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DAM(N)ED THE KOPILI : REFLECTIONS AND IMPLICATIONS

Priyanka Sharma

Abstract

Damming rivers has become one of the focal components of development activities undertaken by the post-colonial state in India. Regarded as engineering marvels transforming the economy through a range of services like power generation, irrigation, navigation etc., dams are often seen as the panacea of development bringing qualitative changes in the lives of the people. The state of Assam which abounds in water resources already has two dams - the 275 MW Kopili hydroelectric power project and the 100 MW Karbi Langpi power project with more in the offing. Caught up in an intense struggle over damming rivers vis-à-vis its effects on the environment and livelihood security of the people, Assam has seen people's movements and resistance against dams. This paper is an attempt to highlight the experiences of the people with regard to the Kopili Hydro Electric Power Plant in Assam and reflect on the implications of damming the Brahmaputra.

Keywords: *Dams, Rivers, Kopili, Brahmaputra, State*

Introduction

> "It is an engineering marvel that has become a case study for large projects across the world."
>
> -Narendra Modi while inaugurating the Sardar Sarovar Dam, 2017

It has been observed that in the contemporary development paradigm with an inclination towards a neo-liberal outlook, damming rivers has become synonymous to development. Such a paradigm that rests on the premise of dominance and control over nature views nature as having to be 'managed' for the survival of humankind. In a way, it amounts to 'civilising nature' in a bid to control and tame its wilderness. Rivers are being perceived from an instrumentalist notion of instilling 'value' in them only if they can be tamed while untamed free flowing waters of rivers are viewed as 'resource wasted'. Hydraulic profit as such becomes the driving force behind damming rivers and the State having the legitimacy of control over resources becomes the major facilitating agency behind the flourishing dam industry aided by foreign capital. Although construction of dams generate livelihood opportunities to many but it comes at the cost of livelihood security of others, especially those who have lost their land due to submergence, those displaced and those who directly or indirectly depend on the river for their sustenance. Dams are responsible for resource depletion and resource extinction leading to not only the eradication of ecological spaces but also elimination of cultural spaces. Dams transform common property resources like forests and water into commercial resources eroding customary and community rights. Benefits accruing out of dams like irrigation, electricity or water supply though bring about qualitative changes for many but the spread of benefits is highly uneven. The role of the Indian State in the post-colonial period in the context of dams, point to the fact that the development strategy after independence of boosting agricultural production and developing the industrial sector in India necessitated huge investments in large dam projects for irrigation as well as hydropower generation. With the continuing march of industrialisation and integration with the global economy, the Indian State has

embarked on a series of hydropower projects to meet the growing needs of the economy and the populace as well as for strategic reasons. But little emphasis has been invested into the linkages between development and livelihood security. Dams as a part of the dominant development paradigm has come under intense criticism for the potential threat caused to the environment and the forced large scale displacement of people questioning the notions of human development and human security. A wide array of environmental and social issues that have been the points of discontentment gave rise to popular struggles against dams. Dams that were once hailed as 'modern temples', were later criticised as 'disease of gigantism'. Yet, notwithstanding the fact that people's resistance against these 'engineered' structures have been strong; there has been no stopping to the pursuance of dams as effective mechanisms of water resource management. In the advent of the Central Electricity Authority's (CEA) report (2001) that the North-eastern region of the country has the potential to generate about 43 percent of the country's total hydroelectric power potential , massive plans have been initiated by the Indian State to convert Northeast India including Assam into a 'powerhouse' for the country by tapping its hydropower potential to the maximum through construction of a series of hydro power projects. The National Water Policy, 2012, highlighting the need for utilising the water resources for ensuring food security of the region stated that, "in the water rich Eastern and North-eastern regions of India, the water use infrastructure is weak and needs to be strengthened in the interest of food security." Assam is considered as a bio-diversity hotspot and is home to diverse wildlife species including the world famous one horned rhino, elephants, tigers, wild buffaloes, pygmy hog and Gangetic river dolphins besides diverse and rich forest resources. Rivers assume tremendous significance for an agrarian state like Assam. The Brahmaputra and its tributaries form a major part of the landscape of the state facilitating agriculture, trade and commerce. Construction of dams solely for the purpose of generating hydro power to fuel the energy sector calls for urgent attention and need for introspection since blocking the natural flow of the river through development projects like dams is a threat to the entire ecological and livelihood security in the Brahmaputra valley.

