers and the central government (Richards & Singh, 2001).

According to the Inter-State Water Disputes Act, Section 2c of the IRWD Act: 'Water dispute' means any dispute or difference between two or more state governments with respect to the use, distribution, or control of the waters of/in any interstate river or river valley or the interpretation of the terms of any agreement relating to the use, distribution or control of such waters or the implementation of such agreement or the levy of any water rate in contravention of the prohibition contained in Section 7 of this Act. IRWD applies to interstate rivers. The action of one state affects the interests of another state or states, thus giving rise to the IRWD Act. The legal application of the act is that the actions of the downstream state affect the importance, significance, and consequence of losing the prevailing water use purpose of the upstream state and vice-versa (Sasidhar, 2011).

CAUSES AND CONSEQUENCES OF DISPUTE

The typical water dispute among the states emerges when the upstream states' use, control, and distribution affect the water flow to the downstream states. The causes of river-water disputes among the states are as follows, with some references:

Water is required for every human being and is needed daily. Water is consumed for several uses, such as irrigation, for drinking, industrial, recreation, and recharging of groundwater. River-water conflict arises when any dam or water storage reservoir is constructed on the river basin, obstructing the flow or transferring water outside the river basin. This affects the optimum use of water resources by the population besides the river, who are solely dependent on their livelihood from the river.

Decreasing the availability of water for the downstream states: Another reason for dispute is when the upstream blocks the river flow by constructing low-cost barrages and stores the flood waters by constructing storage water reservoirs. This affects the river flow system and creates a dry season throughout the year, except during floods. Creating such differences not only alters the ecology of the river of the downstream states, but also the riverside vegetation, flora, and fauna. Eroding and shrinking of the delta areas of the rivers is another consequence, when sufficient water does not reach the sea.

The quality of water also decreases. This is due to the gathering of dissolved salts in the remaining water, after use. Thus, the water becomes overloaded with silt and is unclear. Hence, the alteration of the river water effects the cultivated crops, as the saline water is not suitable for the growth of the crops. As a result, there is less production. This is a manmade situation: altering the quality of water is the effect of mining and deforestation. Furthermore, the aquatic flora and fauna, ecology, and fisheries are under threat due to the salinity of the water. Thus, the water from other river basins of upstream states also affects the quality of water, leading to its degradation for the downstream states (Sasidhar, 2011).

CASE STUDY

Since India's independence, the country has seen a number of river-water disputes, due to the sharing of the river-water resources. Four case studies have been described in this study, with the objective of assessing the extent of conflict with the natural resource. In each of the below mentioned cases, the court of law was instated to resolve the case; however, it was time consuming, incurred high expenditure, and in many cases, no one came up with appropriate solutions, which adversely affected the population on the banks of the river.

The Krishna-Godavari Water Dispute

The River Krishna is the second-largest river in the Indian peninsular. It originates from the state of Maharashtra and crosses through Karnataka and flows till Andhra Pradesh, which is the last state where the river joins the sea. Consequently, Maharashtra is the upstream state, where the river basin flows, and the other two states are downstream states of the river basin Krishna. The river Krishna also has two other tributaries, i.e., Bhima and Tungabhadra. Now the dispute arises because Andhra Pradesh does not have to take permission from Karnataka and Maharashtra for water use, control, and distribution, whereas Karnataka has to take permission from Andhra Pradesh, but not from Maharashtra. On the other hand, Maharashtra has to take consent from both the sates, under the IRWD Act, 1956. The Krishna Water Tribunal did not allow specified flows from the upstream states to the downstream states. Previously, the Krishna basin used to get sufficient flows throughout the year. Similarly, Andhra Pradesh also received water supply without depending on the storage facility. There was adequate water reaching the sea, sustaining the ecology of the river throughout the year. Furthermore, the Bachawat Tribunal did not serve its purpose; rather, it allotted all the river basin flows to the upstream states, while allotting the rest of the available river water among the downstream states. This deprivation in the state of Andhra Pradesh was compensated by this tribunal. Although the downstream states have contributed a huge amount of money to creating the needed storage capacity so that the river flows partially. The tribunal should give controlled base flows from the upstream states to downstream states in the allotment of the remaining water of River Krishna. The created storage capacity is exceeding 75% of the yearly water around the year also having proper and available infrastructure with the upstream states (Sasidhar, 2011).

