

CHAPTER-6

CONCLUSION

6.1 Towards the possibilities of a pragmatic convergence

Controlling floods in the Brahmaputra floodplains has always been a challenge for the Government of Assam. In attempts to train the unruly waters, there has been a range of experiments right from building embankments to building dams. However, these experiments are related to the larger changing political scenario of Assam. The hydraulic infrastructures that are employed to alleviate the problem of floods are inherently based on an array of technical and scientific knowledge through which the process of controlling floods begin.

Deducing from above, the entry point to this study starts from looking at the debate around the dredging of the river as a solution to the perennial problem of flood in Assam. In 21st century, river engineering to dredge the river is intact in popular consciousness among technocrats, engineers and bureaucrats. In this process, the biological life of the river system in the Brahmaputra floodplains and human history is not considered (Saikia, 2019, 494-495). Translation as a tool has been used in this study to look at the relationship between humans and the environment within disaster management practices and in adaptation practices of a community living along the river. The motivation of science and hence engineering revolves around the control and domestication of natural forces. Although, it is hard to delineate nature and culture as two separate entities, Barbara Adams (2005) urges to revisit the nature-culture binary. The shift in knowledge and conception will bring us to the question of how will we live? Amidst this existential question, who decides for us is too a political question.

With this background, this study examines how governmental interventions in the form of welfare measure play out in the politics of adaptation to floods, in Assam. In mapping the governmental interventions and how it naturalizes the annual events of floods every year, I look into the materiality of documents and how it is used to create a space of governance within which floods as a natural phenomenon is tamed. Ethnographic vignettes show how documents create an economy of compensation and relief distribution rendering adaptation to floods as a technical process. Further, I examine how

governmental interventions embody ways of thinking and acting not only through individuals, but also through a constellation of people and materials. The elusiveness of water is traced through a detailed reading of programme documents and their contextualization in terms of its constitutive exclusions. I examine how the twin process of flooding i.e. erosion is governed when this phenomena too threatens communities living along the river. By making a spectacle of this negotiation, this study explores the tensions that emerge when rapid environmental change may not be easily stabilized, as is in the case of governing with documents.

The central theme of the study discusses the multiple ways in which water is embedded in domains of routine flood governance and in everyday life of a riparian community. In Assam, the governance approach to floods relies exclusively on the physical properties of the river. As for instance, the riverbed and its channels, the sediments it carries, the geomorphological characteristics of erosion, its hydrology, etc. These representations of the river are that which are visible to the naked eye. The underlying multiple interactions and mutations within an river ecosystem is actively erased to serve human interests. This representation echoes in disaster management practices as well. The meaning conferred to floods rest on assuming that mitigation of risk and vulnerability is an achievable condition on the basis of the materiality involved in the process. On the other hand, a community in Pomua considers the river as a living entity. By the term ‘living entity’, I refer to the meanings they confer on the floodwaters in its signs which make it difficult for the humans to live an amphibious life. There is a constant tussle between villagers having an agency over the floodwaters and at times the floods threatening their cultural adaptive skills. The performance of rituals the villagers resort to, in recent times, in attending to floods exemplify their submissiveness to the river hoping for a reciprocity from the non-human, for their habitation in their homes.

The difference in making sense of the floodwaters to govern and to dwell is similar to what Barnes and Alatout (2012, 484) contend, ‘water is not a singular object for epistemology’. In following the practices of social construction of disaster management and the practices of how people dwell in a landscape by attending to its environment, reveal various ontologies in enacting water (Gad and Jensen, 2016). These differences in ontologies/knowing of water in turn shape the adaptation processes and disaster management approach to floods. At the level of governance, the phase of preparedness

through the tools of documents and performative practices to act at the face of risk are categories that define the outlook towards floods. These practices delineate the conduct for humans before the floods inundate the landmass. After the floods recede, a post-disaster phase includes the practices of repairing and rebuilding the casualties inflicted on the hydraulic infrastructures.

An in-depth analysis of the methods used by the engineers and the officials who plan the strategy for reconstructing these infrastructures reveal their quick-fix approach to shifting landscapes. This approach is exemplified in their practices of rebuilding hydraulic infrastructures devastated by floods. Such knowledge practices of governing floods exclude the impact of the hydraulic infrastructure on the ecological system of the river. In the active exclusion of human impact on the long run sustainability of the river and its floodplains lies in the rationality of governmentality. The apparatus of disaster management of floods transform the annual phenomena to be an event in time to make governance easier.