Damming the Kopili: The Beginning

Kopili Kopili Pagoli Suwali
Manuhok koribi tran
Umrongsu joniu turei log laagi
Hobo siro jyotisman...

-Bhupen Hazarika (1978)

Originating from the Borail range mountains of Meghalaya, the Kopili is a south bank tributary of the Brahmaputra. It is an inter-state river with an altitude of about 1,600 metre and has a total length of 290 kilometers up to its confluence with Brahmaputra. The river is bounded by the Jaintia Hills in the west and the South Cachar and Mikir Hills in the east. Kharkor, Myntriang, Dinar, Longsom, Amring, Umrong, Longku and Langkri are its major tributaries in its upper reaches. After entering Assam the Kopili separates the Karbi Anglong district from the Dima Hasao district up to its confluence with Diyung River on its right at 135 kilometers. After the confluence with Diyung, Kopili flows into the Nagaon district in a north-westerly direction. The Jamuna River flows to the Kopili at Jamunamukh, Nagoan. The river then flows in western direction, and further downstream, the Umkhen-Borapani River which rises in the Shillong plateau and drains an area of 2,038 km2 joins Kopili at a distance of 254 kilometers from the left. The Killing River, known as Umiam in its upper reaches flows into Kopili from the left at about 280 kilometers. The Kopili River finally flows to Kalang, a spill channel of Brahmaputra, near Hatimukh, Nagoan after traversing a distance of 290 km. The total catchment of Kopili River is about 16,421 km2. The 275 MW Kopili project (KHEP) located on the river Kopili in the Dima Hasao district of Assam constructed by NEEPCO comprises of two concrete gravity dams: the Khandong dam (height 66 metres) on the Kopili river and the Umrong dam (height 45 metres) on the Umrong stream. The project has two corresponding reservoirs- Kopili reservoir (FRL 719.3 M) and Umrong reservoir (FRL 609.60 M) with two separate water conductor systems and three Power Stations (PS). These are :

a) Khandong PS (2 x 25 MW)
b) Kopili Stage II PS (1 x 25 MW)
c) Kopili PS (4 x 50 MW)

Water from the Kopili reservoir is utilised in the Khandong power station through a 2,852 metres long tunnel to generate 50 MW (2 X 25 MW) of power. The tail water from this powerhouse is led to the Umrong reservoir. The water from Umrong reservoir is taken through a 5,473 metres long tunnel to the Kopili power station to generate 200 MW (4 X 50 MW) of power. The first stage extension of the Plant envisaged setting up two additional 50 MW units at Kopili power station, provisions for which were already kept during the first stage development of the project. The Units III and IV under this extension scheme were commissioned in March, 1997 and June, 1997 respectively. The total installed capacity of the Kopili power station thus went up to 200 MW and that of the project as whole to 250 MW. The raising of the Umrong reservoir by 7.6 metres was taken up to meet the demand for more water for two additional 50 MW units of first stage extension. The second stage of the Kopili Hydro Electric Plant involves a powerhouse to generate additional 25 MW of power by utilising water from the Kopili reservoir through a 480 metres long water conductor system, provision of which was kept as a by-pass conduit from the surge shaft in the Khandong tunnel. The water from the second stage powerhouse will go to the Umrong reservoir for utilisation in the Kopili power station. The total cost of the project was Rs. 24,382.00 lakh for Kopili first stage, 13,448 lakh for stage-I extension and 95.02 lakhs for Stage- II extension. The project was developed in three stages:

