

**Making New Environmental
Knowledges: EIAs and Public Hearings
on Large Dams in Northeast India**

Manju Menon

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CERTIFICATE OF ORIGINAL AUTHORSHIP

I, Manju Menon declare that this thesis is submitted in fulfilment of the requirements for the award of Doctor of Philosophy in the Faculty of Arts and Social Sciences at the University of Technology Sydney.

This thesis is wholly my own work unless otherwise referenced or acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

This document has not been submitted for qualifications at any other academic institution.

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Manju Menon

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ACRONYMS

AASU: All Assam Students Union
ADC: Autonomous District Council
AFSPA: Armed Forces (Special Powers) Act
AGP: *Asom Gana Parishad*
AIMSU: All Idu Mishmi Students Union
AIPP: Asia Indigenous Peoples Pact
AJYCP: *Asom Jatiyatabadi Yuba-Chatra Parishad*
APSPCB: Arunachal Pradesh State Pollution Control Board
ASSOCHAM: Associated Chambers of Commerce and Industry of India
BOOT: Built, Own, Operate, Transfer
BNNABSS: *Beki Noi Niyrantran Aru Baan Sahajya Samiti*
CA: Compensatory Afforestation
CAT: Catchment Area Treatment
CBA: Cost Benefit Analysis
CDM: Clean Development Mechanism
CEA: Central Electricity Authority
CERC: Central Electricity Regulatory Commission
CII: Confederation of Indian Industry
CRPF: Central Reserve Police Force
CWC: Central Water Commission
DMP: Disaster Management Plan
EAC: Expert Appraisal Committee
ECMB: Environment Management Capacity Building
EIA: Environment Impact Assessment
EIS: Environment Impact Statement
EMP: Environmental Management Plan
EPA: Environment Protection Act
FICCI: Federation of Indian Chamber of Commerce and Industry
FPIC: Free, Prior, Informed Consent
GHG: Green House Gases
ICOLD: International Commission on Large Dams
IDP: Internally Displaced Persons
IMCLS: Idu Mishmi Cultural and Literary Society
IMF: International Monetary Fund
IPT: Independent People's Tribunal
IRBN: India Reserve Battalion
IRN: International Rivers Network
IUCN: International Union for Conservation of Nature
IWGIA: International Work group for Indigenous Affairs
KMSS: *Krishak Mukti Sangram Samiti*
LIFE: Lawyers Initiative for Forests and the Environment
MoEF: Ministry of Environment and Forests
MoU: Memorandum of Understanding
MW: Megawatt
NBA: *Narmada Bachao Andolan*
NCEPC: National Committee on Environmental Planning and Coordination
NEAA: National Environment Appellate Authority (NEAA)
NEC: North Eastern Council

NEEPCO: North Eastern Electric Power Corporation
NEERI: National Environmental Engineering Research Institute
NEFA: North-East Frontier Agency
NGO: Non Governmental Organisation
NGT: National Green Tribunal
NHPC: National Hydroelectric Power Corporation
NPC: National Productivity Council
NPMHR: Naga People's Movement for Human Rights
OECF: Overseas Economic Cooperation Fund
OECD: Organisation for Economic Co-operation and Development
PAF: Project Affected Family
PCB: Pollution Control Board
PEG: Participatory Environmental Governance
PESA: Panchayati Raj (Extension to Scheduled Areas) Act
PPA: Power Purchase Agreement
PRI: Panchayati Raj Institutions
RoR: River of the River
R&R: Rehabilitation and Resettlement
RTI: Right to Information
SANDRP: South Asia Network of Dams, Rivers and People
SEIAA: State Environmental Impact Assessment Authority
SSP: Sardar Sarovar Project
ST: Scheduled Tribe
STF: Special Task Force
STS: Science and Technology Studies
TA: Technical Assistance
TERI: The Energy Research Institute
TMPK: *Takam Mishing Porin Kebang*
ToR: Terms of Reference
TVC: Tennessee Valley Corporation
UT: Union Territory
WCD: World Commission on Dams
WII: Wildlife Institute of India

ABSTRACT

In 2000, the Indian government envisaged the large-scale transformation of Northeast India to power India's neoliberal developmentalist project. According to the government's plan, the region was officially set to receive over 150 large, public and private sector hydropower projects with most of them to be located in the border state of Arunachal Pradesh. Despite dam building being contentious the world over, the government assumed hydropower development in this region to be frictionless. Project documents claimed that the dams would bring much needed development to this "backward" border region by utilising the "abundant" water resources of the Eastern Himalayan region and produce "clean energy".

However, until today, not a single one of the proposed projects has been completed. The Indian government's attempts at implementing hydroelectric projects in the Northeast region have floundered upon choppy waters. How did the central government seek to implement its seemingly foolproof developmentalist vision in this region and why did it fail? Looking back on the period from 2000, I focus on the government's hype, the knowledge-making practices of the public and private sector dam builders and the failed environmental regulation procedures. By analyzing the contestations around the proposed hydropower dams in this region, I argue that the Environmental Impact Assessment (EIA) a technocratic tool and the cornerstone of India's participatory environmental governance system, is neither successful as a consent manufacturing mechanism nor as a tool to manage expectations and conflicts. Instead, it acts as a legitimating device that helps make visible power relations, and thereby is generative of opposition and political participation. In this sense, EIAs succeed because they fail for their sponsors.

My thesis uses the political ecology approach to theorize the role of Participatory Environmental Governance (PEG) in contentious development. Although legal procedures for this form of governance have been implemented in India for two decades, PEG is yet to be recognized as a credible space for negotiations between policy and politics and for producing meaningful developmental outcomes.

CHAPTER 1

NEW GEOGRAPHIES FOR CLEAN POWER

1.1 Introduction

India is known widely as an energy deficient country. The official energy planning discourses have been centred on perpetual “shortages”. Post economic liberalization in 1991, India’s power demand from growing industrialization and consumerism has been insatiable (Banerjee, 2014). Energy planners hold electricity to be the most desirable and versatile form of energy and its production and distribution to all citizens through the central grid has been the motto of successive governments (D’Cunha, 2018). Hydroelectric energy was a significant contributor of electricity in India through the 1960s to the 1980s. But it reduced from 51% in 1962-63 to 15% of the total electricity produced in India in 2015 (Ministry of Power, 2016). Globally too this downward trend was observed mainly due to the environmental and social impacts of large dams. Despite the global recognition of the social and environmental impacts of large dams for irrigation and energy, there is now a return to dams in the context of climate change (Fletcher, 2010).

Hydropower dams have made a comeback under climate change mitigation policies as they allow a shift from non-fossil fuel use (Pittock, 2010). The World Bank’s renewed interest in hydropower dams leans on its observation that global environmentalist concerns of climate change now supersede local environmental needs (van Ginneken, 2015). The World Bank looked to invest in these projects as they were seen as “high risk, high reward” projects, indicating the impacts and benefits of such projects (Goodland, 2010). The Clean Development Mechanism (CDM) under the Kyoto Protocol controversially internationalized dam projects and extended more finances to them (Fletcher, 2010). These financial aspects changed the hydropower policy environment from earlier decades when hydropower was underfunded and lacked support due to its impacts. Since mid 2000, new dam building opportunities attracted builders and contractors to the Himalayan region called the ‘water towers of Asia’ (Anon, 2011d; Rajsekhar, 2013). The opportunities for private financing and generating profitable hydropower had arrived after years of struggle with funds from

International Financial Institutions (IFIs) that had dried up or failed (Pittock, 2010). Himalayan countries adopted legal and regulatory changes to liberalize energy production to make 'Himalayan Hydro' profitable to private developers and investors (Ahlers, Budds, Joshi, Merme, & Zwarteveen, 2015; Vidal, 2013). Using the neoliberal logics of optimal resource utilization and efficiency through privatization, Himalayan rivers were to be turned into marketable ecosystems.

In 2000, the Indian government envisaged a large-scale transformation of the region of Northeast India to power India's neoliberal developmentalist project. According to the Indian water and energy bureaucracy's 'Ranking Study', the Northeast region was one with the most hydropower potential (Government of India, 2001). The region was officially set to receive over 150 large hydropower public and private sector projects with most of them to be located in the border Himalayan state of Arunachal Pradesh. The steep and high mountains in the region are crisscrossed by innumerable torrential streams and cascading rivers that, according to energy planners, possessed near limitless possibilities for turning voluminous cusecs into kilowatts. In hydro, in fact, the Indian government was enabled to imagine electric energy not only as a cheap and abundant national resource but also as providing clean energy to 'green' the national economy.

By 2002, Northeast India was making headlines in Indian business papers. The folding of climate change concerns into developmental challenges meant changes not only of energy technology choices but making visible new geographies for power production in India. Since 2000, the Indian government's policies on hydropower dams have facilitated the implementation of dams on Himalayan waterscapes. Dam building for development was contentious the world over and in India as it caused large-scale displacement, livelihood and ecological losses. Yet the government described these new projects proposed for the Northeast region as "win-win". Hydropower development in this region was expected to be frictionless, as it would not cause large-scale displacement of communities. The dam projects were expected to bring much needed development to this "backward" border region by utilising the "abundant" water resources of the Eastern Himalayan region. These projects seemed to have the approval of the governments of the small Northeastern border states that were funded by the Centre. The state governments had few opportunities to generate

revenues and undertook developmental schemes with financial assistance from the central government. The Northeastern state governments were keen to alter the paternalistic Centre- state economic relations by approving the setting up of large dam projects within their states. One Chief Minister of Arunachal Pradesh expected to generate Rs. 6000 crores (60 billion) as earnings for the state by 2020 (Anon, 2007a).

In official documents prepared by the central government, the investments in hydro development were presented as a correction to India's uneven national development policies that caused the economic marginalization of India's border regions (Ministry of Development of North Eastern Region & North Eastern Council, 2008). The projects were stated to be in the interest of the region's development and relieve the sense of abandonment felt by the people of the region due to lack of capital investment. Project planning was also galvanized by geo-political interest. By harnessing over 30000 MW of power, India sought to secure first use rights over the Brahmaputra river system, an international resource flowing through three countries, China, India and Bangladesh (Vidal, 2013). Some experts believed that this was necessary for India's development and energy security (Chellany, 2013; Verghese, 2007). Others say that it may have set off a dams race with China (D'Souza, 2013; N. Kurian, 2016).

Himalayan Hydro has been an integral part of the Indian government's energy policy for nearly twenty years now. But the largest projects located in the state of Arunachal Pradesh have failed to come up (N. Ghosh, 2018). Projects that were initiated in the early years of 2000 are still stranded due to local protests and litigation by local communities. The Lower Subansiri project, which was supposed to start producing electricity by mid 2014, stands half-built (Karmakar, 2014). It has been called the "tomb" of India's hydropower plan (Schneider, 2015). The dam proposals have provoked inter-state water conflicts and upended the federal relationships between upstream and downstream state governments of the Northeast region. In 2013, the Indian Parliamentary Standing Committee report on hydropower projects observed that the Northeast region had missed the 11th and 12th National plan (2007-2017) targets for project constructions and that the Hydropower policy of 2008 was a failure. The Committee also noted that the sector had not attracted as much private investment as expected (Ministry of Power, 2013). By 2015, the hydro politics in the

Northeast region caused nearly all the private dam builders to either cancel their agreements with the state government or to seek the public sector to bail out their initial investments through project partnerships (Rehman, 2016).

Why did the Indian government's attempts at implementing these hydroelectric projects fail? How did the central government seek to implement its seemingly foolproof developmentalist vision in this region? Looking back on the period from 2000, I focussed on the government's hype, the knowledge-making practices of the public and private sector power generators and the failed environmental regulation procedures. By analyzing the contestations around the proposed hydropower dams in this region, I argue that the Environmental Impact Assessment (EIA), the cornerstone of India's participatory environmental governance system, was neither successful as a consent manufacturing tool nor as a mechanism to manage expectations and conflicts. Instead, it acted as a legitimating device that helped make visible power relations, and thereby was generative of opposition and political participation. It generated discourses that may have indeed superseded the "high modernist" developmentalist models driven from the Centre, but more critically, mobilized new local constituencies against the central government's vision, and generated demands for new alternatives. In this sense, EIAs succeeded because they failed for their sponsors.