The Narmada River

The Narmada River dispute is the second-important river dispute in India which is hugely publicised. The dispute is among the three states of Madhya Pradesh, Maharashtra, and Gujarat. The reason for the dispute among the states is because of population displacement by the reservoir and failure to compensate the population sufficiently. The findings of the Narmada Water Disputes Tribunal issued in the year 1979 stated that a significant portion of the water is at the Sardar Sarovar dam site, with 75% dependency, and allotted the available water to the three states on

an equal distribution basis, with proper reserves for irrigation facilities. The court of law also stated that there should be equal distribution of water during drought, sharing of power benefits from the dam, and each state was to share costs in proportion to the power allocated to each of them. Furthermore, rehabilitation and resettlement of the people in the dam areas was addressed, and compensation was to be paid by the state of Gujarat for acquiring the land. Unfortunately, the failure of the planners and considering the alternatives led to incurring high costs and discriminatory treatment of the affected population. Even now the problem persists and the revision of the judgement is possible only after 45 years have passed. Thus, we can conclude that this Narmada water dispute has led to sufferings among the common population, inadequate compensation, and violation of the human rights of this population in sustaining their livelihood (Malik, 2015).

The Ravi-Beas Dispute

The Ravi-Beas Dispute is the dispute between Punjab and Haryana regarding Ravi-Beas, which started in 1966. Ravi, Beas, Sutlej, and Yamuna are the four rivers that flow between these two states, and hence, irrigation and agriculture are highly dependent on these rivers. In 1981, an agreement on the dispute was accepted between the two states. There were protests on this issue and a tribunal did not gave its final decision on the issue. The state of Haryana took the case to the Supreme Court; hence, it gave three months to resolve the matter. Furthermore, the Supreme Court, in 2002, ordered Punjab to complete the construction of the canal within six months, failing which the work would be assigned to the CPWD. The construction of the canal was not finished and was entrusted to the central public works department. The present-day status is that no progress has been made on the construction of the SYL canal since then, with no certainty about the execution of the unfinished canal. Apart from these, other issues were also prominent, i.e., no proper security was provided to the officials and construction workers engaged in the work. No proper planning was carried out to protect the green belt on the path of the canal (Malik, 2015).

The Cauvery Dispute

This dispute was mainly about the core issue of re-sharing waters that is being utilised fully, rather than about the sharing of Cauvery waters.

This dispute is between the two states of Karnataka and Tamil Nadu. The reason for the dispute: since the Government of Karnataka was constructing several dams and expanding their irrigation works on the river, it restricted the flow to Tamil Nadu in an unequal way. This was adversely affecting the irrigation works of the state of Tamil Nadu. The Government of Tamil Nadu mentioned that the Karnataka government was not abiding by the rules as per the agreement of 1892 and 1924 related to the proper use, distribution, and control of the river water. The problem did not get resolved, due to several reasons, i.e., divergent interest between the two states, unstable government in both the states, and different political parties in the states led to no proper decision-making on the dispute. Another reason was that there was no effort taken on the part of the ministers to resolve the issue after several meetings regarding the sharing of the water of Cauvery. Furthermore, the workers engaged in the work involved themselves in politics rather than making an effort to work (Richards & Singh, 2001).

The Ganges Water Conflict

This is another case study which depicts the tension between India and Bangladesh due to the construction of the Farakka barrage. Since the barrage was constructed there has been a conflict between the two countries. This conflict has existed since 1951, and started when India decided to build the Farakka barrage to divert the water of the Ganges to the Hooghly River by a feeder canal. This is therefore an issue becoming the reason for conflict between the two countries. To deal with the situation, the two countries signed two treaties and MOUs over several years to resolve the conflict between the countries, but did not come up with a proper solution. After the Farakka barrage was built, the flow of the Ganges decreased significantly during the dry season (2340m/sec to 1236m/sec). The barrage was built with two objectives: to maintain navigability of the river and wash out the silt deposited in Kolkata port and to ensure saline-free water supply to the city of Kolkata. Several treaties could not reduce the conflict between the countries. Some recommendations suggested are: changes in the policies – inclusion of minimum guarantee clause, whereby there would be minimum water flow to the downstream country from the upstream country; inclusion of schemes for a long-term solution; and mechanisms for dry season flow of the river (Rahaman, 2006).