Table-1: Stages of the Kopili Hydro Electric Plant

Power Station	Commissioning Date	Construction Phase
Khandong (2 x 25 MW)	Mar, May, 1984	
Kopili (2 x 50 MW)	June, July, 1988	1st Stage
Kopili (2 x 50 MW)	Mar, June, 1997	1st Stage Extension
Kopili Stage II (1 x 25 MW)	July, 2004	2nd Stage Extension

**Source*: NEEPCO data received under the Right to Information Act (RTI), 2005 bearing number NEEPCO/ED (CP)/RTI/R-1/ (Part-23)/2016-17/194 dated 26.08.2016

Thus, since the first unit of the KHEP was commissioned in 1984 and subsequent commissioning of the Kopili PS and Kopili Stage II in 2004, the project with a total power generating capacity of 275 MW has been feeding power to the

North Eastern Grid and serving the North-eastern region. Being a large dam (since height of both the Khandong and Umrong dams is more than 15 metres as per ICOLD standards), the Kopili project has played a pioneering role in the development of the power scenario of the North-eastern region. The establishment of the project led to the development of the small town of Umrongso, a remote area in the Assam-Meghalaya border which has become well connected with roads, banks, postal services, telecommunications, schools, hospitals etc. Several cement factories have also been established in the area facilitating the development of the local economy. But the benefits have also come with certain social and environmental costs as mentioned in the following table:

Table-2: Details of Land Procured/Submerged and Population Displaced/ Rehabilitated

Sl. No	Description	Information
1	Total land procured for the project	11,904.70 acres
2	Total submerged land for Kopili Reservoir (at present FRL is 719.30 M)	3300.00 acres
3	**Forest land acquired for Kopili reservoir submergence:	
	a) Reserved Forest	550.40 acres
	b) Unclassified Forest	3784.00 acres
	c) Private Land	1203.50 acres
	Total of above (a+b+c)	5537.90 acres
4	Total submerged land in Umrong reservoir	
	a) Unclassified Forest	3000.00 acres
	b) Reserved Forest	673.80 acres
	Total of above (a+b)	3673.80 acres
5	Total number of land owner/population displaced by the project	749
6	Total number of population rehabilitated	Nil

** Dam height of the Kopili reservoir is being raised by installing gate and land for further submergence was acquired long back.

**Source*: NEEPCO data received under the Right to Information Act (RTI), 2005 bearing number NEEPCO/ED (CP)/RTI/R-1/ (Part-23)/2016-17/194 dated 26.08.2016

Dam(n)ed the Kopili: Whose river? Whose dam?

Subsequent studies found that although there were rare plant outages till 2006-07 since the commissioning of the power stations of the project, there have been reports of increasing outages since May, 2007. It has been observed that unsystematic coal mining in the upper catchment area of the Kopili has led to the exposure of the river water to organic sulphur. Open cast mining using traditional technology for coal excavation is being practiced in the upper reaches of the Kopili and the open pits are left unattended once mining was over. During monsoons these pits get filled with rain water which in turn forms sulphuric acid which is then carried by rain water to the reservoirs. The acidic content in the water leads to corrosion/ metal erosion in most of the equipments in the power stations.[1] The issue of acidic contamination in the Kopili River has become a major concern as it has serious repercussions not only for the life of the dam but also for the ecological balance of the region.

Table-3: Details of Outages before and after year 2006

Sl. No	Reason of outage	Till 2006	After 2006		
			Khandong	Kopili	
				Kopili P.S	Kopili Stage II
1	Cooler tube failure	Rare	27 times	50 times	4 times
2	CW line and fixtures leakage	Rare	24 times	2 times	9 times
3	Leakage/ break down of turbine component	Nil	15 times	12 times	1 time

**Source*: Kachhal. P., Sharma, P., Pathak, R.P., & Ratnam, M. (2013). Assessment of Durability of Coated Steel to be used in Manufacture of Hydro-Mechanical Equipments Operational in Acidic Hydro Environment. *International Journal of Research in Chemistry and Environment.* 3 (3), p. 102 (pp. 100-105).