My thesis seeks to theorize the role of participatory environmental governance in contentious development. I show how the ritualized, bureaucratic procedures of the state for consent-making were transformed into a space for socio-political negotiation and contestation by the collective agency and reflexivity of affected citizens. Although procedures for Participatory Environmental Governance have been implemented in India for nearly two decades, most studies relate to the gaps in their implementation and provision of procedural justice. This form of governance is yet to be recognized as a credible space for negotiations between policy and politics and for producing meaningful developmental outcomes.

The case of large dams in Northeast India shows that even through hydropower proponents claimed that it has become acceptable to climate change policies that aim to move away from fossil-fuel use, proposals for dam projects were tested on new grounds. The projects were held up over cost-benefit calculations and crucial

differences on environmental grounds. The disputes and contestations over the projects involved tensions between a) expert knowledges on the environment versus local traditions of use; b) the claims of official science versus histories of environmental pasts; and c) geographies for development against community notions of place.

1.2 Research Objectives, Approaches and Methods

Since 2000, the official documents of the central government projected hydropower generation in Northeast India as a developmental opportunity. Arunachal Pradesh was stated to have the highest hydropower potential according to estimates by central water and energy planning agencies. The Arunachal state government expected to earn “hydrodollars” from the sale of power to neighbouring regions that were in need to electricity. Yet, not a single project has been successfully implemented so far. This study seeks to understand the hype and the failure of the Indian government to implement its neoliberal developmentalist vision in Northeast India since 2000. The central question that concerns this research is how did the Indian government seek to turn Northeast India from a “backward” region into a “power hub” and why did it fail? My thesis aims to theorize the politicization of hydropower development in the border region of Northeast India by analyzing the participatory decision-making processes for three large dam projects, the Lower Subansiri, the Dibang and the Lower Demwe projects.

My research asks and tries to address the following research questions:

- How is official knowledge in EIAs assembled to constitute hydropower as “win-win” projects?
- Why have there been political contestations over large dams in Northeast India?
- What do these contestations tell us about the scope and limits of participatory environmental governance in India?

I use the political ecology approach to address my research questions as this approach provides the tools to understand the “political dynamics surrounding material and discursive struggles over the environment” (Bryant, 1998). Using this approach my

thesis aims to understand how development questions and contestations were spatialized in this border region and the implications this had for the control of rivers through hydropower dams in Northeast India. This approach also helps to analyze and theorize how participatory spaces were constituted and reframed by official and non-official actors. I hope to show that the “public hearing” forum can be seen as a site of new knowledge production and developmental imaginations. I examine these participatory governance spaces in relation to the generation, mobilization and containment of collective agency and with respect to developmental possibilities and outcomes. Through this analysis I hope to show how participatory governance performance enabled different knowledges to meet, challenge and at times press for the reconciliation of seemingly incommensurable development and environment logics.

My research is interdisciplinary, drawing on the rich scholarship in the fields of Human Geography, Development Studies, Environmental Policy, Postcolonial Studies, International Relation and Science and Technology Studies (STS). I rely on three sets of public documents produced by government institutions and citizens on the subject of hydropower development in the Northeast region. The first set comprises official policy statements and planning reports related to energy and development in India and the Northeast region. These include reports of the Planning Commission, the Ministry of Development of Northeast Region, the Ministry of Power and government institutions like the Central Electricity Authority (CEA) and the Central Water Commission (CWC). I also analyze legislations, guidelines, government orders, and judicial pronouncements related to procedures for environmental approvals, public participation, power generation, land use, rehabilitation and resettlement of displaced families.

In India and in many parts of the world, the official decision-making for the grant of environmental approvals to large projects such as dams involves legal procedures. These procedures require the official production and public circulation of documents called Environmental Impact Assessment (EIA) reports or Environmental Impact Statements (EIS) and Environmental Management Plans (EMP). The EIA reports prepared for the three large dam projects mentioned above form the second set of documents analyzed for this thesis. The third set of documents analyzed is the written records of public consultations held to receive comments on the project. These

records include the officially documented hearings conducted by the government to discuss these projects and several petitions and submissions made by citizens to the public hearing panel as well as directly to the government.

The EIA and public consultation reports are public documents as a result of the amendments to the EIA Notification since 2002 under India's Environment (Protection) Act (EPA), 1986. These are made available through specific government offices and their official websites. Government planning and policy documents are available to citizens through an application process under the Right to Information (RTI) Act of 2005 (Ministry of Law and Justice, 2005). The government has also uploaded many reports and policy documents on their websites as they are expected to disclose them "*suo moto*" on their websites under Clause 4 of the RTI Act.

These three sets of documents are my primary sources of data. The documents carry the voices of different actors, which could be broadly classified as governments, citizens and experts, who were involved in the debate on large dams in Northeast India. A qualitative approach to analyzing these documents offers a rich possibility of valuing contentious debates on development, a term that is understood, articulated and related to in very diverse ways by these actors. Using these documents, I outline, compare and discuss the main themes that animated the contestations around the three specific dam projects and reflect on the wider debate on hydropower development in Northeast India.

My research methodology involves qualitative, thematic and policy analysis of the above documents. Documents are unique in that they are sources valuable "in their own right" but are also products of a context (May, 1993). While they are made in the context of certain bureaucratic procedures, they also influence any reader's views and decisions. Bureaucratic documents produced for specific purposes are often dismissed as impressionistic (*ibid*). In my thesis, I use EIA and Public Hearing reports of the proposed dam projects as sources of data as well as examine them in the context in which they were produced. The knowledge-making processes and practices, of which these documents are the result, are of as much interest to my analysis as the contents of these reports. The creation of these documents and contestations over these

documents where binaries were questioned, categories broken down and discourses ruptured are the central focus of my thesis.

The reading of textual documents as a method of study is significantly influenced by the reader's subject position. The reading of texts can be greatly shaped by the reader's access or lack of access to places, people and relationships that are the subject matter of these texts. This method of analyzing texts is particularly beneficial to my thesis as it complements my earlier role and work with communities in this region. Before working on my thesis, I spent eight years working as an environmental campaigner on hydropower dams in Northeast India. During this period, I travelled several months a year in the region, mainly in Assam, Arunachal Pradesh and Sikkim, connecting different communities and community organizations who had little information about the scale and extent of hydropower development that the government was proposing for the region and how they would be affected by these projects. My colleagues and I obtained the bulky EIA reports from government offices and travelled with them in our backpacks to share them with communities who lived far away from government offices or internet services and had limited means to obtain what should have been accessible to them rightfully. We read these reports together as collections of wrong or misleading facts and our work entailed mobilizing and presenting counter-facts to the relevant government bodies to apprise them of what we understood to be the potential impacts of these projects.

This thesis provides me a valuable opportunity to reflect on my past work as a community organizer. The methodology of analyzing official texts within their particular contexts of production offers a deeper insight into the processes of making and remaking of knowledges about people and places. The underlying dynamics of these knowledge-making processes and contestations are critical to assess the scope and limits of participatory environmental governance that is a worldwide phenomenon today.

1.3 Theoretical Frameworks

My thesis rests on a theoretical framework that is guided by key concepts within two rich sets of theories in the social sciences, the theories of development and the

sociology of space. At the turn of the millennium, the energy and water bureaucracy of India turned its gaze towards the Eastern Himalayan region. According to them, this region at the border of India and China had some of the best sites for generating large-scale hydropower due to the steep drop of gushing perennial rivers from the mountains. The central government drew up an elaborate plan to manage and control these regional hydraulic flows to generate the much-needed electricity to meet India's surging domestic demand and to respond to climate change concerns about its growing carbon emissions. In my thesis, I hope to explain how the official and popular arguments around hydropower dams were spatialized as the frontier development of a region that was seen as backward and marginalized.

Doreen Massey's "geographies of social relations" (Massey, 1991) is particularly insightful to bring to focus the history of connections and disconnections that the Northeast region has faced in India and South Asia. Through the postcolonial period of state developmentalism in India, the central government maintained a grip over the flows and interconnections of people, materials and ideas in this peripheral region that became India's international borders. The border control and management of the Northeast region, dominated by long periods of armed struggles, mal-governance and underdevelopment continues to impact the lives of citizens here. The central government designed and proposed multipurpose dam projects to regulate the rivers of the region in the name of development since the 1970s. But these project blue prints did not materialize despite regional demands for protection against the annual floods caused by the Brahmaputra. These projects became real possibilities only with the capital flows generated in the wake of economic liberalization in India.

The proposal for hydropower dams in India's border states such as Himachal Pradesh, Uttaranchal, Sikkim and Arunachal Pradesh can be understood through David Harvey's critiques of capitalism's survival through the "territorial logics of power" (Jessop, 2006). Conventional planning treats regions as abstract spaces. The spaces within state territorial control are produced and reproduced with the changing needs of globalized capital. India's growing economic growth rate required greater energy supply from cheap and "renewable" sources. Hydropower dams, which were delegitimized as a technology of energy production by social movements, were brought back as development policies for India's border regions. The economically

underdeveloped and fiscally dependent mountain states were seen to provide a “spatial fix” to India’s capitalist, energy intensive growth needs. Similar processes in the neighbouring countries of Nepal, Bhutan and China caused the Himalayan region to become the new terrain for hydropower expansion (Vidal, 2013). But the moves to implement these projects also created political and social instability and insecurity in these regions.

In the interim years between when the projects were first designed and when the government sought to implement them, the “geometry of power relations” had changed significantly (Massey, 1991). As my thesis shows, the neoliberal state, decentralized institutions, landed tribal elite, landless peasant organizations and civil society groups, environmental discourses, regulatory procedures and altered Centre-state relations were implicated in project decisions and outcomes. New legal regimes institutionalized the involvement of affected communities in developmental decision-making. These participatory spaces were acted upon and reorganized by local people who may have otherwise found it difficult to negotiate well-established power geometries.

In my thesis, I try to understand the government’s failure to implement hydropower dams in Northeast India through Michael Goldman’s characterization of transnational environmental states wherein political power flows through “green knowledges” (Goldman, 2001, 2005). Development, as a set of institutional procedures and practices has seen a tremendous shift due to critiques of the state (Nederveen Pieterse, 1998). By the 1960s and 70s environmental and labour concerns that had already taken root and grown in the public arena in the US and Europe. The concerns of the ‘risk society’ or the production of “bads” in economic systems had to be addressed (Beck, 1992; Giddens, 1990). While neoliberalism was projected as the cure for social inequalities, the efforts to regulate, manage and mitigate ecological concerns took the form of institutionalised environmental politics (Bulkeley & Mol, 2003; Weston, 2004). Under neoliberalism, there was a shift in the legislative and institutional frameworks for development around the world, the most prominent being the systems for Participatory Environmental Governance (PEG) through Environment Impact Assessment (EIA). EIA is a set of regulatory practices to identify, measure and mitigate harmful impacts of development and infrastructure projects. These practices

include seeking public opinions as well as views of technical experts on proposed projects. EIA based decision-making exists in 191 countries (Morgan, 2012). The emergence of this globalised environmental regulatory regime has effected state power (Goldman, 2001). These regimes of “green knowledges” have been understood as forms of ecological modernisation (Hajer, 1995). They have been critiqued for producing new forms of eco rationality legality, and environmental subjectivity (A. Agrawal, 2005b; Goldman, 2001) and causing environmental or social injustice (Harvey, 1996; Mol & Spaargaren, 2000).

