HEINRICH BÖLL STIFTUNG
INDIA

Infrastructure development in the Northeast: Hydropower, natural resources, legal and institutional frameworks and compliance

Manju Menon

Abstract

In 2000, the central government declared Northeast India as India's hydropower hub. Over 165 large dam projects were proposed to come up in the region. However, nearly two decades on, this proposal to regulate the region's water resources for its development remains unimplemented. This article will look into the government hype and its failure to construct dam projects in the Northeast region. These projects are held as crucial to India's energy and environmental security as well as the economic development of the country's marginalised eastern borderlands.

Author's profile

Manju Menon is a senior fellow at Centre for Policy Research. Her research interests are resource politics, environmental regulation and participatory governance. Her main areas of study are the regulation of energy, transport and urban infrastructure projects. She collaborates with local community organisations on research projects and advocacy campaigns for environmental governance reforms. She has authored several popular articles and papers on these topics.

Manju is a member of Kalpavriksh and advisor to the environment justice program of Namati, an international organization dedicated to legal empowerment. She has led Namati's India, Myanmar and Indonesia programs.

Infrastructure development in the Northeast: Hydropower, natural resources, legal and institutional frameworks and compliance

In the last months of 2018, the Dibang Multipurpose project received a go-ahead from the National Green Tribunal (NGT) after long legal battles. This project is among the 165 dam projects that were proposed for Northeast India in 2000. Hailed as “clean and cheap”, these dam projects, mainly situated in the state of Arunachal Pradesh, would purportedly help sustain India’s energy and environmental security in the era of climate change by adding more non-carbon power to the electricity grids.

These projects proposed by the central government have been unpopular with the public of the Northeast as well as a wide range of independent environmental researchers. Their ministerial approvals based on expert appraisals took years. In fact, the projects also met with much political criticism including from the Bharatiya Janata Party (the party that is now in power at the Centre) during the period from 2010 to 2014. The collective opposition was so effective that these projects did not materialise for 15 years, except for the half built Lower Subansiri Dam. This project has been called the tomb of India’s hydropower program.[1]

Years have passed, but the Central and Arunachal governments continue to be attached to these and several other hydropower projects in the region. Their attachment to these projects belies the shifts that have taken place in the energy sector over a decade and a half. The revival of hydropower in Northeast India under the new regime at the Centre since 2014 shows the intransigence of politics that threatens both development in the Northeastern region and its socio-ecological dynamics.

Hydropower based development

Lower Subansiri and Dibang dams are iconic projects of India’s hallowed water bureaucracy. The projects are massive structures of 116m and 288m height proposed to be built on free flowing Himalayan rivers, the Subansiri and the Dibang by NHPC Ltd. (earlier National Hydroelectric Power Corporation), a public sector dam builder. These rivers gush down from the Arunachal Himalaya to join and form the Brahmaputra. They wash Assam’s plains every year, causing massive floods but also leave behind rich soil sediments. For years, economists and planners have tried to regulate these rivers and turn them into a valuable resource. But controlling these rivers has been far from possible.

[1] https://scroll.in/article/718809/arunachals-unfinished-lower-subansiri-dam-could-be-tomb-for-indias-giant-hydropower-projects

In the early 2000s, India's energy requirements were expanding at the back of a rising economic growth rate. To the BJP government in power then, hydropower offered a seemingly simple solution to provide non-carbon fuel for this growth. One could call the Northeast hydropower programme, the NDA's energy transition version 1.0. Dams designed in the 1970s were revived as part of this programme in the attempt to green India's economy by increasing the share of hydropower in it.

At the time when these new dam proposals for Northeast India were announced, India's dam building efforts had already caused large scale displacement, tremendous ecological impacts on vast landscapes and a near shut down of the sector due to lack of domestic and foreign investments. Yet, the Northeast dams were argued as necessary to alter Northeast India's pervasive underdevelopment.

One benefit that was expected from large dams in this region was flood control. The Dibang Multipurpose Dam is designed as a conventional storage dam with a flood cushion component to protect downstream areas from flooding. More importantly, the projects were geared to be profit-making ventures by maximising their power generation capacity. Lower Subansiri is a "Run of the River" or RoR project. A regular RoR is a benign project that generates power from undammed flowing water. But the Northeast RoRs are aimed to be peaking power stations. These projects involve creating a 'head' by stocking water behind a large dam for 24 hours and every evening when the demand for electricity peaks, the waters are released to pass over turbines to generate power.

