IMPACT: International Journal of Research in Humanities, Arts and Literature (IMPACT: IJRHAL)
ISSN (P): 2347-4564; ISSN (E): 2321-8878
Vol. 5, Issue 8, Aug 2017, 55-60

COLONIAL HYDRAULIC INTERVENTION AND ITS IMPACT ON THE RIVER CONTROL POLICY IN POST-INDEPENDENT INDIA

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ABSTRACT

Being a country surrounded by the Bay of Bengal and Arabian Sea, India is quite prone to flood. One and every part of the country is severely affected by floods caused by the rivers of the country. In spite of these huge destruction made by the rivers for an extended period of time, no significant solution is there to solve this problem. However in the last few decades, some serious attempts have been made in order to improve the effects of floods and also for better control and management of the rivers. Examining those policies and initiatives adopted by the government of India for flood control is quite necessary for better understanding of the flood problem in the country.

KEYWORDS: flood control, colonial hydraulic intervention, river control policies

INTRODUCTION

Rivers in Transition

Flood hazards have long been recognized as one of the most disastrous and recurring natural hazards affecting several densely populated regions of India. It causes huge damages to lives, livelihood systems, properties, infrastructure as well as public utilities. The high risk and vulnerability that is faced by India is highlighted by the fact that "40 million hectares out of a geographical area of 3290 lakh hectares is prone to floods".[1] India is drained by major river systems such as the Himalayan Indus-Gang-Brahmaputra systems and the peninsular Godavari, Mahanadi, Krishna, Cauvery on the east coast and the Narmada and Tapti on the west coast. The country is also dependent on the south western monsoons which bring rainfall to the country in the month from June to September. However, the high Himalayan Mountains form an effective barrier to the southwest monsoon. This is responsible for intense and massive precipitation in the catchment areas of the rivers of the Himalayan region, such as the Ganga and Brahmaputra and their tributaries.

OBJECTIVE

With this brief introduction, the prime objective of the work is to analyze the basic features of the flood control policies adopted by the Government of India in the post-independence era. It will further analyze the effectiveness of those policies.

COLONIAL ASTUTENESS AND FLOOD CONTROL IN BRITISH INDIA

Like other places, the human civilization in India is also developed in the floodplains. In fact, the riverbed itself is time and again a place for habitation and settlement throughout India. However, notably, the approach of communities in

[1]Rastriya Barh Ayog.

the past was driven and dictated by the moral principles of "living with floods rather than mastering the flows". But with the coming of the British, the equation has changed and floods were viewed as a problem which needed to be tackled. People who lived in flood prone areas and their knowledge was considered to be 'traditional' and hence obsolete in the face of superior technical knowledge.

Thus, under the agenda of flood control, during the colonial recognition of flood as a calamity, the building of embankments was the first significant structural measure. No doubt, the measure adopted was mainly to deal with the submerging revenue generating land. So the ideology was mainly economic rather than social or otherwise. By the middle of the 19th century, large numbers of mechanical measures were built across Bihar, Orissa, Bengal and parts of rivers from south India.[2] With the believe that they could transcend the limitations of the environment and climate through superior science and technology and also with a complete disenchantment with nature, the colonial government engineered, controlled, tamed the rivers and made them into a source of artificial canals. They embanked the rivers in order to prevent the interruptions in revenue flows, dug large numbers of canals with a view to harness water for irrigation and navigational development and lastly initiated many "Multipurpose River Valley Projects" in the last decades of their rule in order to facilitate power and energy for capitalist production. Thus, the Britishers had initiated a new era of understanding the rivers and their water resources. Their flood control policies can be categorized in three distinct phases. The first is called the era of modern irrigation in which canals were constructed in the rivers like Ganga, Krishna, Godavari in the mid of the 19th century. The second phase was characterized by the extensive embankment construction work by the Britishers in all over the country. The third stage was a foundation for multi-purpose river valley projects in India by laying down the framework for the construction of three dams. The construction of the Damodar Valley Project, the multi-purpose river valley project in Mahanadi and the same with the Sun River was the result of that rationale.[3]

So, when India became independent, around 5,280km of embankments out of which 3,500 km were in West Bengal and 1,209 km along the Mahanadi in Orissa had been completed by the British. Along with that, it was the colonial government who gave a foundation for multi-purpose river valley projects in the independent India. This colonial watershed and its hydraulic legacy have resulted in the enthusiasm for flood control in post-independent India.