Using a theoretical framework that weaves together social theories of space and development I try to show the scope of participatory environmental governance to politicize development. I analyze the “public hearing” forum as a site of new knowledge production where officially given expert facts were contested, unsettled and new ones were generated. Participatory environmental governance made necessary the meeting, clashing and transformation of expert and non-expert discourses of environment and development. I examine the scope and limits of public hearing spaces and its role in reassembling development imaginations and developmental outcomes. The participation of affected people in shaping, contesting and expanding the discourses of development in the region can be explained through “place- making” strategies that have been theoretically outlined by space theorists Soja, Lefebvre and Massey (Hubbard & Kitchin, 2010). According to Massey’s formulation of “progressive sense of space”, places are not pre-given geographical or political territorial units or locations but are fluid and contingent rearrangements of power relations. Places, by this understanding, are processes and outcomes of power geometries (Massey, 1991). This is pertinent to the understanding of contestations around hydropower development in the Northeast region.

The debates over large hydropower dams in the Northeast region generated and gave voice to the diverse imaginations of development that were bound up with the quotidian lived experiences of the people of the region. The debates pushed all actors involved to find a place for socio-ecological relations in their varied imaginations of development of the region. Are rivers national assets or a resource belonging to riparian communities? Should the region’s rivers and riverine relationships be sacrificed for development? Should development be centred on the sustainable

management of water and land? Are rivers and forests sacred or economic resources? Are they important for livelihoods and cultural expression? Who should decide the futures of the ecologies and communities of the Northeast? The contentious debates around these questions generated by the legally mandated participatory environmental governance (PEG) are yet to be concluded. But a careful analysis of these debates is useful to theorize the role of PEG, a globally institutionalized form of development practice, in generating, unsettling and rearranging developmental discourses. The new discourses and imaginations that may emerge from such processes have great significance for politicizing and democratizing development.

1.4 Literature Review

My literature review runs along three themes. These are outlined below.

Dams and Development: Building dams for development has been contentious the world over and in India, the third-largest builder of dams. Scholarly writings on large dams and development show that dams have been seen as the technology for economic growth and modernization through irrigation, flood control and electrification (Omvedt, 1999; Rangachari, 2005b; Verghese, 2007). Experts also state that it plays a role in India's energy security portfolio as a low carbon and renewable domestic fuel in the context of climate change (Briscoe, 2014; Chellany, 2013). The role of fossil fuels in global warming has given hydropower dams a favorable place in renewable energy policy (Pittock, 2010). On the other hand, scholars have marshaled arguments regarding ecological costs (Bandyopadhyay, 2012; McCully, 2001), social impacts (Khagram, 2004; S. Kothari & Thakkar, 1998; Singh, 2003) and unfavourable economic and cost-benefit ratio (Ansar, Flyvbjerg, Budzier, & Lunn, 2014; Duflo & Pande, 2005; Leslie, 2014; Scudder, 2006) to show that dams cannot lead to development. Recent critiques of dams in the light of climate change have been around the claims of hydropower being a clean source of energy due to its high GHG emissions (Wehrli, 2011) and geological risks (Grumbine & Pandit, 2013).

Based on specific project analysis (Dharmadhikary, 2005; Dwivedi, 2006), technological choice (Baghel, 2014; Bandyopadhyay, 2012) and broader discourses of political economy and state hegemony (Roy, 1999; Singh, 1997), authors have concluded that large dams do not deserve a place in energy and development policies.

However, large dam projects continue to be planned and executed despite evidence of their poor performance leading scholars to conclude that dams are political projects as much as they are technical objects meant for economic development (Baruah, 2012b; D'Souza, 2003; Singh, 1997). Scholars show that under neoliberalism, governments build large infrastructure projects such as dams as they make possible the re-regulation, privatization and commercialization of water and energy (Bakker, 2003, 2007). In such projects, private profit is maximized and impacts are socialized. The production of hydropower through green regulatory practices, institutions and discourses has sustained the building of dams despite their contribution to environmental damage and social inequality.

Frontiers and Borderlands: The Northeast region forms the border of the Indian state with Nepal, Bhutan, China, Myanmar and Bangladesh. A series of partitions have rendered the region nearly cut-off from the Indian “mainland” except for a slender landmass called the “chicken’s neck” in North Bengal. The region is home to over a hundred, small and distinct communities, most of them recognized as “Scheduled Tribes” by the Indian constitution and allowed a system of self-governance of land and natural resources. This makes the region a densely “ethicized landscape” (Baruah, 2003b; Pfaff-Czarnecka & Toffin, 2011). Scholars describe it as a region fragmented by administrative “inner line” that separates the foothills from the plains and external territorial boundaries of the Indian state. Abraham describes the region’s unusual predicament of being inside and outside using Agemben’s phrase--a “state of exception” (I. Abraham, 2014). The effects of partitions and creation of ethnic territories play out even today in the form of violent ethnic clashes between communities, resource conflicts, secession demands and civil disobedience.

There is rich scholarly literature on the making of the Northeast region as the territorial (Baruah, 2005; Bhaumik, 2009; Kikon, 2008a; Ludden, 2012), policy (I. Abraham, 2014; McDuie-Ra, 2009b, 2009a) and resource frontier in the colonial (Cederlof, 2009; Arupjyoti Saikia, 2008; J. Sharma, 2011) and postcolonial periods (Barbora, 2002; Karlsson, 2011; D. K. Mishra, 2018; Nongbri, 2001). These scholarly works are instructive to understand the relationships between mainland India and its northeastern periphery. The region is recognized among the 22 global biodiversity hotspots of the world (Myers, Mittermeier, Mittermeier, da Fonseca, & Kent, 2000).

In recognition of its immense biological diversity that is yet to be studied fully, conservationists have termed the region a “biological frontier” (C. Mishra & Datta, 2007).

Environmental scholars have studied the effects of resource appropriation and ecological modernization on the region and its communities in the fields of forest conservation (Nongbri, 2001), wildlife conservation (Arupjyoti Saikia, 2011), agriculture (D. K. Mishra, 2018; Arupjyoti Saikia, 2008), shifting cultivation (Kerkhoff & Sharma, 2006) and hunting practices (Aiyadurai, Singh, & Milner-Gulland, 2010). They have drawn attention to the privatization and commodification of ‘wastelands’ (Arupjyoti Saikia, 2008), coal and timber (Karlsson, 2011; McDuierra & Kikon, 2016) causing displacement, ethnic conflict and struggles for homelands (Barbora, 2002; Baruah, 2003b; Fernandes & Barbora, 2008). Recent literature has tried to problematize the role of decentralized self-governance and tribal elitism in resource management conflicts and pointed to the multiple, overlapping and contradictory legal and institutional practices of resource use in the Northeast region (Karlsson, 2011; D. K. Mishra, 2018; Navlani Soreide, 2017)

Planning documents refer to the region as “a latecomer to development (Planning Commission, 1997). They refer to its flowing rivers that connect communities, are a source of livelihood and mobility, soil nourishment and cultural identity, as “abundant” water resources. The enframing of the region as a ‘neoliberal environment’ with an abundance of water resources (Mehta, 2001) sits within the Indian government’s larger strategy for regional economic development and poverty alleviation (KPMG & FICCI, 2015; Madhab, 1999). Economic development made possible by regulating water flows is viewed as a tactic of counterinsurgency and domestic peace building (Ministry of Development of North Eastern Region & North Eastern Council, 2008). Scholars have also shown that the regional development of the Northeast is tied to India’s foreign policy to “look east” and to make the NE region a bridge between India and Southeast Asia (S. Das, 2010).

Scholars have studied water conflicts that have arisen from the managing flowing rivers through “trapped” territorial spaces (Chokkakula, 2012; R. R. Iyer, 2003; S. M. Moore, 2018). Water governance of the Brahmaputra river system poses a challenge

for policy-makers, as it is an international river system flowing through three countries. As Cullet has pointed out international water governance is particularly challenging because it is directed more by policy than law and in the absence of a well-developed treaty regime for sharing of water (Cullet, 2011, 2013). International Relations and Security Studies scholars discuss this moment of planning hydropower dams in this region as a diplomatic opportunity to seek resource cooperation with neighbours, China and Bangladesh (N. Kurian, 2009, 2016) as well as bolster India's water and energy security (Chellany, 2013; N. Ghosh, 2018). Various institutional and policy changes have been adopted to facilitate the management of water resources for the Northeast region's development. These have evoked responses from the "subnational units" with demands for greater say in regional governance and resource federalism (N. Kurian, 2009).

Participatory Environmental Governance: Participatory governance emerged as a form of decision-making to define, address and mitigate environmental problems. Scholars from the fields of political ecology, environmental management and legal studies discuss its emergence in the West in the 1960s when environmental problems gained public attention and governments were under pressure to act in public interest. Weston argues that this led to an institutionalized legal framework of governance such as the Environmental Impact Assessment (EIA) that formalized expert-led and public participation based decision-making (Weston, 2004).

Participatory governance systems spread globally after being introduced in the industrialized nations of the West (Cashmore, 2004). They exist in almost all developing countries (Biswas & Agarwal, 1992). It has been applied for policy making, for project decision-making and mitigation. It has altered governance from being closed-door collaborations between interested parties to open, public consultations. It has gained so much significance that non-participatory decision making is regarded as "illegitimate, ineffective and undemocratic" (Bulkeley & Mol, 2003).

Scholarly studies show that participatory forms of governance seek to achieve varied outcomes such as information generation through access to local knowledge (Pellizzoni, 2003) information sharing (Arnstein, 1969; Shepherd & Bowler, 1997),

managing expectations and conflicts (Fung, 2006), behavioural change, social learning and informal education (Sinclair & Diduck, 2000) besides the normative aspiration for democratizing environmental governance (Backstrand, 2004). The involvement of non-state actors and their influence on the public spheres constituted by the media, courts and scientific institutions is seen as needed to unsettle the “ascendency of expertise” (Irwin, 1995) unsustainable networks (Smith, 2000) and scientocracy (Lele & Norgaard, 2005). The role of the expert has been discussed extensively in scholarship that range from seeking greater scientific rationality and positivism on the one hand (Cashmore, 2004) to collaboration and greater reflexivity and on the other (Bond, Morrison-Saunders, & Pope, 2012; Glasson, 1999) in producing effective “green intelligence” for sustainability. Interdisciplinary scholarship engages with these issues as shifts between technical democracy to deliberative democracy or a “civic model” of participation (Callon, Lascoumes, & Barthe, 2009; Fischer, 2000).

There is extensive scholarship on the procedural aspects of participatory models with recommendations for the how, who and when questions around participation (Arnstein, 1969; Fung, 2006; Shepherd & Bowler, 1997). These questions could determine the limits of influence on official decisions, the effectiveness of outcomes or the substantive sustainability goals of PEG (Newig & Fritsch, 2009). As Pellizzoni points out complex issues of uncertainty, risk and representation can limit the results (Pellizzoni, 2003). Scale has been a critical concern for participatory models of environmental governance. Is localized participation more effective for sustainability or wider participation at national scale? Should there be a match of the scale of environmental problems with the scale of institutions to address them? (Bai, McAllister, Ryan, Beaty, & Taylor, 2010; Maynard, 2013). Locality may present the problem of collective action as suggested by Hardin’s tragedy of the commons (Hardin, 1968), however Ostrom’s work shows that local resource rights can also be a motivation for collective mobilization and cooperation (Ostrom, 1990). PEG could also be a bridge to cross over between geographical and jurisdictional boundaries in areas such as water management (Delli Priscoli, 2004).