The amendments to the Electricity Act of 2003 opened up a new front for private investment. Once electricity production was thrown open to private actors, dams in Northeast India also presented a means of attracting financial capital into this corner of India. The 1,750 MW Lower Demwe project proposed on the river Lohit, a tributary of the Brahmaputra that flows through the Mishmi hills in the eastern part of Arunachal Pradesh, was among the hundreds of new ones that hoped to profit by investing in this sector which had zero fuel costs, extremely low operation costs and high returns through its lifetime. Besides, the public sector dam building organisations, other prominent project developers include Reliance and Jindals besides many smaller players looking to expand their construction portfolio[2]. The state government of Arunachal Pradesh holds 26 per cent share in the Athena Demwe Power Limited, an SPV with Athena Energy Ventures Infraprojects Private Limited. As the state where most of the proposed dams and their associated infrastructure would be built, Arunachal Pradesh was hoping to see capital flow in at an unprecedented scale.

[2] https://economictimes.indiatimes.com/industry/energy/power/hydelgate-why-arunachal-pradeshs-hydel-boom-is-going-bust/articleshow/19790466.cms

Environmental impacts

Globally, hydropower dams are being redefined as renewable energy projects. But in tropical regions rich in biodiversity and where communities have socio-cultural and economic uses of rivers, such projects can have serious consequences. Scholars have suggested that dams in the tropics are an anatopism or 'out of place'.[3] As expected, the projects proposed in Northeast India, a region that is part of the Indo-Myanmar biodiversity hotspot, one of the 25 recognised global biodiversity hotspots and where indigenous communities are the traditional stewards of the region's forests, ran into consent troubles.

Large projects seeking environmental approvals have to undertake mandatory public hearings. The hearings for the Dibang project were cancelled or disrupted a dozen times between 2007 and 2013 because of a near total community opposition before the government could claim that they were "successfully" done. The Lower Subansiri and Lower Demwe public hearings were stretched by protracted negotiations and demands for jobs and compensations. They also faced opposition due to displacement, forest loss and takeover of community lands by the project.

Forest loss due to three hydel projects
L Subansiri: 4040 ha
Dibang: 4577ha
Lower Demwe: 1416 ha

The projects' environmental impact assessment reports limited the impact zone of the projects to a 10 km radius, an arbitrary standard. This helped to contain the studies, present the projects as less damaging and negotiate the project with fewer affected people. This left the people of Assam out of the consent procedures for most projects in Arunachal Pradesh, even though the dams would affect them in the most profound ways. Nearly 20 million people live in the Brahmaputra valley. They are, as Richter and others note, the people in the "shadow zone" of these projects, uncounted for and unspoken to.[4] The people of Assam could engage with these dams only through the antagonistic routes of protests and litigation because they were ignored by the project authorities. In the view of the Assamese protestors, these project studies legitimised water grabbing by an upstream entity.

[3] https://link.springer.com/chapter/10.1007%2F978-94-007-2798-4_2

[4] https://core.ac.uk/display/27853584

The Northeast dams also struggled to obtain the nod of environmental experts. The national level Expert Appraisal Committee (EAC) for hydropower projects and the Forest Advisory Committee (FAC) are in charge of recommending environmental and forest approval to large projects. An approval from the standing committee of the National Board for Wildlife (NBWL) is needed in case of projects that affect Protected Areas. The Dibang project was rejected twice by the FAC. It took the intervention of the Cabinet Committee on Investments (CCI) and the Ministry of Power and a reconstituted FAC in 2015 to revise this decision. The project was legally permitted to use over 4,500 ha of forest land holding 350,000 trees.

Rich biodiversity at a dam site. Photo by Manju Menon

The non-official expert members of the NBWL including noted bird expert and former director of the Bombay Natural History Society (BNHS), Dr Asad Rahmani, practically staged a protest at the meetings to discuss the approval for the Lower Demwe project. While the senior most government officials of the Arunachal government claimed that the delay was frustrating the people of the state, the experts argued that the project would affect Protected Areas such as the Kamlang Wildlife Sanctuary and the Dibru Saikhowa National Park in addition to several riverine islands or chapories, grasslands and forests. The project would use 1,415 ha of forest land. Finally, the then environment minister, Jayanti Natarajan, who headed the NBWL, approved the project in December 2011.

These committees received scores of letters from independent experts, environmentalists and protestors pointing to the underestimation of impacts in the EIA reports done with the aim of obtaining approvals. Ideally these complaints should have put a cap on these projects, but all the projects received approvals based on questionable arguments and were subsequently challenged in courts.