FLOOD CONTROL IN INDEPENDENT INDIA: A CONTINUATION OF THE COLONIAL LEGACY

Becoming independent from the colonial rule, the Indian state started its journey with full commitment to growth and social transformation; thereby a clearly politically directed development trajectory was visualized. Planned state led modernization envisaged pursuing with the assumption that social change can be orderly and predictably manipulated by a benevolent state. But it is mention worthy that freedom from the colonial rule need not necessarily imply freedom from colonial policies. The policies that were formulated by the colonial government, continued to be adhered to in the same vein even after independence. In independent India, rapid growth in population coupled with increased human activities in the lower areas of the flood plains, increasing economic aspirations of a newly independent nation and the knowledge of European engineering tradition provided the backdrop for keeping the floods away from most part of the floodplain through structural interventions as a political agenda. Hence, the idea to eliminate floods emerged as a central theme in the

[2]D'souza Rohan, "Drowned and Dammed: Colonial Capitalism and Flood Control in Eastern India", Oxford University Press, pp-51

[3] D'souza Rohan, "The Deltaic Rivers of The Bengal Presidency: The Political Economy Of Flood Control in Colonial Orissa", PhD thesis submitted to Jawaharlal Nehru University.

present day governmental agenda on water management. However, the evolution of economic and political framework of present day India can be traced back to the crucial period in Indian history from the early 1920's to mid-1950. It was B R Ambedkar who had made a significant contribution in this period.

Ambedkar has contributed a lot in the articulation of political and economic framework for India in the form of Indian constitution, re-organization of states, and reform of the Hindu social and religious order, social policy and so on. Although it was not known so much, but one of the greatest contribution of Ambedkar in the making of India was his leading role in the formulation of objective as well as a strategy for economic planning and water and electric power policy as a cabinet member in charge of the "Labor, Irrigation and Power portfolio" during 1942-46. It was under his leadership, numbers of institutional framework has been developed and the base for present day water policy has been founded. Ambedkar recognized that water is the wealth of the nation and its development unlike many other sectors has certain distinct features. The water resource project is spread over a large area covering often interstate rivers with varying socioeconomic conditions and conflicting interests, requiring numerous decisions and agreements at various levels keeping in view the overall interest of the country.

Ambedkar initiated a water resource policy visualizing greater participation of the central government than was permitted under the Government of the India Act of 1935. Ambedkar expanded the notion of the "New All-India Water Resources Policy" in January 1944 by stating that there has been an absence of positive all-India policy for development of water resources and the government of India wishes to take steps to evolve a policy to utilize the water resources for the purpose for which they are made to serve in other countries. Ambedkar considered river waters as a national heritage and a national policy is needed to use the water for multi-purpose by multi-states so that a larger section of the society could be served. The policy initiatives based on the visionary taken by Ambedkar have been clearly reflected while framing the provisions in the Constitution. So, with the initiative of Dr. B R Ambedkar, the issue of water had been placed in a significant position in the constitution of India. The issue of water can be found in the following articles of the Indian constitution. Along with these constitutional inclusions regarding river water, Ambedkar also laid the foundation of all-India level water policy which had three components, namely (a) a concept of "River Valley Authority" for the management and control of projects on interstate rivers, (b) the concept of regional and multi-purpose development of river valleys as a whole, and (c) establishment of technical expert bodies at the Centre. Aiming at this goal, the Central Waterways, Irrigation and Navigation Commission (present day Central Water Commission) and the Central Technical Power Board (presently Central Electricity Authority) were established under the leadership of Ambedkar.[4]

However, the inadequacy of flood protection measures provided in the past came into sharp focus during the disastrous flood in 1954. The government of India therefore embarked upon a national flood control policy in the same year to be implemented in three phases- Immediate, short term, Long term. The immediate and short term phases of the program were taken up in the first and second five year plans. These comprised a collection of basic hydrological data, construction of embankments, improvements of river channels and rising of villages above flood level. Investigations required for the information about long term proposals were also carried out during the two plans. In the third plan, a start was made on long term measures which envisaged schemes such as construction of dams and storage reservoirs for flood protection and soil conservation in the catchment of various rivers. Short term measures consisted of improvement of