Political ecology and poststructuralist critiques of participatory resource governance draw attention to the shift from “government to governance” as a result of reorganized

relationships between state and society (Bulkeley & Mol, 2003). They have pointed to outcomes of participatory models such as environmentality (A. Agrawal, 2005b) and ecological modernization (Hajer, 1995; Joan Martinez-Alier, 2002) leading to the consent and compliance to inherently unsustainable and socially unjust policies and the consolidation of power and legitimacy by state (Bulkeley & Mol, 2003). However, the scholarship on agency has problematized these. Bostrom argues that participatory governance could allow the reshaping of more diffuse power struggles outside the hierarchy of the state (Bostrom, 2003).

1.5 Analysis and Research Contribution

In my thesis, I engage critically with the literature on large, state-initiated and controlled dams in India and globally from technical, social and ecological perspectives. Dam building has been an integral part of India's postcolonial developmental project. Over 5000 large dams have been built on the promises of providing irrigation for the expansion of agriculture, industrialization and urbanization. These projects have also brought immense misery and impoverishment to large numbers of affected families. Yet, the Indian government hoped to implement large hydropower dams on a transnational river system flowing through India's northeastern borders as a route to its energy and environmental security. My thesis aims to explain how the government went about implementing this grand plan and why it did not succeed. In doing so, I hope to advance the literature on two conceptual areas that are critical in social theory. One is related to collective agency building and the other is on reflexivity on questions of development.

Public consultations and agency building

My thesis adds to the literature on political ecology by critically analyzing the role and scope of citizen participation in environmental consent processes. Public Hearing procedures for large development projects have been legally mandated in India since the 1990s. These procedures frame the consultations between state and citizens on matters of development, redistributive justice and environmental protection. Yet, there has been relatively less scholarly attention paid to the structure and content of these hearings and their role in collective agency building. If listening is about power,

then how does they state wield this power and to what effect? Scholars have tended to ignore the public hearing forum as a site of non-state power as the public hearings have had limited influence over final project decisions. I try to show that the explanations for the contingent failure of the Indian government to implement what James Scott calls “high modernist government schemes” (Scott, 1998) to regulate nature lie not in the government’s hegemonic stance but in its awkward and unreflexive consent-making efforts.

This thesis is located within the prevailing currents of academic policy debates about energy governance and “social license to operate” (Dare, Schirmer, & Frank, 2014; Gunningham, Kagan, & Thornton, 2004). During the period when dam proposals were being contested in the Northeast, dams came up in other parts of the Indian Himalayas, especially in the hill states of Sikkim, Himachal Pradesh and Uttarakhand. This makes the study of the collective responses to the dam proposals in Northeast India and the reasons for the failure of these proposals significant. How did the communities frame their responses to these proposals and achieve these outcomes? As Kirchherr et al. note, successes of social movements around large dams in recent years are rare (Kirchherr, Charles, & Walton, 2017). The case of the dams in Northeast India is important to understand the dynamics of social movements around large-scale ‘renewable’ energy projects, especially hydropower projects that have made a comeback due to concerns over carbon emissions of fossil fuel use.

The public hearings for the Northeast dams show that while on the one hand dam builders deployed various strategies to make the approval process as predictable and speedy as possible, communities engaged with the dam proposals and actively expanded the boundaries of project sites, impact areas, benefits and compensations. They imposed a range of staggered and contradictory demands on these projects and politicized them. They challenged mainstream governmentalist discourses in these hearings and outside them. The government’s overtures to “hear” the public showed that it was less concerned with the democratization of environmental governance. Efforts by the protestors to be heard were responded to by impositions on free speech and treating mobilizations as disruptions of social order. These dynamics around the public hearings exposed the state’s dam building efforts that were couched as its responsibilities to improve the economic development of the Northeast region. The

public discourses showed that the dams could directly benefit few elite and political institutions.

My thesis also responds to a need to theorize the ways that local communities of this region have utilized the official consultation processes to negotiate positions which are outside the expected binary of 'pro and anti' large dams. Dam building has a contentious history in India but it has been proposed for regional development of the Northeast region for over two decades. The Northeast region is known for its volatile politics and has seen insurgent struggles on a regional scale. This study of public hearings points to the role and potential of knowledge making and agency-building in this region that has an unsettled political relationship with the Indian state and also aspires for development. It adds to the critical literature on public hearings in India as a form of collective action or politics (Tawa Lama-Rewal, 2018). It is testimony to the need and possibilities of democratization of development beyond the provisions of the *Panchayati Raj* Institutions (PRI) and constitutional safeguards for *adivasi* and tribal communities through the recognition of Scheduled Areas.

My thesis analyses a large number of written submissions made by the literate communities of the Northeast region on these dam proposals. Great labour was put into preparing these submissions and some submissions were also presented orally at the hearings, as shown by the official minutes of these hearings. These documents were important tools of popular knowledge making as they could be reproduced and circulated. They could be and were made available to all decision-making bodies, to media houses and stored for later use. The comparison of written submissions by participants and the official minutes of the hearings publicized after these events reveal the relationship between knowledge production and power. The thematic analysis of the public hearings shows a raft of positions articulated at the hearings. This demonstrates that public hearings are not a forum only for those agreeable to government-backed projects. It may seem to be a Faustian bargain to participate in debates that are forced to take place on the terms of the state. But the participants are not entirely helpless. They show that knowledge and agency can be used to shape each other. Foucault's work on governmentality or government rationality and its extension to the creation of environmental subjects by Agrawal suggests that participation in regulation could result in the realizing of governmental aims by its

subjects (A. Agrawal, 2005a). This framework seems all too knowledgeable of the outcomes of participation. As Tsing states the framework of governmentality can deaden ethnographic imagination as it seems to know far too easily the answers in advance of the questions of global standardization (Tsing, 2009).

My thesis helps to understand the official and non-official efforts of knowledge making in relation to situated projects. The debates on large dams in Northeast India reveal the active work done by local people, seen as passive recipients of much delayed border development or as victims of state power, in reassembling the discursive and highly emotive development narratives. The illumination of these geographies of knowledge making is critical to understand environmental policy and politics. Academic scholarship has shown the need to move from participatory to deliberative forms of governance to overcome majoritarianism and other limits or pitfalls of democratic governance (Elstub, 2010; Fischer, 2000). My analysis shows that even in these skewed forms of official consent making processes, the outcomes of public participation were anything but predetermined. There was disagreement, resistance and dissent. Those who do not resist openly, engaged in efforts to subvert plans and projects to make them work for them.

The practice of public hearings as consent making and as legitimizing harmful projects does indeed demonstrate the recognition of state power. Contrary to functioning as a feedback loop or a “social appraisal” of technologies for development, they are treated as forums for consensus building (Stirling, 2005). But the outcomes of these efforts are contingent on contestation dynamics. It is not inevitable that these project sites will be taken up or contested either inside or outside their institutional remit. Agency is not structurally determined, as reflected in the varied outcomes of these EIA initiatives.

EIA and Reflexivity

In my thesis, I outline the international debates on the Environmental Impact Assessment regimes as a process of public deliberation on development and analyze its application in India for a set of new hydroelectric dams proposed to be built in Northeast India. Studies on ‘epistemic culture’ turn the spotlight on the networks and

machineries of knowledge construction (Knorr-Cetina, 1999; Poovey, 1998). Though the global and domestic social movements of the 1980s were successful in delegitimizing these technologies, the government assumed that it would be impossible to resist dams in these times of climate change. Rather than democratizing the policies for energy development, the Indian government imposed these projects on the people of Northeast region. The EIAs hyped the claims of the large private and government dam builders in the name of energy and environmental security. EIAs for new hydropower projects were the result of the Indian government's reflexive traditionality (Bostrom, Lidskog, & Uggla, 2017) to reintroduce large dams as a technology of border resource development. As noted by Sinclair and Diduck, the public was given to believe that the projects would be approved by the government (Sinclair & Diduck, 2000).

Increasingly Indian EIAs have no need to establish purpose or alternatives, they are narrowly focused on technical aspects of projects. The EIAs are framed by "neoliberalism's densely rationalized development narratives" (Nixon, 2010). Glasson observes that EIAs may even be on their way out. Glasson shows that as commercial rivalry and competition intensify on the one hand and sectoral investments are yet to stabilize, investments in EIAs could also decline (Glasson, 1999). In India and in other countries, contentious projects are increasingly being exempted from EIA requirements. Seeking out the lowest bidder among private consultancy firms to do EIAs cause a spiraling down of the quality of EIAs (Wright et al., 2013).

In my thesis, I show how the EIA was deployed as a discursive tool of neoliberal developmentalism to enable the commodification of water resources in the Northeast region (Bakker, 2003, 2007). The EIAs redefined lived places as socio-technical 'development sites'. I argue that the socio-political processes of EIAs were centred on the disjuncture between place-based experience and developmental expertise, between socio-ecological relationships and the ideologies of ecological modernization. I outline some of the key strategies of measurement in the form of 'scoping matrix', 'baselines', 'indicators' of 'backwardness' and 'environmental management' that generate the trade-offs and associated cost/benefit ratios feeding into the instrumentalist and utilitarian models of environmental governance. I try to show the confrontation between these modes of knowledge making, with aspects of state power

on the one hand, and with the localized social dynamics on the other. This, in my view, produces an important ‘epistemological critique’ of EIA that points to the political possibilities that are created by EIA’s legitimation failures.

I try to explain the contestations and contingent outcomes of hydropower development in India’s Northeast region through this prism of ‘reflexivity’. I show that the responses to the dam proposals and EIAs created new political possibilities and constituencies. What does this say about development? Using Sanyal’s description of the complex nature of “hegemon”, it would appear that possibilities of alternatives are but an integral part of a complex hegemonic order (Sanyal, 2007). Development, like capitalism, expresses its dominance and works through difference but it also generates reflexive thinking about what it means to be developed/underdeveloped. My analysis of the EIA and public hearings for dams in the Northeast outlines the key themes invoked in public discourses to contest the techno-hubris of the government. These contestations revealed the power of EIAs to politicize mainstream development. These contestations, however contingent, shaped politics, created agency and altered visions of development. The evidence of mobilization of views both against and beyond the government proposals allow for the theoretical conceptualization of agency and reflexivity in the ‘shifting public space’.

Dams and development debates over four decades show that minority ethnic communities have borne a disproportionate burden of the impacts of dam projects in India. What motivates their public participation in developmental decisions if they are already seeped in discourses of the state and where outcomes or decisions seem predetermined? And what is achieved by such public involvement? Postdevelopmentalism scholars and ‘tribal’ policies tend to essentialize ethnic minorities or local communities as being anti- state or close to nature. There are few studies that explain why ethnic minority communities who are likely to be affected by state planned projects engage with such interventions (Asher, 2009; McDuire-Ra, 2011; Donald Moore, 1999; Murray-Li, 2007). My thesis shows that efforts to be counted, to be heard and spoken to can be understood as agency. Agency against discourses of marginalization generates a range of nuanced positions that lie between mainstream development and postdevelopment theories. The stalling or delay of

projects is often disregarded as an effect of agency as its effects can be temporary. However, it is crucial to provide time for reflexive thinking about the incommensurability of top-down models of development and place-based socio-ecological practices. It can be valuable to give shape and voice to notions of development that are based on principles of non-appropriation and non-divisiveness of ecology and against market-driven ecological modernization.

The Northeast region is an area in need of development as seen by many submissions made in the public hearing processes, yet many participants were reflexive in not merely seeking “developmental space” as has been India’s position in the climate change negotiations. Their articulations for development were not in the form of unconditional acceptance of mainstream discourses of economic inequality. Instead the debates around hydropower in the region show the aspirations for locality and modernity. These views point to the desire for transformative possibilities involving change in values. As Temper et al. note, transitions involve “artifacts and technologies” but transformations are about “new subjectivities, power relations, values and institutions”(Temper, Walter, Rodriguez, Kothari, & Turhan, 2018). This observation is significant given that hydropower is pitched as part of the global energy transitions to renewable energy. These effects of the EIA and public hearings for large dams in Northeast India also allow us to theorize PEG as sites of energy democratization. This scope of participatory governance is crucial to the Indian context given India’s strong constitutional frameworks for grassroots democracy, its caste and ethnic divisions and high inequality due to the failures of neoliberalism.