Water regulation

Among all the impacts that the projects would cause, the extreme regulation of river flows downstream of the dams has been the most contentious and has stoked statewide protests in Assam. The release of dammed water by projects every evening to generate power would permanently alter the very nature of these rivers. The flow regime imposed by the projects, which activists called the daily starving and flooding of the river, would destroy the seasonality of rivers in this region and all the livelihoods attached to them such as fishing, floodplain farming, driftwood collection and grazing during the lean season.[5]

Debates on downstream impacts of dams, mainly provoked by Assam's concerns, have thrown up the question of how much water does a river need? So far, there is no consensus on what should be the ecological standards imposed on large hydraulic structures so that rivers, our main source of freshwater, are not turned into dead channels. Is flowing water a waste or a valuable environmental feature? What should be the tradeoff between maintaining water stocks for power generation and ecological flows for human and non-human needs? Should these decisions be based on certain governance principles or must it be left to economists and engineers? The answers to these questions have not been ascertained before investing in the Northeast dams.

There are also no scientifically backed regulations addressing the role of dams in water disasters. Last year, the Kerala floods brought to public view the contribution of dams in such situations. In the Northeast, monsoon floods have been routinely exacerbated by dam discharges in the neighbourhood. During the 2018 monsoon, both the Doyang Dam in Nagaland and the Ranganadi project in Arunachal Pradesh, expelled their dam waters increasing the scale and intensity of the floods. Yet their attribution to the destruction caused to over 2,000 villages in Assam is left unaddressed.[6] These projects are much smaller in comparison with the new ones proposed to come up.

In this region, the problems of river regulation are queered further because most of the rivers on which dams are proposed flow through territories beyond Indian borders. India has no sources for real time hydrological information to manage these rivers rationally. Secondly, the Indian government has proposed multiple projects on each of the river basins. The plans are based on impromptu policies, made on the go, of the minimum distance between projects and minimum flows from dams.

---

5 http://www.sanctuaryasia.com/magazines/conservation/5289-are-big-dams-leaving-india-high-and-dry-by-neeraj-vagholikar.html

6 https://www.newsclick.in/why-assam-really-needs-worry-about-flood

Due to public pressure, expert appraisals of dams now require cumulative impact studies and carrying capacity studies in addition to the EIA reports for individual projects. However, the Lower Subansiri, Dibang and Lower Demwe projects are left out of these studies on the claim that they are the first to be built in their respective river basins. All three projects received approvals as single projects.

Litigation

The three projects have gone through long years of litigation. The environmental clearance (EC) of Lower Subansiri project was challenged in 2003 and the case went on for six years in the Supreme Court before the EC conditions were settled in favour of the Arunachal government. But this did not resolve the downstream concerns on the ground. Protestors in Assam have stonewalled the project construction since 2011. In 2013, Aabhijeet Sharma of an NGO, Assam Public Works filed a case in the National Green Tribunal (NGT), a specialised green court, over these unresolved issues. The judgement of the NGT in this case states that a “neutral” three-member team will mediate a way forward for the project. Their report will inform the reappraisal of the project by the Environment Ministry. However petitioners of the case opposed the ministry’s selection of these members as they were retired employees of government institutions well entrenched in India’s large dam bureaucracy. The NGT upheld their selection to the committee in November 2018. The petitioner of the case has challenged the NGT’s decision in the Supreme Court.

After its journey in the approval tunnel for eight years, the legal challenges to the approvals for the Dibang project went on for three years in the NGT. Finally, in November 2018, the project’s approvals were upheld because “more stringent” conditions had been imposed on the dam including reducing the dam height by 10m to reduce the loss of forests by 445 ha. The Lower Demwe project’s approvals were challenged in the NGT for eight years starting 2010. In this case, the final judgments and Union environment minister Dr. Harsh Vardhan’s decision as NBWL chief have tied the project’s operations to the recommendations of a wildlife study. But the study itself will take two more years to complete.

Regulatory and legal challenges to the projects have forced the production of several new studies by government agencies. The studies influence and in some cases contradict the water, forest, land and other calculations done by project EIA reports. Like the EIAs, the new studies generously model different scenarios of water regulation giving the illusion that these have no real consequences for the people of the region. Irrespective of their methodologies or approaches, these studies are tailored to encourage private investment in

dam projects in the region. The acceptance of these studies and simulation models in the final decision-making on the dam projects has technicalised the subject of water management in the Northeast.

