Infrastructure as Archive:
Recording the State's Materiality along the Brahmaputra

Mirza Zulfiqur Rahman and Edward Kieran Boyle

Generally, the highest part of the plain is along the banks of the rivers from where the land slopes almost imperceptibly downwards, the natural drainage being away from the main river towards subsidiary watercourses, which flowing roughly parallel to the Brahmaputra, eventually converge and spill into that great river further along the valley. During the rainy season, the Brahmaputra overflows its banks from time to time, depositing sand and silt on the adjacent land. By this natural process the narrow plain of Assam is continually building itself up. – W.R. Gawthrop (1951: 1)

This piece introduces the notion of infrastructure as archive in order to think through the manifold ways in which the banks of the Brahmaputra have been built up over time. It analyses the role of infrastructure in the politics of imagination, and it understands the presence of infrastructural projects as an archive, a repository documenting state interventions over time, open to being examined and re-examined, deployed and redeployed in the service of future interventions. The images illustrate the state's infrastructural presence in the life of the Brahmaputra and demonstrate how we

should see the material record of state hydraulic interventions in this borderland region as an archive.

All rivers carry sediments, deposited at various places along their natural course from source to sea. In the case of the Brahmaputra, material eroding from the relatively young and slowly crumbling Eastern Himalayas meanders through the floodplains of Assam and Bangladesh to the deltaic Sundarbans, and eventually empties into the Bay of Bengal. And all rivers are themselves living and active sculptors of the landscapes they shape over time, as well as of the memories of riverine communities who have moved as the river has moved, living and adapting through its flood-cycles, its ebbs and flows. However, it is anthropogenic interventions that constitute the archive on which we focus here – in the form of embankments and dams built by state bureaucracies to channel and control the river, which accumulate over time.

Taking infrastructure as an archive focuses attention on how the embankments, roads, railways and hydropower dams that layer up along the river's course serve as material evidence for technologies of state intervention and the reproduction and replication of the state itself. The profusion of planned, built, unfinished, sun-bleached and "pickled" infrastructures (Rahman 2019) represents an archive of sorts, directing future imaginative possibilities for speculative and spectacular interventions into the Eastern Himalayan landscape. These successive infrastructural interventions into