[4]ThoratSukhdeo, "Ambedkar's Role in Economic Development and water policy, Shipra Publication, Delhi, 1998.pp--71

suffrage drainage, establishment of a proper flood warning system, shifting or raising of villages, above the flood level and construction of raised platforms to be used during times of flood emergencies. New embankments wherever necessary were also put up. As a result of the works of executed up to the end of the third plan, more than 40.5 lakh ha of land usually subject to flood damage has been given reasonable protection. The expenditure incurred on flood control works during the first three plans was Rs. 146.12 crores of which Rs 60 crores was spent during the first two plans.[5]

It is mentioned earlier that the capitalist motivations of the colonial government led to the embankment construction as well as the canal irrigation in Indian sub-continent. But when these measures were not proved to be enough for controlling the floods in the rivers, the same government, by the early 1940s, once again undertook an unprecedented level of hydraulic intervention by introducing Multipurpose River Valley Projects. With this, they began to conceptualize the inundation process as a natural resource for providing irrigation, navigation and hydroelectricity. This colonial legacy has culminated in the independent India in the form of huge numbers of river valley projects namely Bhakra Nangal Project, Mandi Project, Chambal Valley Project, Damodar Valley Project, Hirakud Project,Rihand Project, Kosi Project, Mayurkashi Project, Kakrapara Project, Nizamsagar Project, NagarjunaSagar Project, Tugabhadra Project, Shivasamudram Project, Tata Hydel Scheme, SharavathiHydel Project, Kundah&Periyar Project, Farakka Project, Ukai Project, Mahi Project, Salal Project, Mata Tila Multipurpose Project, Thein Project, Pong Dam, Tehri Dam, Sardar Sarovar Project and so on.

Although the independent state of India turned the dammed rivers into the synonym for nation building, in retrospect, the ground level reality of these projects has been something very different. However, the first discontent against big dams was voiced over the problem of displacement. Although protests against large dams are increasing day by day, their voices are simply ignored by the state machinery. On the contrary, they are inaugurating huge numbers of new river valley projects on each river aiming mainly to control floods as well as produce electricity. Not having satisfied with these projects, the government of India has now come up with its ultimate hydraulic intervention in the form of "Interlinking of Rivers". This project, according to the Government officials will be an adequate answer to the problem of flood and drought in the country.

Almost a decade ago when the country was under the rule of Bharatiya Janata Party (BJP), the prime Minister Atal Bihari Vajpayee for the first time proposed the idea to interlink India's rivers. It has, however become a determined policy in the NarendraModi-led government. The proposed project of interlinking of rivers comprises a comprehensive engineering involvement to shift water from the lower Ganga and Brahmaputra basins in eastern India to water scarce regions of central and western India through the construction of dams, reservoirs and over 14,000 kilometers of canals. The claim is that the Interlinking of Rivers will genrate30, 000 megawatts of cheap hydro power. Along with it, this will supply drinking water to 101 districts, 5 metros and irrigate 34 million hectares. The BJP government regarded it as a remedy for the hazard of floods and droughts that plague India every year.

The ILR comprises two components: Projects in the Himalayan component and peninsular component. Under Himalayan Component, 14 links are identified aiming to build storage reservoirs on the Brahmaputra and Ganga rivers, as well as their tributaries in India and Nepal. The aim is to conserve monsoon flows for hydropower generation and

[5]Irrigation and Power in the Three Plans (1951-66), publication Division, Ministry of Information and Broadcasting, Government of India.

irrigation, along with flood control. The linkage will shift surplus water of the Gandak, Kosi and Ghagra to western parts of the country. Between the Ganga and Yamuna, a link is also planned to transfer the surplus flows to drought-prone areas of Rajasthan, Haryana and Gujarat. On the other hand, the Peninsular Component or the Southern Water Grid includes 16 links that connect the rivers of South India. It envisages linking the Godavari and Mahanadi to nourish the Pennar, Cauvery, Krishna and Vaigai rivers. According to the plan, this linkage will require a number of big dams and major canals to be built. Besides this, the Ken River will also be linked to the Betwa, Parbati, Kalisindh, and Chambal rivers.