For the people of Pomua village, flood has a historical and political connotation. It has a historical meaning in relation to the abundance and affordance provided by the river in enhancing the livelihood capabilities of the community. The relative calmness of the river allowed these villagers to live in water and hence cooperated with the representation these humans gave the seasonal inundation of floods. According to the people of Pomua village, the developmental activities of the state, especially the dams built in Arunachal, the fortification of Dibrugarh town (that lies opposite to the bank of Pomua village) by spurs and the construction of the Bogibeel bridge in the north have aggravated the condition of floods. The infrastructures that have been constructed around the river, in the context of the locality of Pomua village have compelled people to develop new relationship and understandings with the river. People attribute the reasons for aggravation of floods to these infrastructural changes around the basin of the river. Henceforth, the historical and political meanings villagers in Pomua attach to flood destabilize the governmental approach of viewing floods as a hazard in a single event of time. Floods are a regular occurrence and dynamic process for the residents of Pomua village. The discussion of adaptation through the categories of risk and preparedness has a clearly defined timeline. But for people at the margins, time is elusive and the

phenomenon of floods is processual. This is so because of their evolving relationship with the river's emergent properties.

It is pertinent to point out that these differences in temporalities that exist within a community are not congruent to the temporality through which governance of floods takes place. The practices of preparedness initiated by the interventionist programme of the state delink these temporalities of floods into a technical domain to govern. Communities become more vulnerable over time as a result of not taking into account the varied meanings of threats and the nature of change in flooding. The new temporality brought to the course of flow of the river by the introduction of new infrastructure, i.e. the Bogibeel bridge does not reflect in governance practices. As Cavelty et al. (2014, 2-3) opine, the aspiration to attain stability, safety and survival as a technical manifestation is similar to that of how the ordering of nature, society and technology is placed. In other words, the way nature is ordered through the logics of ecology and engineering, in the same way the perturbations of the environment can be ordered through the logics of security and resilience.

The simplistic reduction of nature with immutable laws and its virulent perturbations not an outcome of human activities is problematic. Latour (2004) in his work, *Why Has Critique Run out of Steam? From Matters of fact to Matters of Concern*, asks to reconsider the way humans think of the material world and their agency. In the depressing times of instability in the society we live in, the scholar picks up certain signs and cues to bring to the fore the concerns that need to concern us at the present moment. Pointing to his own work on the social construction of facts through which he establishes that there is lack of scientific certainty in the practices of science. In showing that knowledge produced by science is nothing but premature naturalized objective facts, he takes the issue forward by saying what was the intention of arguing that scientific facts are nothing but social construction? In that critical spirit he takes the argument further that if scientific facts are a means of construction, then we need to get closer to these facts instead of turning away from it and not in 'fighting empiricism, but on the contrary, renewing empiricism' (Latour, 2014,231).

According to Latour, instead of focusing on what makes knowledge construction of science possible (matters of fact), this realism itself need to be treated as a matter of concern (ibid: 231). Latour's (2014) sophisticated critical investigation into how people

safeguard themselves against new threats, new risks, new tasks, and new targets with same automated gestures. His suggestion to examine social construction of facts up-close and to follow these facts as issues of concern, benefitted this study to revisit the same old question of the phenomena of floods in relation to human ingenuity to control/train the river embedded on the logics of nature/capital with a new perspective.

6.2 Training of the Brahmaputra

The annual inundation of the Brahmaputra floodplains is not unprecedented. Nor are the attempts to train the meandering rivers and its tributaries. Saikia (2019, 64) quotes Weller's suggestion in the year 1966 as:

'the most desirable plan for control of the Brahmaputra river is complete stabilization. To accomplish this, sufficient reservoirs would be required on the tributaries to reduce the input of sediment and halt the aggrading trend of the river. The river would then be confined to a single channel trained into a series of easy bends, preferably along the present main channel of the river, by the use of all the methods or 'tools' employed in channel stabilization. Spurs, other accretion inducing methods and dredging would be used to close secondary channels and train the river in the selected course'

The idea of stabilizing the course of the Brahmaputra is not new and has been a lurking idea in the imagination of the state government, since the pre-colonial times. What is crucial is the proposal of the mechanized plan with the same tool of dredging, in recent times. In examining the many causes of floods in Assam, Bania (2022), makes a comparison between the historical records documenting the causes of floods and the recurrent deluge devastating many. Citing Kingdon-Ward (1995), the scholar brings to the fore the role played by weather and climate and its contribution to the deluge last year.

According to Ward, a number of factors need to be taken seriously, 'if a hot spring and summer follows a heavy winter snowfall, it will reach a maximum; and if this maximum snowmelt happens to coincide with maximum rainfall, the consequences may be serious'. Indicating the timing of the rise in the volume of water level, Kingdon-Ward (1995) states-the first rise in April is due to snow melt, the second around July is a combination of snow melt, glacial melt and the monsoonal rainfall.

Drawing from the explanation of climate and seasons and its influence on the level of water in the Brahmaputra floodplains, provided by Kingdon-Ward, Bania (2022, 3-4) draws a corollary to the weather pattern and floods in the year 2022. The scholar claims that the winters in 2021 was marked by snowfall, thunderstorms, and hailstorms in many parts of North-east India, which was followed by hot spring in 2022, recorded highest in 122 years in India. This pattern was followed by heavy pre monsoon and monsoon floods in the summer. The first wave of floods accompanied by landslides due to incessant downpour, caused massive devastation in the districts of Assam as for instance in Haflong (Dima Hasao), Cachar, Dhemaji, Hojai, Karbi Anglong. The second wave of floods coincided with heavy spells of monsoonal rain and overlapped with melting of glaciers in the Eastern Himalayas as per the claims of Kingdon-Ward, leading to massive supply of water to the river basin and putting the whole of the state into an inland sea (ibid, 4).