The opposition to the projects within and outside courts has restricted the future operations of the dams to balance development with environmental concerns. For example, the NHPC was pushed to keep one turbine of Lower Subansiri running through the day to maintain water in the river and the NGT recommended a monitoring committee to oversee the implementation of Dibang project's environmental measures. The legal sanction to these projects poses an unprecedented challenge to regulatory institutions to monitor their operations in one of the most ecologically and seismically sensitive regions of the world. The period of construction and then the lifelong regulation of downstream flows once the projects are operational would require intense monitoring of multiple dam proponents on a daily basis. With the Arunachal Pradesh government having a considerable stake in the profits from running these dams, the regulatory system will have to reign in the state government and dam builders.

A sacred site downstream of Lower Demwe project. Photo by Manju Menon

Biodiversity features of the region

The region is part of the Indo-Myanmar biodiversity hotspot, one of the 25 recognised global biodiversity hotspots. It contains more than one-third of India's total biodiversity and over 65 wildlife sanctuaries and national parks are spread out over the eight states, with several more proposed.

The region contains high levels of endemism (species found only here), species diversity and endangered or threatened species:

It contains at least 7,500 species of flowering plants including 700 species of orchids, and many medicinal plants. The plant species richness in all states is over 1,500 with Arunachal Pradesh having nearly 5,000 species. Out of 1,500 endangered floral species, 800 are from this region.

The Indian Council of Agricultural Research recognises the region as a centre of rice germplasm, also important gene pool for citrus and banana and of nearly 800 species consumed as food plants, about 300 are from the Northeast. Moreover, out of 60 species of cane and 150 species of bamboo found in India, 26 and 63 species respectively are found in this region.

Faunal diversity is just as rich. Over 3,500 species of insects, 236 fish species, over 500 bird species and 160 mammal species have so far been found in the region. Four out of the six big cats of the world, the tiger, the leopard, the clouded leopard and the snow leopard are found in Arunachal Pradesh. Nine out of India's 15 primate species are found here including the endemic golden langur, two endangered macaques and the highly endangered slow loris. The endangered red panda and all the bear species found in India are also present in this region.

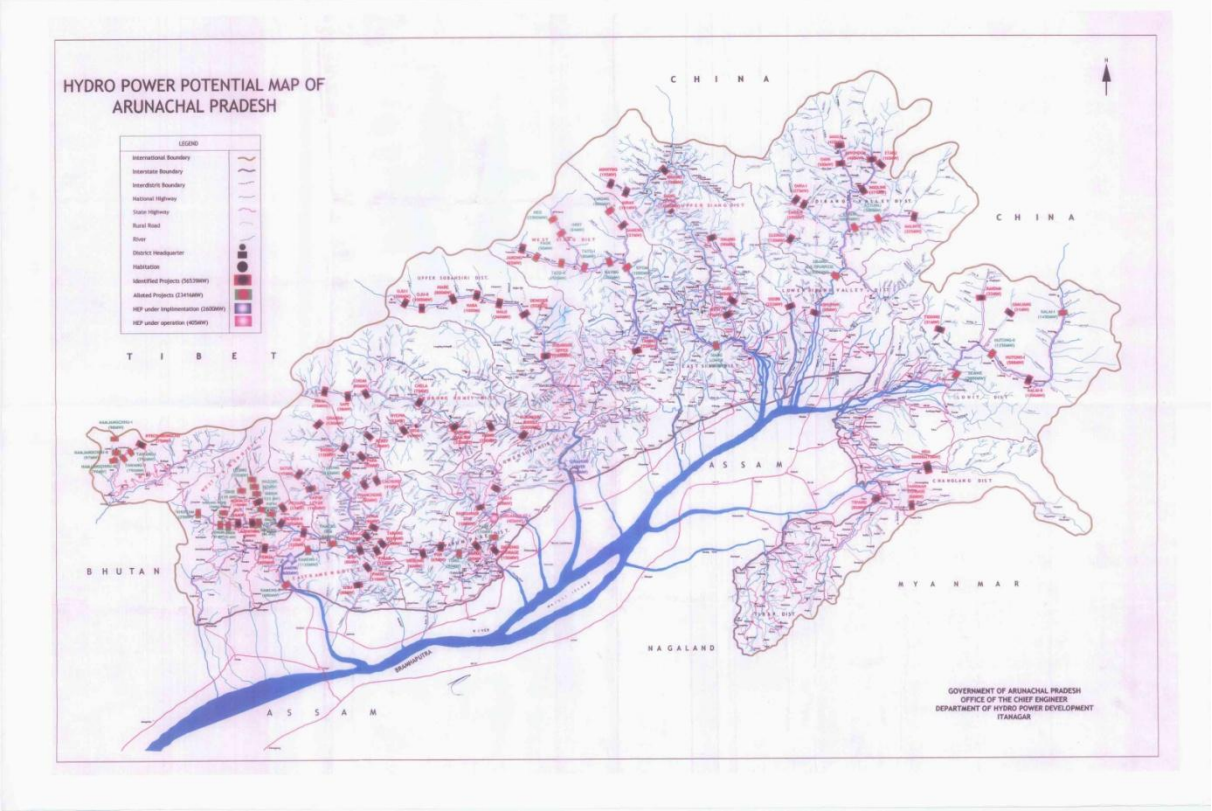
Of the 28,000 wild elephants found in India, one-third is found here. The grasslands and forests are also important for the one-horned rhino and the water buffalo. The region shows very rich amphibian diversity with more new species being added to the list.