Agrawal’s ‘Environmentality’ shows the importance of the relationship between regulatory environmental practices and subject formation. Technologies such as PEG may be exercised by the government to create environmental subjectivities that produce compliance, consent or consensus, but the participants at the debates on dams in the Northeast region showed that such technologies also generated agency and reflexivity among participants to find ways to transform their own conditions. The debates against and beyond hydropower development in Northeast India point to the contingent formation of ecological constituencies that value water governance as a dynamic terrain of new possibilities. The government plans viewed the dam-affected communities of the Northeast as land-based communities with fixed identities and

territorial spaces. The debates on hydropower in the region mobilized communities as river-based peoples whose survival and wellbeing were tied to the ebb and flows of the region's flowing rivers. My thesis shows that the emergence of contingent ecological constituencies gives hope to rejig ideas of democracy, participation and sustainability in more meaningful ways.

Possibilities of further research

The opposition to the proposed large dams, approvals granted by governments and the unmet local demands for land rights, resurveys, compensations and jobs provoked a number of legal cases in courts. These cases have been held responsible for the further stalling of the dam projects. Cases related to the Dibang and Lower Demwe projects in India's special 'green court' called the National Green Tribunal (NGT), continued through the period of this research and concluded only by the end of 2018. The judgments in these cases are likely to be challenged in the higher courts. It was difficult to track and analyze the cases related to the Dibang, Lower Demwe and the Lower Subansiri dam projects in the High Courts, the Supreme Court and the NGT during the time period of this research. Further research to understand how these legal public spheres, starkly different in their methods and objectives from governmental participatory processes, influence and intersect with the ground level and governmental politicization of dams in Northeast India will be useful and important. The study of the role of legal and judicial discourses could further illuminate the scope of participatory environmental governance in contentious development.

In the last chapter on downstream resistance narratives to large dams, I suggest that the water-based narratives in Assam may have helped protest discourses to resist being 'managed' by official decision-making or be 'co-opted' by majoritarian political forces. Scholars have documented these intersections related to the protests against the damming of the Ganga. Similarly, protest narratives based on the concept of 'cultural landscapes' in Sikkim resulted in zoning out large dams from certain areas of the state but not necessarily off the rivers. These different dam protest narratives and their varying outcomes would be useful to understand and theorize through comparative research of social movements on dams. Such research could provide insightful lessons for scholars and communities engaged with water governance

policies and seemingly new ‘climate-friendly’ hydropower dams proposed for the Himalayas and other regions.

Several vocal leaders of dam protests in the Northeast region, especially in Assam, had worked closely with Bharatiya Janata Party (BJP) and its allies who were in opposition since 2000, to influence the Congress governments at the Centre and in the Northeast states. When the BJP and its allies came to power at the Centre and in the Northeast state elections after 2014, anti-dam leaders who contested and won elections gained political power. Although political power shifted hands at the Centre, there was no change in the central government’s support for large dams and they issued approvals to some projects. In this situation, the present task of the region’s anti-dam politicians is unlikely to be an easy one. There is little evidence of dam construction resuming in the region, especially on the half built Lower Subansiri project. On the contrary, the ground level protests in Upper Assam have been stoked again by the news of the central government’s plans to restart construction activities this year. The compulsions of realpolitik could unsettle and reconfigure the social dynamics related to large dams in the region. Scholarly research to understand the overlapping political spheres of influence with respect to large dams and development in the Northeast region will help to enlighten how and if political transitions of the nature we see today inhibit or encourage meaningful developmental transformations.

1.6 Thesis Chapters

This thesis contains eight chapters including this introductory chapter. This first chapter outlines the objectives and research questions that the thesis aims to study and the theoretical frameworks, approaches and methods that are used towards the study. This chapter contains short summaries of three sets of literature reviews presented in the second, third and fourth chapters. This chapter also discusses the analytical contributions that the thesis makes to the fields of participatory environmental governance and politicization of development in the borderlands of Northeast India.

The second chapter is a literature review of dams and development in India. This chapter presents the rich scholarship on large dams as global symbols of modernity and progress and the critiques of large dams for their ecological, social and economic

impacts in India and in other parts of the world. The chapter locates the research questions of this thesis within the scholarly literature on development, alternative development and post development theories. It concludes that an understanding of the politicization of development through reflexivity and collective agency of ethnic minority and local communities of Northeast India helps to create a theoretical bridge between these rich theoretical pillars.

The third chapter locates the emergence of dams as a tool of development in Northeast India within the region's colonial, postcolonial and neoliberal developmental contexts. This chapter elucidates the environmental politics of Northeast India through the lens of colonial capitalist extraction, securitization of the region and discourses of economic underdevelopment. This chapter shows that 'frontier exceptionalism', elucidated by many scholarly works on the Northeast region, is an enduring principle of governance of the region and the hydropower development policies of the central and state governments of the region can be understood as an outcome of this approach.

The fourth chapter locates the Environmental Impact Assessment and public hearings, the cornerstone of Participatory Environmental Governance (PEG), within the national and global discourses of neoliberal development. The chapter outlines the emergence of PEG in the US and its adopting by many developing countries through the international environmental conventions and the role of International Financial Institutions (IFIs) like the World Bank. The chapter also shows that the adoption of PEG in India coincided with the privatization of production sectors. This chapter discusses the role played by PEG approaches to development to legitimize the shift to neoliberalism despite state failures in India while also regulating industrial actors for political expediency.

The fifth chapter analyzes the Environmental Impact Assessment reports of three of the largest hydropower dams proposed for Northeast India. The chapter outlines the institutional networks of EIAs that bring legitimacy and power to EIAs. The chapter charts the modes of knowledge making in EIAs through the thematic discussion on the discursive production of 'backwardness', commodification of water and resource

management. Through these themes, the chapter produces an epistemological critique of this tool of developmental decision-making.

The sixth chapter analyses the multiple framings and meanings of public participation by state and civil society actors in the border state of Arunachal Pradesh, the site of most hydropower dams proposed for the Northeast region. The chapter outlines the public hearings that were held for the first time to build consensus and manufacture consent for the large-scale state planned hydropower projects. The chapter concludes that contrary to achieving its official objectives, the public hearings revealed the inability or the unwillingness of the state institutions to hear the public. The chapter concludes that the public hearings generated opposition and collective agency instead of consent, consensus or conflict management over hydropower development.

Chapter seven outlines the demands posed by the indigenous communities who participated in the public hearings on large dams in Arunachal Pradesh. The chapter theorizes the economic needs of the indigenous communities of Arunachal Pradesh, which they sought to realize at the public hearings on large dams. The chapter discusses the negotiations and strategies adopted by minority ethnic communities to make state planned development projects work for them.

The last chapter analyses the protests against the government's large dam proposals in downstream Assam. The chapter outlines the main themes that provoked intense protests that have to this day held up the construction of the three dam projects analyzed in this thesis and many others that were proposed. While the government narratives explaining these protests has only been one of stalling development in the region, the peasant communities of the Brahmaputra floodplains in Assam produced resistance narratives and solidarities that could form the basis of ecological constituencies in the region. These new, contingent and fluid identities offer hope to build new forms of democratic institutions that recognize our relationships with ecologies.

CHAPTER 2

THE LARGE DAM AND ITS CRITICS

Large dams are the biggest and most numerous of the heavily funded water and energy infrastructures in the world. They have been built in most parts of the world throughout most of the 20th century even as they have been the subjects of polarized debates through these decades. In this chapter, I present the main framings of the contemporary global debates on large dams and development. I review the scholarship on these large infrastructure projects that have been one of the most widely used technologies for modernization and development across the world. I trace the shifting fortunes of large dams globally and present the discourses that have shaped the understanding of large dams as development. In the first section, I discuss the role of dams within modernization and development theories. Here I present the political and developmental narratives on which dams have been built. In the second section, I present the critiques in favour of and against large dams from the frames of social and environmental impacts. In the third section, I examine the range of technical and efficiency based assessments of large dams. These assessments show that decisions to build these large projects often ignore their impacts and are based on hyped benefits. Scholarly quantitative assessments and qualitative evaluations of dam projects show that have usually not performed as expected. These analyses help to conclude that the decisions to build large dams serve to fulfill political agendas. I conclude the chapter with a discussion on the politics of large dams and development in the context of the proposal to build over 150 large hydropower dams in Northeast India.

Although large dams are one of the most debated forms of development, projects continue to be planned and their outcomes are still open and subject to various historical, political and geographical contexts. Rather than arriving at a resolution at the global scale, these large projects continue to be assessed against their specific promises and possibilities of development. I suggest that the politicization of dams and development by affected communities such as the ethnic minorities of Northeast India is not necessarily oriented against or antagonistic to the idea of development

itself. Contrary to the expectation of both the government and the critics of large dams, the popular public responses to the proposed large dams in the Northeast region did not fit neatly into these debates. Instead local ethnic minorities used the official procedures for consent making on these projects to engage in political negotiations on development issues that they faced on an everyday basis. While there was opposition to these projects on very specific grounds, rich local narratives were also generated about appropriating these projects, re-interpreting their uses and negotiating for meaningful outcomes

2.1 Large dams, Development and Modernity:

Dam building across flowing rivers can be traced back to the most ancient civilizations, however, the ‘modern large dam’ (D’Souza, 2008) or integrated water development projects assembled on river basins with modern technologies and to promote economic and industrial development have been built from the 1900s. As per the World Commission on Dams (WCD) set up by the World Bank and International Union for Conservation of Nature (IUCN) in May 1998, nearly half the world’s rivers today have at least one large dam on them. The total number of large dams registered in the database of the International Commission on Large Dams (ICOLD), a network founded in 1928 with over 90 member countries and 10000 individual members, is 58,266. A large dam is defined by ICOLD as one that stands over 15 metres in height from the foundation to crest. However, Edward Goldsmith puts the largeness of modern dams in perspective. He writes,

“In Egypt the Aswan High Dam is seventeen times higher than the great pyramid of Cheops. In Ghana the Volta Dam holds back a reservoir the size of Lebanon- at 8,500 sq. km, this vast area covers 5 % of the country. The proposed Bakun Dam in Malaysia will be twice as high as the Aswan High Dam and will flood an area of rainforest and tribal homeland the size of Singapore” (Goldsmith, 1998).

Dams have been seen as a symbol of development and modernity, a necessity for economic growth and reducing poverty (S. Kothari & Thakkar, 1998). The proponents of large dams have marshalled arguments in favour of water resource development projects to meet human, agricultural and energy needs. Due to large

variations in the hydrological cycle, dams and reservoirs are required to store water during periods of surplus water availability and conserve the same for utilization when the water availability is scarce. According to them, properly designed and well-constructed dams play a significant role in optimally meeting the drinking water requirements of the people.

Another stated purpose of dams is to develop arid lands into irrigated crop farms. According to estimates put out by the ICOLD and the WCD, nearly half the world's large dams were built exclusively or primarily for irrigation (WCD, 2000). One of the major stated benefits of dams and reservoirs is that water flows can be regulated as per agricultural requirements of the various regions over the year. Dams and reservoirs are also used to control floods by regulating river water flows downstream the dam and "routing floods through the basin without damage" (ICOLD, n.d.). According to ICOLD's figures, 9% of large dams are singularly meant for flood control while 19% of multipurpose dams have a flood moderation component. Dam builders maintain that these dams play an important role in protecting lives and property of people living downstream of rivers.