It is mention worthy that beyond some lines drawn on the map; no scientific and technical details of the proposed interlinking of rivers are available in the public domain. Technical information on the flows, storages, link canals, barrages and associated engineering structures, the ecological impacts on downstream areas of the basins, extent of involuntary displacement, and the likely costs and benefits of the proposal have not been made available for open professional assessment by the ministry of water resources. Only a part of the Ken-Betwa link is being published in the public domain. It involves Uttar Pradesh and Madhya Pradesh in the Bundelkhand region. However, many environmentalists and social activists are quite skeptical regarding the fruitfulness of the proposed project, hence question it.

THE JOURNEY FROM FLOOD CONTROL TO HYDROPOWER GENERATION: A CONCLUDING REMARK

Although the people of ancient India used the water resources more frequently, yet the kind of exploitation of rivers had become more visible only with the colonial intervention in India. Earlier the idea was to live with floods. They adopted their own ways and means to deal with floods. But the planned intervention and flood control in India began only with the coming of the British in the scenario. The colonial government considered flood as a calamitous event rather than a normal and routine phenomenon. With their structural innovations, the whole perception of flood has got a negative connotation in the mindset of the common people also. They also instead of facing floods have tried to escape from it. This transformation of understanding has a severe impact on the policies adopted for flood control in India. The idea of the colonial government to control floods was motivated mainly by the economic factors. They, in order to protect their industries, transportation facilities and other administrative structures, tried to solve the problem of flood permanently, hence constructing an embankment ignoring its discontents. With this colonial legacy, the independent state of India has followed the same path. As a result of this, in the present day, 34397.61 km of flood embankments and 51317.50 km of drainage channels have been built by the Indian Government. Along with this, numbers of dams are being constructed, some with the multi-purpose of flood control, irrigation, and electricity generation and others with the sole aim of electricity production.

No doubt, the construction of dams has provided the country the basic facilities for industrial development, but at the same time, it has also some serious effect on the survival of the people inhabiting on the bank of the river. Construction of dams and submersion often leads to major loss of forest and arable farmland. Water logging as well as increased salinity decreases agricultural productivity in the vicinity of the reservoir. Some vector-borne diseases, such as malaria, schistosomiasis, filariasis, and river blindness are increased due to large-scale impounding of water. Besides, the compensation policies of the Indian Government towards the people displaced due to dam construction are not satisfactory in many cases. Since the compensation is grounded on the amount of land possessed so neither the dispossessed households were compensated nor were they compensated for damage of earnings or subsistence resultant from the

collective holdings like forests and common grasslands. This has created a massive dissatisfaction among the stakeholders regarding the issue of whose development actually the state machinery is opting for. Along with the social impact, these policies have a serious impact on the ecology of the rivers also. Due to the construction of the dam, there might be a severe impact on the bio-diversity, ecology and the surrounding environment of the river. What has been seen in the policies of the Indian government is that there is little concern for these issues. The techno-fetish state of India has made these structural interventions on the rivers as a synonym for development as well as flood control and hence initiates more and more projects of this kind in these days.

Concluding the article, it can be summarized that, modern flood control measures adopted in India are neither very successful, nor are they people friendly. As such, these dominant engineering responses to floods have been guided by a perceived need for controlling flood rather than managing them. Hence, rather than recognizing the failures of European engineering and obstruction of reference flows, the post-colonial State of India started constructing new structures, pre dominantly embankments and dams in an attempt to eliminate flooding. As year after year, flood control became a more bureaucratic affair, the people who actually lived and experienced floods became far removed from the decisions that directly affected their lives. In order to solve the whole issue, the government machinery as Professor Rohan D'souza suggests, has to come out of "Hidrocracy or Water Bureaucracy" that has dominated official decision. It should come out of that Hidrocracy that sees "a river as a water pipe, whereas it is actually so much more, a complete living ecosystem".

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