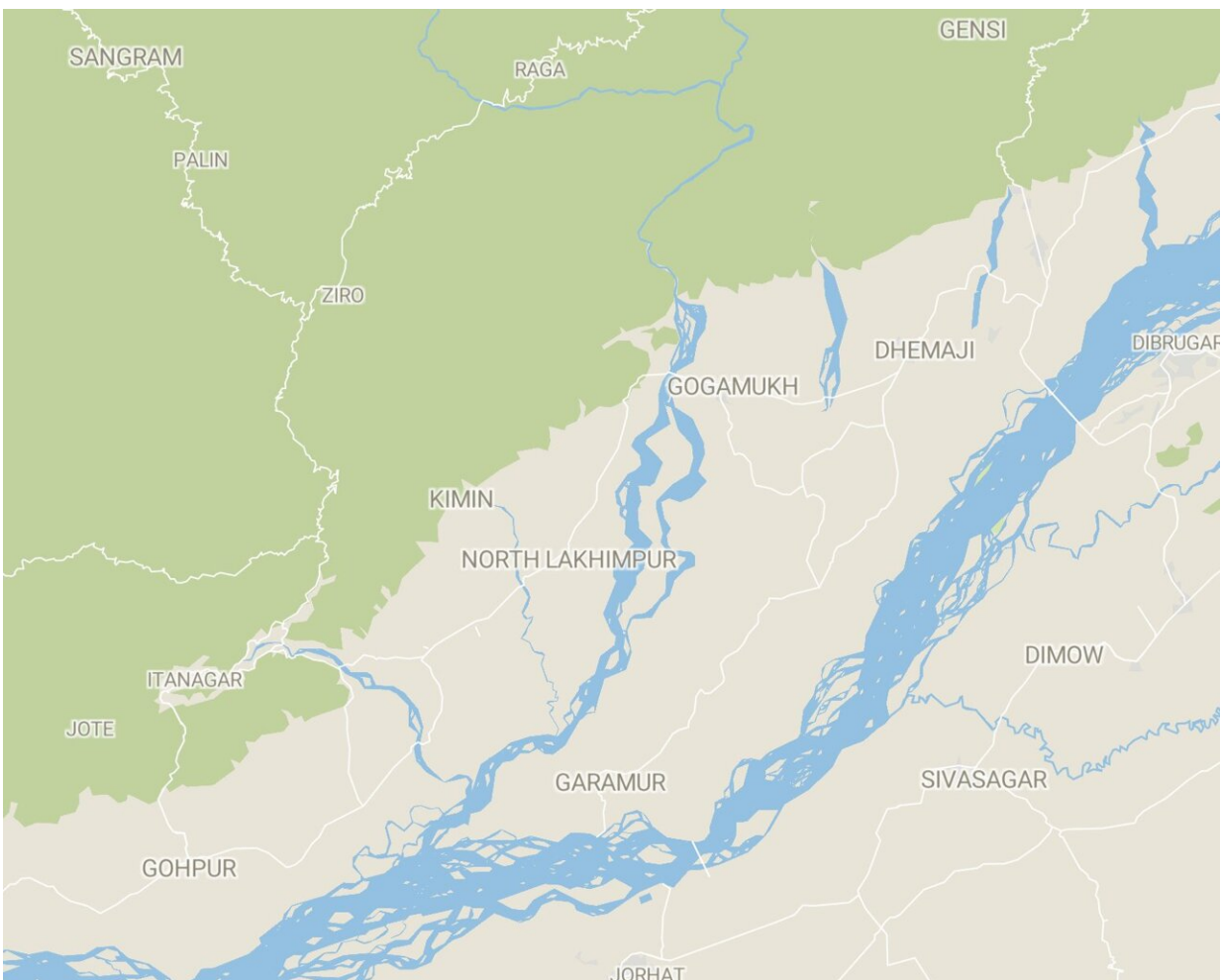


India's new mega-dam will roil lives downstream with wild swings in water flow every day

September 4 2024, by Parag Jyoti Saikia



Credit: The Conversation/CC-BY-ND

"Hey Rupam, open the door. Take this fish," a woman yelled from outside. I was sitting in the kitchen at my friend Rupam's house in rural northeast India. It was the heart of monsoon season, and rain had been falling since morning. The woman must have been shouting because the noise of the rain on the tin roof muted everything else.

The aunty who lived next door stood outside with a large bowl of [Boriala fish](#). Her husband had gone fishing on the [Subansiri River](#), which flows next to the village, and he had fished all evening. "My husband cannot stay indoors in this weather," she said in Assamese, the local language. "You can catch a lot of fish during this time."

The [monsoon season](#) has long brought a bounty of fish from May to September for people living downstream.

However, this is likely to change once the [Subansiri Lower Hydroelectric Project](#), one of the largest hydropower dams in India, is completed upstream. Expected to be [fully operational in 2026](#), the dam will change the natural flow of the river.