Dams are integral for hydropower, which according to its proponents, provides a cheap, clean and renewable source of energy. Each hydropower dam project involves holding back flowing river water behind a constructed wall to produce a 'head'. The headwaters are then released through the dam's spillways so that the waters fall from a height over the turbines. The mechanical energy of the rotating turbines is converted into electrical energy and fed to the electric grid. The major advantage of hydropower is that it eliminates the cost of fuel. This means that the cost of operating a hydroelectric station is nearly immune to increases in the cost of fossil fuels such as oil, natural gas or coal. Operating costs are also usually low, as plants are automated require very few staff on site during normal operation (WorldWatch Institute, n.d.). Hydropower is considered a flexible and efficient source of electricity since stations can be ramped up and down very quickly to adapt to changing energy demands. Reservoir based hydroelectric projects provide much needed 'peaking power' to an electrical grid that provides for the energy demands of urban consumers at a large scale. In many countries that have invested in hydropower, the lighting needs after sunset are met by electricity generated from dammed rivers. Unlike thermal power

stations, once built, hydro power stations have fewer technical constraints and are capable of quick start and taking instantaneous load variations. According to ICOLD's database, hydropower accounts for 20 and 16% of single and multipurpose dams built in the world.

While the literature on the benefits of large dams draws on the multiple uses of these fluvial interventions globally, each project that is planned and executed affirms, contests or revises these views based in relation to particular historical and political contexts. Put differently, much as they are technological artifacts, large dams are political projects of their time. Large dams, as we know them today, were a product of the Progressive Era, a period of intense social and political reform in the United States that flourished from the 1890s to the 1920s. The champions of the Progressive movement believed that the key to achieving these goals was efficiency in all spheres of political and public life realized through the ideas and instruments of modern science and technology.

Until the advent of the Progressive Era, all dams served a single purpose, whether it was flood control, irrigation, generating electricity, or navigation. Moreover, a large number of these dams were run and operated by private players. In line with the spirit of the times, the US Federal government initiated legislative reforms that not only expanded the ambit of the government in the management of waterways but also consolidated the disparate jurisdictions involved and hence wasteful exploitation of the nation's water resources into an efficient and multipurpose machine. This was not popular with state governments and the US Army Corps of Engineers, the latter being responsible for navigation and flood control structures. Apart from the fear of losing their traditional turf, the Corps had good reason to be skeptical about the multipurpose projects. Hydroelectric power had yet to compete with other forms of energy in the open market, railroads were giving river transportation a run for its money, and since the idea was still to be executed, people had only a vague sense about its economic viability. These concerns "reinforced the notion that the federal government needed to take the lead on river development because of the complexity of the issues and because of the many jurisdictions involved" (Billington, Jackson, & Melosi, 2005). The USA, Canada, Japan and Europe were among the first to build these projects. Many of these were for hydropower, supported by advancements in construction,

engineering and turbine design, as shown by the share added by these countries to the global hydropower production (Gujja & Perrin, 1999).

It is the period between the 1950s and the 1980s that is called the ‘dam building era’. The number of projects built around the world rose sharply during this period as indicated by the figures put out by ICOLD. The world has built nearly 40,000 large dams during this period with China alone having added 20,000 dams since the revolution in 1949. McCully notes that the peak activity in dam commissioning in Europe and North America was the 1960s, in Asia and South America was the 1970s and in Africa was the 1980s (McCully, 1998). China’s rise as a hydropower builder from only 22 large dams before 1949 to the present day when half the world’s total dams are in this country, occurred through “four waves of dam construction”, between 1949 and 1960 under the Socialist agricultural policy of peasant-built check dams for erosion prevention, the period from 1968 to 1980 for hydropower and flood control, the post 1978 market reform dams built with imported technology and international funding and the post 2003 corporate dams built by public-private partnerships (Anon, 2014a). The projects undertaken during these phases differ in technology, materials and purpose, but they are bound by the state political ideology captured by Mao Zedong’s slogan “Man Must Conquer Nature” (Tilt, 2015).

In Iran of the 1950s the ruling regime of the time had promised high living standards to its burgeoning middle class, whose consumerist lifestyle meant greater demand for electricity. The Karaj dam was proposed to meet this need but the question arose as to who would underwrite such expensive project. Iran used Cold War politics to its advantage by arm-twisting its patron—the U.S. administration that dreaded Soviet influence—into bankrolling the project despite reservations in the US Congress and among technical experts (Schayegh, 2012). In the case of Egypt that became a Republic in 1952 following a military coup against the ruling monarchy, the “abolishment of feudalism” was linked to social justice and a “new democratic life”. The new government took up agrarian reforms that involved bringing water to the desert for agriculture. The dam was also seen as the means to Egypt’s economic modernization by providing for electrification and industrialization needs. The Aswan dam was planned and executed after a series of political negotiations in the shadow of

geopolitical tensions between Egypt, Israel, the US and the Soviet Union (Fahim, 1981).

In India, though dam building started well before it became a modern nation state, large dams have been an iconic symbol of this transition. Changes in technologies from local forms of water storage and diversion for farm irrigation, drinking water and ground water recharge in the form of wells or tanks, weirs and barrages to large multipurpose river valley projects and hydropower schemes, have intersected with nation building narratives and economic imperatives. In the colonial period, these technologies were purportedly to bring ‘backward’ areas under irrigation but post independence, large multipurpose river valley development schemes came to symbolize the “technological mission to convert flowing river waters into national assets” (D’Souza, 2003, 2008). Under the Prime Ministership of Pandit Jawaharlal Nehru, independent India invested hope and idealism in these projects to modernize the agricultural sector with irrigation and industrial and technological advancement (Nandy, 2001).

Zachariah explains that for the Nehruvian nationalists, the civilizational success of postcolonial India lay not in eschewing scientism or technological solutions to backwardness, poverty and hunger but in seeing it as integral to the Indian culture. The scientific project was to develop “a modern India whose modernity is her own, not plagiarized” (Zachariah, 2012). Yet, India adopted the format of integrated river management through multipurpose projects on the lines of the Tennessee Valley Authority (TVA) in the USA to fulfill the food and energy needs of growing populations. Nandy writes that the Constituent Assembly debate over the passing of the Damodar Valley Corporation Bill was carried out under the “imposing psychological presence of the Tennessee Valley scheme” (Nandy, 2001). In his political analysis of the career of engineer turned environmentalist Kapil Bhattacharjee, who spoke against the Damodar Valley Corporation, Nandy states that the progressivist ideology of nationalist actors, both politicians and scientists, legitimized the building of large dams with the use of modern science. Doubt, even if supported by evidence of the performance of dams, was labeled “obscurantist and romantic” (ibid).

This model of modernization was underpinned by state investments in water related infrastructure. Between 1951 and 1982, India accounted for more dams than any other country after the USA, the USSR, China and Japan. The first five-year plan, focused on agriculture, irrigation and power sectors, made financial allocations for the four biggest projects, the Bhakra Nangal, the Hirakud, the Damodar and the Nagarjuna Sagar dams in Punjab, Orissa, West Bengal and Andhra Pradesh respectively. Ashis Nandy notes that from 1951 to 1979, approximately 15% of India's five-year plan outlays went towards the construction of dams and canals. He puts the figure at Rs. 200, 000 million. Most of this went to the western states of Gujarat and Maharashtra (ibid).

McCully states that the "TVA model", characterized as large-scale, state investment based, multi-purpose water management projects, was a conceptual and technological shift adopted by many nations irrespective of their political ideology (McCully, 1998). Dam projects have been associated with the ideologies of progressivism in the US, domination over nature by communist governments of USSR and China, decolonization and development in post-colonial countries, post war rebuilding and cold war politics. Thus dams have been called "the symbols of modernism, the 20th century ideology" (ibid).

2.2 Social and Environmental Impacts of Large Dams

As shown in the earlier section, large dams enjoyed global importance for their uses to modernizing and developing countries. However, the environmental and social impacts of large dams caught up with them making them unpopular by the turn of the millennium. The global debates on large dams has brought to fore not only the benefits of large dams but the tremendous impacts it has caused on river ecologies and socio-economic and cultural lives of communities that depend on rivers, fisheries and forests. Although there were numerous impacts caused by the projects in the US and Europe, such as the loss of fish species and the drying up of downstream areas, the colossal human impacts of dams in the form of displacement and poor rehabilitation in countries such as India and China formed the major critique against dams by the 1980s (Gujja & Perrin, 1999). The World Commission on Dams (WCD), an independent set up to review the development effectiveness of large dams, develop

internationally acceptable criteria for planning and execution of dams and assess alternatives to meet energy and development needs, estimates that 40-80 million people worldwide were displaced by dams (WCD, 2000). China's displacement figures for the period 1950-1989 is 10.2 million and an additional 1.2 million displaced solely by the Three Gorges Dam (McCully, 1998).

In 1954, Jawaharlal Nehru, the then Prime Minister of India, famously described dams as the “temples of modern India” (Gopal, 1980, 1984). When he visited the Hirakud dam site in Odisha in November 1957, he told the people affected by the dam: “if you are to suffer, you should suffer in the interest of the country” (Roy, 1999). And suffer they did. Nandy's work in explaining the first forms of dissent in post colonial India in the context of the DVC projects shows that the government was successful in displacing up to 96% of the “target population” to make the project possible. (Nandy, 2001) In November of the following year, Nehru did a surprise about-turn when, in a speech entitled *Social Aspects of Small and Big Projects* addressed to an audience of water and irrigation experts, he called large dams a symptom of the “disease of gigantism,” and suggested that it was “the small irrigation projects, the small industries and the small plants for electric power which will change the face of the country, far more than a dozen big projects in half a dozen places.” (D'Souza, 2008; Guha, 2005). Guha explains that it was the evidence of suffering of the ‘victims’ of development caused by the commissioned dams that changed his mind about large dams and shook his faith in the idea of large scale technological development for progress. Nehru's change of outlook did not alter the course of events. The sluice gates, as it were, had been opened. By then, the blueprint for several dams had been finalized and they continued to be built. Since then, India has been a major dam builder with over 5300 dams already built according to official records (CWC, 2019). There were less than 300 large dams in the country in 1947. By 2000, this figure crossed 4800 with more than half of them built between 1971 and 1989 (Anon, 2013a)

The number of people displaced by dams in India is stated to be 16-38 million (McCully, 2001; Roy, 1999; WCD, 2000). This forms almost 75-80% of India's figures for displacement (Patwardhan, n.d.). D'Souza writes that the displacement levels were so alarming by the 1980s that the Second Citizen's Report on the

environment released in 1985 by the Centre for Science and Environment was “dedicated to the dam-displaced people in India.” (D’Souza, 2008) Tribal communities constitute the largest group of people that have faced displacement or have been made ‘internal refugees’ as some scholars prefer to describe them (Nandy, 2001). Government statistics state that these projects displaced 20 to 50 million people of whom nearly 40% are tribal communities that form only 8% of India’s total population (Ministry of Tribal Affairs, 2014). In the case of the Sardar Sarovar Project (SSP), the dam that engendered the most iconic and well-known resistance, the official figures of dam-induced displacement is 32,542 families (Narmada Control Authority, n.d.). The Narmada Bachao Andolan (NBA) or ‘Save the Narmada’ movement made up of those in opposition to the project stated the figures at 40,000 families or two lakh people (NBA, 2017).

By the decade of the 1980s, a wave of social movements posed a challenge to large dam projects by highlighting the violation of human rights and environmental destruction. By 1983, the veteran social worker Muralidhar ‘Baba’ Amte wrote to Prime Minister Indira Gandhi to abort two proposed dams in central India, the Inchampalli dam on the Godavari River and the Bhopalpatnam dam on the Indravati River, that between them would have submerged 200, 000 acres of dense forest and displaced 40, 000 *adivasis*. His mobilization resulted in thousands of tribals marching to the local District Collector's office with their demand (Anon, n.d.).