The Brahmaputra river has a population of the critically endangered Gangetic river dolphin and the gharial.

The region's biodiversity is still being discovered. Scientists are reporting range extensions, rediscoveries and new species through their surveys. (Compiled from Chatterjee et al, Biodiversity Significance of Northeast India, WWF-India, June 2006).

More importantly, the additional safeguard conditions that bind projects create a conundrum for project investments. To be in compliance with the revised parameters, projects will have

to operate under less favourable cost-benefit calculations. Their financial arrangements with the state government, with lending banks and the power purchasers to whom they have promised merchant sales may have to be renegotiated. Who will underwrite the financial losses due to these aspects, in addition to the cost overruns due to project delays? The cost of the Lower Subansiri project, for example, has more than doubled to over Rs.15,000 crore since 2003[7]. News reports state that the Athena Power Company is already battling insolvency and has urged the Arunachal government to bail it out. Would these costs be palmed off to consumers or tax payers as is usually the case?



Map showing dam sites in Arunachal Pradesh, India. Goverment by Arunachal Pradesh.

Water politics

The spate of legal clearances to these projects notwithstanding, the political problem caused by the dam proposals looks more menacing today. Water sharing has been a historical problem in South Asia. Unusually, the protests against these proposed dams in Northeast India have politicisied the issue of interstate water sharing before the dams are built, unlike in other parts of India where water conflicts have blown up after projects have come up. How will the sharing of water between Assam and upstream dam building states like Arunachal

7 https://www.telegraphindia.com/states/north-east/green-tribunal-orders-study-on-dams/cid/1530338#.VWRFz9Kqqko

Pradesh be arrived at? Will it be in favour of project developers and the Arunachal government, which seeks to generate 'hydrodollars', as stated by the former chief minister Dorjee Khandu, or will it accommodate a more fair approach to water management in the region?

In 2010, this question was taken up by political parties in opposition to the Congress government in Assam as well as in Parliament. The political backlash to dams in Arunachal Pradesh forced the setting up of an Assam expert group and a house committee of the legislative assembly to assess the downstream impacts of these projects. In September 2010, the then Union environment minister Jairam Ramesh made a trip to the Brahmaputra valley to meet protestors. He came back convinced of Assam's problems with the dams. But it seemed too late to change the course of events. By that time, his party's members in the state were complicit by omission or commission in the over hundred deals and monetary arrangements struck with first time dam builders.

Today it is the turn of the BJP-led governments in Assam, Arunachal Pradesh and at the Centre to take a political decision on these dams. While these projects were being litigated, the energy sector has undergone huge changes and solar and wind power are far more competitive than traditional energy projects. Rather than eschewing destructive mega dams, the central government has recently drafted policies to make large hydro projects more lucrative for private investment. In March the Indian cabinet declared that all large hydro (over 25 megawatt) will be considered renewable energy. This allows the hydropower sector to benefit from more competitive pricing and longer debt repayment. The policy changes also relieve projects of the 'burden' of financing the flood moderation and infrastructure building for roads and bridges.

The Central government's policies on energy and the environment do not leave hope for reflexive decision making on hydropower projects in the Northeast or other parts of the Himalayas. There is hardly any developmental justification today to push these hydropower projects that are unpopular and outdated. Until more enlightened policies for managing the water resources of the Northeast are arrived at, the environment and development of Assam and Arunachal Pradesh are in jeopardy.

Disclaimer: This article was prepared with the support of the Heinrich Böll Stiftung India. The views and analysis contained in the publication are those of the author and do not necessarily represent the views of the Heinrich Böll Stiftung.