The Nile River Basin

This rover basin is shared by ten countries and is the longest river basin globally. The data shows that 160 million people are solely dependent on the Nile River basin for their livelihood, and 300 million people live within the ten countries. The water demand is likely to increase as this region's industrial population and agriculture will also increase in the next 25 years. This region is always under threat of drought, increasing the water demand. Moreover, pollution from the upstream countries degrades the water quality, leading to famine and various diseases. Hence, Egypt must consult with other nations on the use of the Nile water. The common issue of the emergence of the water conflict is due to the powerful military forces of the downstream countries than the upstream countries; it is believed that the upstream countries' actions threaten the sharing of the natural resource. Similarly, in the case of the Nile River Basin, Egypt is the most powerful country, with military forces; it is feared that the upstream countries would provoke conflict by constructing dams without their consent, thus reducing its water supply (Kameri-Mbote, 2007).

RECOMMENDATIONS AND THE WAY FORWARD

Water conflict leads to political and regional stress, and hence the government should take relevant steps to resolve the problems related to river-water disputes. The following steps could be taken to address the issue.

There is an urgent need for the government to proactively look into the development and implementation of national water law to safeguard the interests and ensure equitable distribution of the natural resource. The founding of River Basin Organisation (RBOs) for each inter-state river, as per the National Commission for Integrated Water Resources Development, 1999, replaced the River Boards Act, 1956. The members of the RBOs should play a positive role, suggesting institutional and legislative reforms to develop models to resolve inter-state water conflicts. They should also regulate and formulate necessary arrangements, keeping in view the optimum use of the resources. Enactment of the National Water Law to develop, conserve, utilise, and manage water, and make it a long-term resource without making it scanty in the long term, is important (ARC 7th Report, 2008).

The water conflict arises not due to shortage or lack of water, but the ways water and its resources can be managed. The government needs to

control and regulate water use, leading to equitable distribution to areas with low water supply. Thus, it is essential to formulate much more robust policies for the sustainable use of natural resources. However, there is a lack of human, technical, and financial resources in developing countries that would help develop and implement policies and mechanisms to address this issue over water use (Petersen-Perlman et al., 2017).

In continuation to this, some recommendations suggested are:

- To recognise that environmental resources, i.e., water, is the way to peace.
- To use water diplomacy, schemes to build sustainable development, equitable use of the resource for current and future users, increasing access, and encouraging broad participation.
- Engagement of non-state actors (such as farmers, fishers, women's groups, and community-based organisations) in cooperative solutions for potential water conflicts, which leads to equal participation from all sections of the society, rather than just the actors who are mostly affected due to the conflict over water.
- Capacity development of the civil society organisations, as they would contribute to resolving the conflict, bridging the gap between civil society and government. IT will also help the local users demand access to benefits of the river, which is directed due to interstate agreements, while continuing to "buy-in" to basin-wide initiatives, reducing the chances of a conflict.
- Cooperation among several institutions (Canadian International Development Agency (CIDA), the Swedish International Development Cooperation Agency (SIDA), and the United Kingdom's Department for International Development (DFID)), as well as the World Bank, which are working to bring a solution to the various water conflicts (Water, Conflict, and Cooperation: Lessons from the Nile River Basin, Kameri-Mbote, 2007).

SOCIAL WORK INTERVENTION

Political unrest and violence over water are on the rise across the world. Population growth, economic expansion, severe and protracted drought, pollution, deterioration of natural landscapes, construction of upstream infrastructure (such as dams and diversions), wasteful use of water in agriculture, low water quality resource management, and weak institutions are some of the factors that appear to be causing more

conflict and instability. Effective water resource management requires the involvement of a wide range of water consumers, communities, and other stakeholders. As more people compete for scarce water supplies as a result of climate change and increasing demands on natural resources, we need such participation more than ever. The Water, Peace, and Security Partnership and the Pacific Institute identify several dozen strategies to reduce water-related conflicts, in four broad categories:

- Natural resources, science and engineering approaches
- Political and legal tools
- Economic and financial tools
- Policy and governance strategies

Social work provides a perfect platform to enhance the welfare of the community. As we all know, water is the primary requirement for the existence of any individual. Conflict management, also referred to as conflict resolution, entails having a management team that successfully handles and resolves workplace difficulties as well as a strategic intervention that prevents conflict. It is the responsibility and accountability of the state, as well as the central government, to work on the conflicts between the various states, to provide access to water to each and every state.

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