There is no doubt that the global circulation of water in Brahmaputra will be affected by in the face of climate variability. On a similar tangent, bringing in the discipline of geology, to invoke the agency of nature, Khan (2019) evokes the role of geology to understand how the event of earthquake in 1950 that altered the Brahmaputra basin, is an event that has its temporality in present times as well. The scholar views the rise of the river bed as an extension of the earthquake that has increased the sediment deposit across the basin (2019: 338). The scholar argues the impact of the earthquake on the river basin is not a simplistic event in time and view that the temporality of the event is an inherent part of river's ecosystem. According to her, 'while every ecosystem is always changing and elements within it come and go, this particular element of the river seemed to me to be something else, an extrusion not of a material object but of a movement with its own internal temporality from below the surface of the earth' (ibid, 338).

By evoking the role played by natural elements in understanding floods i.e., climate variability and hydrology, tectonic movements and geomorphology- is to bring to focus the gigantic ecosystem working at the backdrop of the annual swelling of the river and its floodplains. Reducing these powerful variables to mere objectification by dredging or by building embankments, dams, railway bridges, etc. to train the river is a matter of concern. Instead of thinking of adapting to floods from a human centered approach, I argue, there is an increasing need to see how human activities have particularly affected

the internal workings of the rivers' ecosystem. To put it in another way, we must attend to our uniqueness and recognize how we have appropriated the non-human river. As D'Souza (2016, 222) reiterates, there is a need to know the cardinal difference between 'natural ecosystem' that has the ability to self-organize in tandem to any fluctuations outside its ecosystem and to that of how it organizes when 'managed' by human intervention. In recognizing this cardinal difference, it will be easier to acknowledge an ecological baseline to 'determine the impact and implications of the society/nature dynamic'.

Drawing an ecological baseline is associated with the idea of ecological integrity. Ecological integrity recognizes that the natural systems have their own workings of regeneration, reproduction, sustenance, and adaptation. The term 'integrity' refers to the realization that the combined workings and components of the whole natural systems and ordering of the natural forces among them are valuable for their own sake and not for our appropriateness (Westra et al., 1997, 11). At the same time, D'Souza (2016, 222) states that acknowledging the 'integrity' of the natural system is not to state that nature exist in a pristine form, but rather that there are certain properties of natural systems that are inherent to them.

In the above context, recognizing the integrity of natural system vis-à-vis the river system of the Brahmaputra is not to recover its pristine natural form but to step back and accept the annual flooding as an inherent characteristic of the river. The inherent tendency of institutions, market and economy to control the inundation of the floodplains by hydraulic actions, do not recognize the internal and complex environmental processes. The construction of the natural systems as the world out there to be appropriated by humans is a construction strengthening the human-non-human divide. Second, creating a discourse of risk management in the face of environmental perturbations is once again construction of nature i.e. providing meaning to nature from the perspectives of the humans.

The mere assumption of the natural systems as nonsocial and passive ignore the social relations between environment and local people (Keller, 2008; Pollini, 2010). The local people of Pomua village construct their knowledge in adapting to floods by recognizing the meaningful signs the floods convey as it inundates their settlements. Accepting the vibrancy of the emergent properties of the non-human, the local practices of adaptation

by the local actors leads to a dissolution of nature-culture boundary. Therefore, the larger projects of transformational landscape change by scientific enterprise of engineering actively erase the temporalities that exist at multiple local scales. The meaning of nature does not lie in its passive form but in multiple ways of sensory and cultural meanings of attending a landscape during floods.

It has been well documented that scholars, activists and scientists imagine nature differently from the modern technocratic framework. They have argued that it is important to emphasize people's cosmological worldviews, as well as their traditional knowledge, understanding and behaviors. However, the neo-liberal agenda, capitalism, market and profit-oriented planning tend to dominate the knowledge practices of building infrastructure like dams, embankments and bridge from a nature/capital binary. They are keen to go by this scientific approach to control nature. But over time, we have witnessed various disasters throughout the world when scientific endeavor could not control the complex workings of the natural forces.

So here at this point as conscious member of the community, it is reasonable for us to create a new or alternate paradigm through which we can provide an equal footing to people's experience or knowledge where both modern scientific technology and traditional knowledge can have a conversation. Such paradigms are increasingly important in the face of ecological challenges we face because each ecological challenge is time and space specific. The role of history and geography is also pertinent to consider the challenge of ecological perturbations. Therefore, in the name of scientific practices, it is not feasible to apply the same disaster risk management techniques at every scale. Therefore, I would like to suggest that instead of explicitly rejecting the distinction between nature and culture or evoking essentialism of nature, we need to understand how nature works so as that we can make informed choices of our future that are sustainable in the long run.

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