Concerns over damming the river Kopili for development purposes reached new heights when the Lower Kopili Hydro Electric Project (LKHEP) was proposed in 2012. The project site is located at Boro Longku village in Dima Hasao district

and is to be developed by the APGCL. The Lower Kopili dam will be a concrete gravity dam with a height of 70.13 metres and will consist of two power houses. The first power house will have an installed capacity of 110 MW (2 x 55 MW) while the second power house will have an installed capacity of 10 MW (2 x 2.5 MW+1 x 5 MW) making the total installed capacity of 120 MW.[1] The catastrophic flood of 2004 in Assam that affected large areas in Nagaon and Morigaon districts of Assam resulting in loss of lives and property and the issue of acidic contamination of the Kopili water have generated consciousness regarding the harmful consequences of dams. It is argued that loss of agricultural land, submergence of forest areas, heavy flooding in the downstream areas might destroy the traditional livelihood practices of various ethnic communities in the region.

Dams are the symbols of the dominant development paradigm based on the principles of industrialisation and urbanisation as the prerequisites of economic growth. These massive engineered structures symbolise modernity, economic achievement and triumph over nature. The environmental and social impacts of such actions are generally held as 'given' which can be minimised and mitigated. But do dams as 'symbols of development' bring benefits to all? Do dams contribute towards livelihood security? Different sections of people have different opinions on the matter. Narratives collected for the study from local communities in Umrongso, Dima Hasao (location of the dam, upstream area) and Nagaon (downstream area) make the case more illustrative. Names of the interviewees are however changed maintaining research ethics. For locals like Ranjit, a Forest Guard, Panimur forest range, Dima Hasao, the river Kopili assumes a sacred place for the members of the Dimasa community. He remarks,

> '*the Kopili river is a sacred river for the entire Dimasa community particularly in the Umrongso region. The Kopili river was abundant with fishes before with the local population engaged in fishing activities which is one way of securing livelihood. But today there is no fish in the Kopili river.*

Ranjit has been working as a Forest guard in the area for a long period and has seen the changes that took place in the river after the construction of the project. Particular importance is the mention of the declining number of the fishes in the

river. Fishing is an important livelihood activity for the locals there, which has been impacted after damming the Kopili. In a similar tone, Devika, a college teacher based in Nagaon who originally hails from Umrongso, Dima Hasao and her father, a retired government official staying in Umrongso revealed the dissatisfaction of the local population with the Kopili dam. According to them,

> *'The Kopili river is the main source of livelihood for the Dimasa people with agriculture and fishing being completely dependent on the waters of the Kopili. But the construction of the dam brought about tremendous damage to the people. The reservoir submerged the low lying areas which were the prime agricultural lands. It is hard to find low lying areas in hilly regions which are more productive. Although electrification was guaranteed after the dam which also led to the emergence of the township of Umrongso but for many of the indigenous population, dam brought poverty and misery. They lost their land, their cattles, their agricultural produce....'*

Dams lead to submergence of land and forests, habitat destruction, displacement of indigenous population, flood in downstream areas due to release of excess water, especially during monsoons, reduced water flow downstream and a host of other problems causing tremendous distress to the local population which have been dealt with at length in the previous chapters. Flood has been a perennial problem in the Brahmaputra valley. The districts of Nagaon and Morigaon in Assam had experienced severe floods in 2004 due to release of water from the Kopili dam. For local farmers in Nagaon, the memory of the 2004 floods is still afresh in their minds. They remarked that people got very little time to prepare. Suddenly, within hours, the water of the Kopili was everywhere. People had to take refuge in the Highway. Many families were destroyed with lives and property lost and damaged.