The biggest anti-dam movement unfolded a few years later when social activist Medha Patkar mobilized thousands of people whose homes and lands were in danger of being submerged because of the Sardar Sarovar Project (SSP) on the river Narmada. Conceived in 1946, the SSP was the first of the 30 large, 135 medium and 3000 small dams proposed “to bring drinking water to Kachchh and other drought prone regions of Gujarat, and to irrigate a vast area of the state as well as two districts of Rajasthan” (Cullet, 2007). Initially, the struggle was to secure proper rehabilitation and resettlement of the 100,000 people estimated to live in the 37,000 ha of land spread over the three states of Gujarat, Maharashtra and Madhya Pradesh that lay within the submergence zone of the project. But as the project construction began without compliance to the legal conditions of approval for rehabilitation and environmental safeguards, the movement questioned the dam itself and the form of

destructive development it had come to symbolize (TISS, 2008). The NBA was perhaps the first anti-dam movement that brought together activists, professionals, journalists and academics who launched a comprehensive critique of development for which large dams had become an emotive signifier (Baviskar, 1995a). Since these major anti dam movements in India, dams have been central to the debates on development for over forty years.

Even as displacement levels rose, concerns around rehabilitation of project affected people remained unresolved. It has also been acknowledged that most pre-1980 projects including dams did not have a clear-cut resettlement plan and the resettlement process was decided on a case-to-case basis. McCully writes that of the 192 World Bank funded projects reviewed in 1994, only 15% had complied with the resettlement policy (McCully, 1998). D'Souza has pointed out that India's official policy on resettlement and rehabilitation included the right to land only after the resistance to the Sardar Sarovar Project (D'Souza, 2008). As a result of the profound human suffering caused to large numbers of people by large dams and the resulting social mobilization, public opinion around large dam projects became intensely polarized in India and the world. By the 1970s, global human rights and environment movements had emerged and large coalitions of dam opponents and international advocacy groups such as the International Rivers Network (IRN) put up sustained critiques against large dams in the following two decades (Khagram, 2004). The persistent campaigns on the questions of displacement and rehabilitation led the World Bank to withdraw their funding from projects such as the SSP in India in 1993 and Arun III in Nepal in 1995 (R. R. Iyer, 2001; McCully, 2001). Between 1992 and 2002, the World Bank's total investments in dams dropped by 90% (van Ginneken, 2015).

The techno-environmental premise of large dam construction is that nature or flowing rivers need to be harnessed through impoundment, diversion and channelization for human progress. At least 400,000 square kilometers – more than the combined area of the Indian states of Uttar Pradesh, Haryana and Punjab – have been inundated by reservoirs worldwide (McCully, 2001). The alteration of the flow of water for the operation of dams results in ecological changes that have overarching and often unpredictable effects on the landscapes and their human and non-human communities.

The impoundments flood large areas and permanently fragment landscapes. Forests have been submerged on a large scale within these reservoirs (Goldsmith & Hildyard, 1984). The authors state that between 1950 and 1975, 4,79,000 ha of forests were lost to river valley projects. In the projects of the 1930s in the US, the early signs of environmental impacts were on fisheries due to large impoundments and diversions. The “stilling of flowing water” supports only few species of fish while those that require the ebb and flow patterns of rivers die out (McCully, 2001). WWF’s study states that out of the 8000 species of freshwater fish, 20% are near extinction because of alterations in river hydrology (Gujja & Perrin, 1999).

The WCD estimates that dams, inter basin transfers and withdrawals for irrigation have fragmented 60% of the world’s river basins (McCully, 2001). In tropical regions, where most rivers are not perennial or uniformly fed by rainfall, large reservoirs, diversions and inter basin transfers have resulted in lower areas turning dry, and resulting in less water in the entire basin (Chatterjee, 2010). These have led to pernicious water conflicts between upstream and downstream regions in different parts of the world (Scott Moore, Rodell et al, 2018). Large dam projects are undertaken by governments to irrigate lands in arid areas for farming. India and China, which have the largest irrigated areas, depend on dams for up to 30-35% of water (WCD, 2000). Irrigation dams and canals have also caused water logging in areas around the reservoir and in these newly irrigated areas as excess water is neither absorbed by the plants nor evaporated from the soil. This results in the retention of salts in the soil turning them saline and making them unfit for agriculture. This is a problem in nearly a fifth of the global irrigated area (ibid). As a result irrigation dams are considered a wasteful reallocation of freshwater. Even with hydropower dams, the net loss of freshwater is significant. A 2011 study published by UNESCO studied 35 dam projects with a total capacity of 73 gigawatt approximately (equal to about 35 dams the size of the Hoover Dam). These dam reservoirs had an evaporation rate that made up for 10 per cent of the total evaporation from global water resources both surface water and ground water (Hoekstra, Chapagain, Aldaya, & Mekonnen, 2011). The authors conclude that hydropower dams are large water consumers, which could have been allocated to alternative uses.

Dams built for flood control end up trapping monsoonal floodwaters behind reservoirs up to dangerous levels resulting in sudden floods. Natural and predictable cycles of flooding are turned into catastrophic, unpredictable disasters (D'Souza, 1998). Trapped in the reservoir are silt and other nutrients valuable for the soils of the flood plains. Dams meant to control floods have resulted in making downstream areas vulnerable to poor soils and sudden calamities. Research suggests that flood plain management would be a far more creative and cost effective approach, which involves 'making room' for floods to come when they do, nourish the soils and recede (McCully, 2001).

India has over 200 hydropower dams with 27 of these generating over 500 MW each. The largest operational hydropower station is Nathpa Jhakri dam on the Sutlej river in Himachal Pradesh. It is designed as a 1500 MW plant. 38 hydropower dams are under construction, according to the latest government records (Singh, 2018). Hydroelectric stations are celebrated for their long economic lives, with some plants still in service after 50–100 years. However in the case of tropical dams especially in regions like the young Himalayan mountains, dams could be hampered by the heavy sediment load that rivers carry. Major engineering works in the fragile mountains, extremely intense rainfall and high seismicity can challenge dam construction and operations. In water governance analyst Jayanta Bandyopadhyay's words, one cannot blame nature for engineering failures (Chatterjee, 2010). Bandyopadhyay emphasizes that the complex hydroecology of the Himalayan river systems pose a great challenge to river development projects, as there are 'great knowledge gaps'. Due to the risks involved in building projects in such geologically fragile areas, the gains from low operating costs may not be true for these projects (ibid).

Despite these impacts large dams have acquired renewed legitimacy in the era of climate change. Climate change discourses and policies have seemingly prioritized the global challenge of reducing the carbon emissions over preventing or solving local environmental priorities. Hydroelectric dams are considered a clean source of energy since they can generate power without burning fossil fuels. While some carbon dioxide is produced during the construction of projects, this is a small amount compared to the emissions of equivalent fossil-fuel electricity generating projects like coal fired plants (Briscoe, 2010). A study commissioned by the European

Commission concluded that hydropower produces the least amount of greenhouse gases compared to any other energy source. However this study only considered temperate climate zones. Climate studies have challenged this clean image of dams. In tropical zones, large reservoirs tend to release significant amounts of methane, a potent green house gas (GHG), into the atmosphere, and hence large dams in the tropics might not be so clean (Wehrli, 2011). The analysis of the extent of GHG emissions due to multiple factors such as the size and depth of the reservoirs, the nature of the area flooded by the reservoir, the flow of the water and many others is relatively new science. But it is agreed that GHG emissions are higher in tropical and shallow dams (McCully, 2001).

Climate change related policies have induced governments to look to renewable sources of power. Hydropower has been seen as a renewable source of power as it depends on water flows. However, this claim is contested by scholars who state that climate change has already affected the global water cycles and rendered the available hydrological data quite insufficient to predict new flows. Unprecedented changes in rainfall patterns, glacial melt and evaporation due to global warming all make reservoirs and returns on investment unpredictable (McCully, 2001). McCully writes that most countries that depend on hydropower for more than 70% of their electricity are in the developing world and they suffer “crippling drought induced power cuts”.

Thayer Scudder, a renowned expert on dams found that, in most cases, large dams were “part of a flawed paradigm that causes an increasing disconnection between the necessary environmental health of river basins and the current needs of people and governments for the provision of water, energy, and food” (Scudder, 2006). In a recent article in *The New York Times*, Scudder, who for the good part of his career believed that large dams, if built and managed properly would outweigh social and environmental costs, concluded that large dams not only are not worth their cost, but that many currently under construction “will have disastrous environmental and socio-economic consequences” (Leslie, 2014). Bandyopadhyay states that as the scientific basis for the economic assessment of dams has changed, they are rendered ‘economically useless’. His research also draws attention to the fact that even the US is now decommissioning dams at a rate that exceeds its rate of building, while countries like India and China exhibit ‘hydrological obscurantism’ by continuing to

plan and execute large basin transfers and impoundments (Bandyopadhyay, 2012). Based on an STS approach to the study of dams, Baghel concludes that the large dam technology that may have suited the temperate regions has been imposed on the tropics at a huge cost to ecological and social factors. He refers to the presence of the large dam in South Asia as an anachronism or 'out of place' (Baghel, 2014).

Many anti dam activists and water policy experts have worked on alternative forms of water and energy management (A. Mishra, 1993, 1995; Sebastian, 2001). They state that small and localized forms of water management for food and energy are more effective and resilient in the face of floods and droughts. The WCD report also emphasizes that countries should adopt forms of water management that are equitable, do not leave a trail of environmental devastation and deliver developmental outcomes.

2.3 Elusive Benefits and Systemic Unviability of Dams

If there is one concept that captured the nub of the fractious debate on dams and development, it is the problematic idea of cost-benefit analysis (CBA). Economic models devised to assess the viability of expensive large-scale development projects such as hydropower dams often utilize the concept of public good. A public good is defined as a good that is, in economic parlance, non-rivalrous and non-excludable. Dams, if we go by the conventional cost-benefit formula, fit this description on the claim that they add to the available pool of energy, thereby reducing the price of power for all. In addition, farmers living downstream of a dam also benefit from better irrigation and flood control, which lead to greater food production. These benefits are non-rivalrous, as one person's benefit of having fewer floods does not reduce another person's benefit; and non-excludable, as no one in the downstream vicinity is excluded from benefitting from the dam. Due to the expense and risk involved in building a dam, the state often takes the responsibility of investment. However, unlike unambiguous public goods such as parks and schools, large dams also come with significant environmental and social costs. Costs, in the form of impacts, are rivalrous. Historically, many dam projects were evaluated based only on projected economic benefits and the direct cost of dam construction, ignoring the wide range of potential losses in environmental degradation, cultural destruction and

displacement of affected peoples. When one factors in these negative ‘externalities’, it is not possible to conclude that dams are net positive.

In addition, dams and other large infrastructure projects hardly perform as expected. They are prone to cost overruns and delays, which can turn an initially net-positive project into net-negative by the time of completion. Large dams have been plagued by technical inefficiency and by the tension between productivity and costs. Cost overruns of an average of up to 56 % have been demonstrated by over 80 projects studied by the WCD. In the case of South Asia it is over 100%. A more recent study reveals that three out of every four dam projects suffer from cost overruns (Ansar et al., 2014). The study provides empirical data to show that forecasting errors have remained through time, region and type of dam project. Taken together, large dams fit into what Flyvbjerg calls the Iron Law of Megaprojects- “over budget, over time, over and over again” (Flyvbjerg, 2014). A study done by Pande and Duflo shows that dams are only a marginally cost effective investment. While they may have some distributional gains, in aggregate they have not increased agriculture but increased poverty in the locations where they are built (Duflo & Pande, 2005). McCully points to two critical studies of agriculture and irrigation that estimate the contribution of dams to India’s food production as between 10 and 13%. Despite this, agriculture budgets in India mostly go towards the building of dams and canals. McCully adds that even though half the world’s dams are for irrigation, the increase in food production by dam-irrigated waters is only up to 12-16 percent (McCully, 2001). According to a November 2012 study by the South Asia Network of Dams, Rivers and People (SANDRP), 89 per cent of large hydropower projects in India are generating below the designed or promised levels (Thakkar, 2015). According to Thakkar, even though dams are “clearly a case of diminishing returns”, India's water management is “dominated by large dams” and the water bureaucracy pushes for more and more large dams without any evidence of their credible performance. A recent review of the political economy of large dams shows that states dependent on hydropower have higher levels of corruption than petro states of the Middle East (Sovacool & Walter, 2019). The author who reported this review in her article titled “No More Hoover Dams” suggests that hydroelectric potential may be seen as a “resource curse” as they show high correlation with debt, poverty and threats to energy security (Brooker, 2019).