For most of the day, the dam will hold back water, letting only a small amount through, roughly equivalent to the region's dry season. But for about four hours each night, it will release water to generate power, sending a raging river downstream almost like during monsoon season.

The dam will not only block the movement of fish, but also change the way people living downstream experience the river's flows.

In a 2010 [report on the likely impact](#) of the Subansiri Lower Hydroelectric Project on downstream populations, experts from three premier institutes of Assam—the central state of northeast India—identified several concerns for downstream communities, including flood and erosion risk, earthquake risk, the loss of water flow

for fishing and groundwater recharge, and the survival of species including river dolphins.

Now, a decade later, as the [dam is nearing completion](#), the central question remains: What will happen to people like Rupam's neighbor, whose lives and livelihoods depend on the river?

In 2023, I lived in a village next to the Subansiri River. My [dissertation research](#) brought me there to study how this [hydroelectric dam](#), under construction since 2005, is affecting communities downstream.

'Small displacement' by 'benign' dams

Northeast India has been the focus of hydropower dam construction since the beginning of this century. In order to secure the country's energy future, [Central Electricity Authority of India](#) in 2001 identified the Brahmaputra River basin as having the highest hydropower potential—63,328 megawatts. It proposed constructing a whopping 168 hydropower dams in the region.

This earned the region the nickname "[India's Future Powerhouse](#)." The Subansiri Lower Hydroelectric Project was the first project.

The government sees the mega-hydro dam initiative as a win-win. It expects the dams to increase India's energy security while also developing large infrastructure networks in one of India's contentious borderland regions.

About 80% of the power for "India's Future Powerhouse" is proposed to be generated in Arunachal Pradesh, the largest state of northeast India. China has repeatedly challenged India's [sovereignty over Arunachal](#) since the latter's independence in 1947.

Building dams in Arunachal Pradesh has another advantage: very low population density. It has about 17 people per square kilometer, and over [80% of Arunachal's total territory is forest](#). That helped the government of India to argue that "there is relatively '[small displacement](#)' by submergence as compared to that in other parts of the country and therefore these projects are benign."

However, these projects are in [no way benign](#) to the people who live downstream.

The disruption to lives downstream

The flood plains of the Subansiri are home to people belonging to indigenous communities and lower castes of Hindu caste hierarchy. [Mising—the largest indigenous community](#) in the downstream region—call the river "Awanori," which means "mother river."

As part of my long-term ethnographic fieldwork, I observed how a range of [livelihoods in the downstream region](#)—fishing, agriculture, livestock grazing, recovering driftwood and transporting people by boat in remote areas—are all dependent on the 79-mile Subansiri River. I interviewed people who live there and attended community events to understand how the river plays a big role in everyday life.

Their reliance on the river has been based on natural, uncontrolled flows. Once the dam is completed, the river flows will be controlled by the [National Hydroelectric Power Corporation](#).

Once in operation, the dam will block most of the river's flow for 20 hours of the day, and then release that water—about 2,560 cubic meters per second—to power turbines that can meet peak electricity demand between 6 p.m. and 10 p.m. every night. During the 20 nonpeak hours, the dam would release less than a tenth as much water.

What happens when the river flow changes?

When the dam was first proposed, there was no plan to release water during the nonpeak 20 hours. Activists argued that cutting the water's flow would have made it [impossible for any aquatic animal to survive](#) downstream.

In 2017, the nonpeak-hour flow proposal was increased to a range of 225 to 250 cubic meters per second. That year, the National Green Tribunal, which resolves civil cases related to the environment, [asked the National Hydroelectric Power Corporation](#) to ensure a minimum level of water for the survival of [Gangetic dolphin](#), India's national aquatic animal. This judgment helped pave the way for restarting the construction after an eight-year delay. However, the tribunal did not address how people living downstream would be affected by the changes.

The calculation of minimum flow only for the survival of one aquatic mammal leaves out numerous ways the flows of the Subansiri matter to people and other animals.

The dam itself threatens the downstream existence of many fish varieties, including the [golden mahseer](#). It will also alter the flow and sediment supply in the river, and the abrupt and powerful [flow](#) for four hours each night will have [greater scouring capacity](#) and risks eroding the riverbed and banks.

Traditionally, from October to April, the dry riverbed and sandbar islands have been used to grow early-maturing [ahu rice](#) and mustard before the monsoon flood waters arrive. People also graze their livestock in the islands and in the fields after crops are harvested.

Once the dam begins flooding the river for four hours a night, however, the riverbed and sand-bar islands will be largely unusable.

The rainy season when the river floods is the most productive time for fishing and collecting driftwood. However the dam will obstruct the movement of fish and trap wood behind the dam. So, even though there will be flood waters every day in the river, fishermen and wood collectors may not benefit from it.

For people like Rupam's neighbor, the Subansiri River they know will change. They will have to navigate the river more cautiously, and every evening there will be [monsoon-season](#) water levels.

Will they be able to catch enough fish to share with their neighbors? Only time will tell.

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