A freight train running across a causeway through Deepor Beel, a Ramsar wetland site at Guwahati, Assam. Shadowing the Brahmaputra all the way along, rail infrastructure ruptures the riverine landscape.
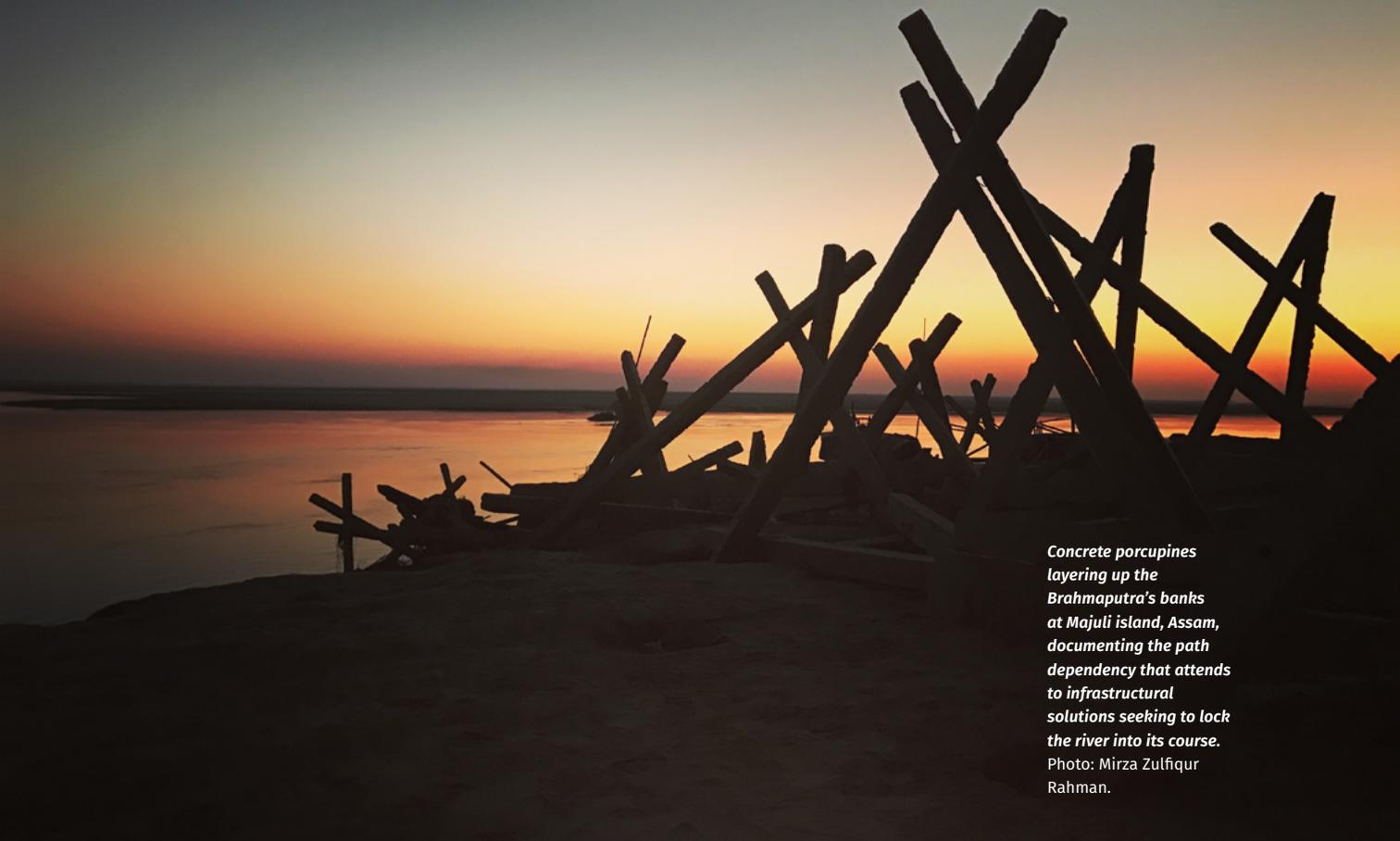Photo: Mirza Zulfiqur Rahman.

the course and flow of the river have created both "transparencies on which power relations were inscribed and intricate technologies of rule in themselves" (Stoler 2009: 20), channelling the bed of the river and future developments along its banks.

Ann Laura Stoler's attention to archiving-as-process provides our point of departure, which emphasizes the continuities between the imperial formation of Northeast India as a colonial site of extraction and the ongoing material presence of this hydraulic archive in the present. Assam transformed into a resource frontier in colonial times, shaped by the extractive economy and political ecology imposed on the region. Infrastructure development of its riverways, railways and roadways was triggered by imperial demands for a series of resources – tea, coal, oil – as well as the region's mobilization in increasingly global conflicts culminating in World War II. It is the first of these resources with which Assam is most readily associated, and the major tea gardens during colonial times were situated close to the Brahmaputra, the riverine transport route through and out of the region. When the Assam Railways and Trading Company Limited built the first railways to transport these resources, it constructed lines running parallel to the main channel of the Brahmaputra, bisecting and rupturing the natural drainage and downward slope away from the main river outlined by Gawthrop (1951) in the epigraph of this article. The recasting of the riverine landscape was overbuilt by an infrastructure of extraction paralleling the Brahmaputra's course, one that is preserved today.

Three years after India's independence, on 15 August 1950, the Great Assam Earthquake struck. The subsequent postcolonial state expansion and building of political legitimacy in this north-eastern frontier region went ahead in the garb of post-earthquake relief and rehabilitation (Guyot-Réchard 2015), re-/ordering spaces of control and accumulation along, rather than against, the colonial grain. Roads, like the earlier railways, followed an alignment parallel to the river, and therefore ruptured the natural flows of numerous southern and northern tributaries of the Brahmaputra. Embankments built by the postcolonial state were to protect the economic interests of tea gardens, oil wells and commercial towns. The first post-earthquake catastrophic flood arrived in Assam during 1954, soon after the passing of the Assam Embankment and Drainage Act of 1953 (DWR 1954), which set in motion the technological lock-in of the river by embankments as the dominant solution to floods (Wasson et al. 2020). The broader riverscape has come to be interpreted through "infrastructural effects" extending far beyond their material sites of construction (Boyle and Shneiderman 2020), which provide the concrete horizon of possibilities for hydraulic intervention.