But not all view such development in a negative manner. It has been observed that the construction of the Kopili hydro electric power project which led to the creation of a township in Umrongso also opened up avenues for securing livelihood opportunities for the people. Communication facilities increased as the town of Umrongso developed and with increased movement of people, livelihood

opportunities also increased. From a gender perspective, dams became an equalizer. For, many women view it as an opportunity to improve their standard of living. Rani, a Bodo woman shopkeeper in Borolangpher, remarked,

> *Earlier, women would be either confined to the house or would be involved in cultivation. Now, along with agriculture, women can also start small business and earn profit and look after the family.*

In a similar tone, Viren, a Hotel owner, 29 Kilo, Dima Hasao said that the dam has indeed increased his business prospects. He remarked,

> *With the dam being constructed here, there is increased mobility of people in the area. I get more customers now. Many people come to my shop to have food.*

According to Bishnu Hazarika, a contractor based in Nagaon, construction activities like dams generate income for them. They expressed dissatisfaction on the failure of the Government in generating employment opportunities for the youth. For them, many people are turning towards self-employment not only by choice but also due to compulsion and even have to survive as small contractors despite being academically qualified. He says,

> *If Government fails to create jobs, we have to create it for ourselves. Nowadays, a large number of young boys are becoming petty contractors despite being graduates or post graduates. Activities like dam construction opens up opportunities for them through which they sustain their families. A hungry stomach cannot think about environmental issues; it only thinks about survival issues.*

These words reflect the dilemmas of development. Access to health, education and a decent standard of living together with a safe and clean environment are identified as the basic parameters of human development but poverty stands as an obstacle to achieve these goals. These words "hungry stomach thinks only about survival issues" echoes in the minds and reflect the dilemma of what to do or not to do. Hence, the role of the Government assumes tremendous significance in

ushering in the goals of development – equity and sustainability. But the shift towards a capitalist model seems to have pushed these principles to the periphery where survival of the fittest in the competition takes precedence.

Prisoners of Uncertainty: Dams as a Need

The narratives point to the fact that dams as part of the contemporary development paradigm followed by the Indian State in the post-independence period have failed to strike a balance between economic growth and people's welfare. Conversations with the local communities in Dima Hasao and Nagaon reflected that though they have faced hardships through submergence of land and damage to life and property by floods caused by the construction of the Kopili Hydro Electric Plant, yet, they perceive dams as necessary. Contentment that their children are getting educational facilities and could study in homes with electricity instead of candle lights or earthen lamps or kerosene lamps make the environmental and social costs of dams looks smaller. Better connectivity, increased economic opportunities and a fear of uncertainty over further loss generate a feeling of acceptance of the benefits of the development process despite the inequities and unsustainabilities created. This reminds of the words of Kavita Philip (2003) who argues that the change in the attitude towards nature was not merely a 'cultural' shift from tradition to modernity but reflects an integral part of a shift in the modes of production and representation. The categories of labour, production and property were the key to understanding such a shift.[2] She further noted that the contradictions between scientific knowledge and pre modern modes of discourse should be looked at not as a "showdown between the dark forces of irrationality and the enlightened rationality of scientific knowledge, but as a historically situated process of conflict between two rational systems of knowledge about nature, undergirded by unequal structures of economic, political and social practice."[3]

The need for dams despite their flaws shows how people are entangled and imprisoned in the web of development. People become *prisoners of uncertainties*; there is conflict of uncertain future generated by a comparison between pre-modern (pre-dam) and modern (after-dam) scenario. Thayer Scudder's (2005) argument that 'large dams remain a necessary development option despite

their flaws' seems to hold true here. Scudder opined that dams as part of the development strategy which in the long run degrades critical natural resources, remain necessary, for in the short run, at least they provide benefits like supplying water for the rapidly expanding urban population, provide electricity to the populations and to the industries which generate employment opportunities, to increase irrigation in areas where small reservoirs dry up during drought and also to provide foreign exchange for development purposes by exporting hydro power.[4] This seems to be the tragedy of the present day development paradigm. There is definitely recognition of the environmental and social costs that projects like dams entail but at the same time, they become necessary to meet the needs of the ever growing human population as a measure for poverty alleviation and also as a support to the uncertainties that factors like climate change and global warming present. In fact, Cernea (1997) also categorically mentioned that the process of development will continue to make changes in patterns of land use and water use, thereby, making relocation of population at times unavoidable. But that does not mean that the inequitable distribution of the 'gains and pains' of development is inevitable.[5] A respect for people's rights, adherence to social justice and equity and attempts towards sustainability and inclusive development can create conditions for synergy between sustainable development and sustainable livelihoods.

Conclusion

The Kopili Hydro Electric Plant is a milestone in the area of energy security of the entire North-eastern region and an important marker of economic development of Assam. Dams, per se, is not seen as bad, but it is the policy of the State towards dam building in an unprecedented way with the main objective of hydropower generation and the failure of the institutional mechanisms to effectively look into matters of displacement, resettlement and environmental protection that is being questioned. Sustaining rivers and livelihoods by understanding, protecting and restoring ecosystems at river-basin level is vital to promote equitable human development and welfare of all. Given the fact that large dams have far-reaching consequences, it is imperative to integrate the issues of equity, distribution, rights and social justice in the planning and execution frameworks of the development process so as to obliterate the inequities inherent in the present frameworks.

Notes :

[1] https://www.livemint.com/Politics/ODPQwdteICooppZuSdSRPI/NarendraModi-dedicates-Sardar-Sarovar-dam-to-nation-on-his.html accessed on 12.11.2018

[2] Vagholikar, N. & Das, P. J. (2010). *Damming North East India*. Kalpavriksh, Aaranyak and Action Aid India, p. 3, (pp. 1-20) accessed from https://chimalaya.files.wordpress.com/2010/12/damming-northeast-india-final.pdf on 29.10.2015

[3] Government of India, Ministry of Water Resources (2012). *National Water Policy*, p.4 accessed from http://mowr.gov.in/sites/default/files/NWP2012Eng6495132651_1.pdf on 12.11.2017

[4] Dutta, D. K. (2011). *Bhupen Hazarikar geet aru jiban rath*. Panbazar, Guwahati : Banalata, p. 199

[5] https://sandrp.in/tag/kopili/ accessed on 03.07.2018

[6] NEEPCO (2016), data received under the Right to Information Act (RTI), 2005 bearing number NEEPCO/ED (CP)/RTI/R-1/ (Part-23)/2016-17/194 dated 26.08.2016

[7] http://neepco.co.in/projects/hydro-projects/kopili-hydro-electric-plant accessed on 30.06.2018

[8] Data collected form NEEPCO Office at Umrongso

[9] Sharma, P., Vyas, S., Sharma, S.N., Mahure, N.V., Rustagi, A., Sivakumar, N., & Ratnam, M. (2011). Acid Mine Discharge- Challenges Met in a hydro power project. *International Journal of Environmental Sciences*. 1 (6), p. 1277, (pp. 1274-1282) accessed from http://www.ipublishing.co.in/jesvol1no12010/EIJES2078.pdf on 01.12.2013

[10] SANDRP. (2013). *Lower Kopili HEP: Outstanding issues must be resolved*. accessed from https://sandrp.in/2013/09/21/eac-must-address-issues-first-before-clearing-lower-kopili-hep/ on 15.03. 2017

[11] Philip, K. (2003). *Civilising natures: Race, Resources and Modernity in Colonial South India*. New Delhi: Orient Longman Private Limited, p. 72

[12] Philip, K. (2003). *Civilising natures: Race, Resources and Modernity in Colonial South India*. New Delhi: Orient Longman Private Limited, p. 131

[13] Scudder, T. (2005). *The future of large dams: Dealing with social, environmental, institutional and political costs.* London, Sterling, VA: Earthscan Publications, p. 2

[14] Cernea, M. M. (1997). Impoverishment risks and reconstruction: A model for population displacement and resettlement. *World Development*, 25 (10). October (pp. 1569-1588) accessed from https://commdev.org/wp-content/uploads/2015/06/Impoverishment-Risks-Risk-Management-and-Reconstruction.pdf on 01.04.2016