The infrastructural archive visible along the contemporary river charts the "quiescence and quickened pace of its own production, in the steady and feverish rhythms of repeated incantations, formulae, and frames" (Stoler 2009: 35). Since Indian independence and the ensuing development, the Brahmaputra has oscillated between a season of floods, occasionally catastrophic, and a season of building and/or reinforcing embankments (Rahman 2020). Beyond the technical durability of these interventions and the hubris of the state agencies involved, the infrastructural archive of the Brahmaputra reveals not merely "ruins as memorialized and large-scale monumental 'leftovers' or relics ... but what people are 'left with'" (Stoler 2008: 194). For those who reside by and with the watercourse itself, this archive documents a bureaucratic focus on

Concrete porcupines layering up the Brahmaputra's banks at Majuli island, Assam, documenting the path dependency that attends to infrastructural solutions seeking to lock the river into its course.
Photo: Mirza Zulfiqur Rahman.

Bridge over Maguri Beel, a Ramsar site near the Dibru-Saikhowa National Park, Tinsukia. Connective and extractive infrastructures operate at cross-purposes with the daily lives of the area's inhabitants.
Photo: Mirza Zulfiqur Rahman.

ameliorating what Gawthrop understood to be the river's natural rhythm. The state and its interventions become dedicated to smoothing out connectivity along the river, as well as rupturing natural flows, in a manner that frequently bypasses the lives and livelihoods of the communities resident along it. The infrastructural archive is therefore that of the state, not of those living in its shadows.

The infrastructural archive of the Brahmaputra refers to both concrete infrastructure, which is actually constructed and completed, and to the speculatively planned and unfinished infrastructures serving as an important record of social mobilization and community protests in Northeast India. Movements of self-determination and questions of political legitimacy and sovereign presence are defined by resource extraction and control in the Brahmaputra valley, moving through tea, coal, oil, embankments and dams (Kikon 2020). Such protests are mounted on a scaffolding provided by the infrastructural archive and its role in shaping local understandings. However, while half-built dams and abandoned dredging machinery reflect political

Dam tunnel at Lower Subansiri Hydroelectric Project site. Although subject to ongoing contestation by local residents, here the archive records power channelled from infrastructural site to the political centre. Photo: Mirza Zulfiqur Rahman.

and natural currents that flow counter to bureaucratic efforts both to tame the river and harness connectivity, the resultant archive documents the power of the state rather than its opposition.

What remains after the fact is the material expression of the state. The infrastructural archive is a record of that power, rather than an archaeology of intervention; for local residents this power leaves not merely an infrastructure of repeated interventions, but the administrative and bureaucratic apparatus responsible for its emplacement.

The understanding of infrastructure as archive allows us to bring to light the frontier assemblages and ruptures across the riverine landscape of the Brahmaputra, underlining the social and techno-political relations, the negotiations and temporalities that attend to its collective material presence. It lets us grasp the interplay of infrastructural effects and comprehend how entire geographies, especially borderland environments such as Northeast India, are shaped across various domains over time. The Brahmaputra has

Abandoned railway tracks at Lekhapani, Assam. The ruins of these lines, built to transport coal and oil, are the focus of discussions over extending the state's infrastructural reach. Photo: Mirza Zulfiqur Rahman.

been infrastructured with routes, embankments and dams by a series of bureaucratic administrations to underline their state-making and sovereign presence in fragile borderland ecologies, engineering and embedding the state's material presence into riverine communities living on the floodplains.

Treating these interventions as parts of a single archive allows us to emphasize these structures as both relational and components within a dynamic socio-material assemblage (Rippa and Rest 2020), aiding in the analysis of the pace and trajectory of infrastructure development in borderlands, and of how built, unfinished, half-built and zombie infrastructures (Carse and Kneas 2019) play out through contemporary postcolonial history. The materiality and effects of infrastructure that nation-states negotiate across temporalities, geographies, intensities and scales are the sedimentary material that comes to be layered and assembled as its archive. It is the presence and constant invocation of such an archive that has led to the marginalization of traditional community knowledge systems and non-structural alternatives. For infrastructure to offer open-ended and emergent political possibilities in the future, parts of this archive may need to be allowed to fall into ruin.

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