The above studies provide supporting evidence for the observation that the scientific calculation of costs and benefits for large investments like dams suffer from a range of biases as they are undertaken with an ‘inside view’ of the project rather than a focus on outcomes (Ansar et al., 2014). These are arguably compounded by an ‘optimism bias’ where costs are undercounted and benefits are overestimated. In the World Bank’s hydropower manager for Africa, van Ginneken’s words, hydropower has been built mostly with “cheap public money” to keep generation costs low (van Ginneken, 2015). This has not only resulted in inefficient projects being built but more efficient options from being ignored (Flyvbjerg, 2014). However, for the proponents of large dams, viable projects could be selected on the basis of an objective assessment of costs and benefits. In India, in the colonial period, the rate of return on investments for irrigation projects by companies varied from 4-6 % after meeting costs of maintenance and interest charges. It was in 1936, that the Central Board of Irrigation advocated a benefit-cost ratio by including indirect returns. B. G. Verghese states that the Gadgil Committee of 1958 reviewed established irrigation projects and recommended a number of indirect benefits such as employment, double cropping, industrial processing, and trade and transport. The return was now taken as the difference between the value of agricultural production and costs on capital and depreciation and other items. The recommendation of this Committee was to adopt the economic benefit criterion and not just financial. The suggested requirement for projects to be approved was 1.5:1 and 1:1 only for projects in tribal areas. However this was hardly possible due to the lack of baseline data and valuation problems. In the absence of any benchmarks, the subsequent Desai Committee concluded that cost-benefit analysis of irrigation projects could rank the order of desirable projects and outcomes and every approved project could cover the lowest expected returns. (Verghese, 2007)

Shripad Dharmadhikary, in his recent controversial study, *Unravelling Bhakra: Assessing the Temple of Resurgent India*, reassessed the costs and benefits of India’s most celebrated dam, the Bhakra Nangal dam project (Dharmadhikary, 2005). This project, which became operational in 1963, created a vast network of dams, reservoirs, powerhouses, and a massive canal network that was intended not only to generate much-needed power but also transfer waters to far-flung and arid areas like the

Thar Desert in Rajasthan for the purposes of drinking water and irrigation. Dharmadhikary argues that the building of the dam was guided more by political compulsions and engineering hubris than by scientific reasoning. His research suggests that the cost-benefit analysis of the dam was flawed as it exaggerated the benefits while downplaying the costs. According to the report, the Bhakra project was originally conceived to improve undivided, pre-Partition Punjab's bargaining power over Sind with respect to the sharing of the waters of the Sutlej and the Beas. The report links the Bhakra project to the Second Five-Year Plan (1956-61), which marked a shift away from a decentralized approach to one that concentrated on large-scale projects. The focus was to increase agricultural production and to do this the planners concentrated on intensive methods by which higher surpluses could be procured for the market. The report argues that the other options available to planners at that point, and which were unreasonably overlooked, were decentralized rainwater harvesting and watershed management, soil conservation and groundwater recharge programmes.

In a nutshell, Dharmadhikary's study concludes that the project was not win-win but win-lose. Dharmadhikary says he undertook this study because "whenever we question large dams, the issue of Bhakra's contribution to food production in Punjab and Haryana is always brought up. Bhakra has become a symbol of the development planning debate in India and so we thought it was important to study its benefits." The water establishment and dam engineers vehemently contested Dharmadhikary's findings on the benefits from Bhakra and came out with their own critique of Dharmadhikary's assessment using different cost-benefit models. R. Rangachari, who had worked with irrigation department and the water resources ministry, criticized Dharmadhikary's report as biased and argued the alleged shortcomings of the dam had more to do with mal-governance than with the design of the project itself. He writes,

"The Bhakra Project is responsible for ensuring timely irrigation to the command to the extent assured in the Project report. The Agriculture department handles irrigated agriculture and ensures the necessary inputs (other than water), marketing, minimum support prices, etc. The government and the legislative bodies are responsible for laying down policies relating to irrigation, agriculture, marketing, food distribution and so on. If this is understood, then the Project can in no way be blamed for the

omnibus issues raised here. The project authorities could not have prevented them without stepping beyond the function assigned to their organization” (Rangachari, 2005a).

Journalist and writer B. G. Verghese’s “Waters of Hope” started as a newspaper article written in 1970 after he witnessed the effects of the drought all over eastern India of 1966-67 and yet the areas in the Kosi command were spared of the effects of the drought. His position on large dams flowed from his view that economic growth is essential to nation building, and that it is the duty of the state to ensure that every citizen enjoys the fruits of development. He claimed that the quality of human life could be enhanced through the redemptive powers of reason, science and technology. Not surprising therefore that he viewed water as a resource that should be tapped rationally and scientifically for the overall progress and development of a nation. He was also convinced that large dams are an indispensable part of what he calls integrated water management. Given the rising demands of food, water and power of a large population, uneven distribution of water resources, and worsening water quality, he viewed it important to conserve water at all times and places through a bouquet of means and practices (Verghese, 2007). He wrote, “the notion that rainwater harvesting, groundwater recharge and sound water management by themselves can provide a complete or sufficient answer to India's water needs is mistaken. Pursued as a panacea that obviates the need for large dams, it could rob the country of vital insurance against disaster.” For him, dams are not a panacea for all economic ills. But to celebrate the small as beautiful and condemn the large as pernicious is not only erroneous but also dangerous. “The two go together. What would northwest India, indeed all of India, be minus the Bhakra-Pong?” (Verghese, 2000) Even as he supports big dams, he acknowledges their negative social and ecological costs. Nevertheless, he is averse to the view that local communities should have an inviolable right over their lands. For him, communities displaced by large development projects like dams have legitimate entitlements like any other citizen, and they should without doubt be resettled and rehabilitated with dignity. Furthermore, with regards to nature, he believes that science and technology can recreate what is lost in another place. According to him, “many so-called pristine forests in the European and Japanese Alps and Himalaya are actually regenerated forests and large dams, so readily condemned for submerging forests, by and large

create far more green cover than they destroy.” Verghese believes that once social and environmental costs are addressed with a sense of equity and justice, dams turn out to be win-win projects (Verghese, 2010).

Gail Omvedt’s views on large dams are not dissimilar from Verghese’s except that they flow from a different worldview in which the rights of poor communities—landless peasants, *dalits*, and tribals—are given the greatest importance. She criticizes anti-big dam movements like the NBA for not recognizing the crucial importance of irrigation in arid or drought-prone regions. She argues that prior to the NBA there were many organizations that engaged with large dams from the point of social justice and the sustainable use of water. But they never opposed dams as such. She says that in these early struggles the main slogan of the people was "first rehabilitation, then the dam". Later this was linked to "equal water distribution", the demand that irrigation projects should be restructured to provide water to every family in every village in a watershed area. She believes that large dams are essential for providing irrigation in rain-fed areas and argues in favour of the millions of people living in such areas who are forced to leave their homes in search of work in the cities. If they are provided water to irrigate their parched lands, they would prefer to stay back, just as those threatened with eviction by large projects would prefer to stay put (Omvedt, 1999). Omvedt’s views do not account for the impacts of irrigation on soils in the form of water logging and salinity.

In a controversial article titled The Greater Common Good on the Sardar Sarovar dam published in the Outlook magazine, Arundhati Roy likened large dams to nuclear bombs. “Big Dams,” she wrote, “are to a Nation's 'Development' what Nuclear Bombs are to its Military Arsenal. They're both weapons of mass destruction. They're both weapons Governments use to control their own people” (Roy, 1999). Roy’s provocative article, which lampooned and lambasted development as it had been conceived by the Indian state, evoked strong reactions. But most saliently she was labeled as anti-development, just as she was labeled anti-national after her denunciation of India’s second nuclear explosion. In her attack on large dams, she marshaled a wide arsenal of arguments, from ecological to scientific to economic to cultural, to drive her point home. In an interview in which she defended her views, Roy said,

It isn't as if people who question this form of development are people who are saying we don't need new electricity; or that we don't want irrigation, only that there are better and more democratic means of achieving it. And truly the fact is if you just take the existing infrastructure, the existing dams, the existing transmitters, just maintaining them would probably double the amount of electricity that's generated. But refusing to even consider an alternative because nobody that you know personally is paying the price—it's always someone else—as long as that remains, there will never be the will to look for an alternative (Armstrong, 2000).

Broadly, by drawing attention to the abject misery of 50 million people who had been displaced, dispossessed, and culturally broken by large dams since independence, she was mocking the much bandied-about ideas of justice, equality and democracy as enshrined in the Indian Constitution. She buttressed her claims and arguments by challenging the very technocratic idea of cost-benefit analysis, which has its philosophical roots in the Benthamite idea of the Greater Common Good.

Beginning the late 1970s, studies by some activist scientists and engineers began to question the validity of cost-benefit estimates for large dams. Even though many in the NBA believed the cost-benefit analysis method to be fundamentally flawed, the NBA deployed it effectively in its critique of Sardar Sarovar Project (SSP) to seek legitimacy for its claims, question official figures, and persuade the government to improve their terms for rehabilitation through public scrutiny. The World Bank's 1991 review of the irrigation sector highlighted that it is "common practice when bureaucrats proposed water projects in India to ensure project acceptance by inflating benefits and underestimating costs" (World Bank, 1991). Not surprisingly, the NBA took with a fistful of salt the many reappraisals of the SSP offered by the government and the World Bank.

In his popular manifesto, McCully, a leading figure in the anti-dam movement, documents the tremendous hidden costs that dams have imposed on society, and faults the troika of development agencies (particularly the World Bank), governments, and dam construction companies for massive human suffering, irreversible ecological damage, and impending environmental disaster. He contends that the benefits of dams

could often have been produced by other less destructive and more equitable means. As Campaign Director of the IRN in 1994, McCully led the demand for the World Bank to conduct an assessment of all its funded projects from the mid 1980s to mark 50 years of its existence. This review justified the funding to 74% of the projects. However, a leaked copy of the study showed that the bank had exaggerated the benefits from these projects (McCully, 2001). It was not until 1997 that the Bank and dam builders agreed to an independent assessment of large dams undertaken by a joint Commission comprising representatives from all sides of the debate. The conclusions of the World Commission on Dams (WCD) are a great indictment of dam planners and builders. Their research, that involved “eight participatory studies of specific projects, two country studies of India and China, seventeen thematic reviews and audits of 125 dams”, was highly critical of the outcomes of these large projects (ibid). The authors found that many large dams have not delivered their expected technical, financial and economic benefits and had imposed significant social and environmental impacts. These adverse effects have been disproportionately borne by the poorest and most vulnerable communities.

As resistance against large dams evolved into a sustained critique of mainstream development and promoted alternatives, the concept of cost-benefit analysis became the most effective weapon to launch a scientific, economic, philosophical, and ethical indictment of large dams and by extension, the received wisdom of development of which the former were a most potent totem. According to Ramaswamy Iyer, the vocabulary of the cost-benefit analysis can confuse the real issues as it masks the position of affected communities as unwilling victims of development (R. R. Iyer, 2003). It assumes commensurability between the costs and benefits of dams. In one of the earliest scholarly critiques of the cost-benefit format as applied to large dams in India, Satyajit Singh observed that that cost-benefit ratio (CBR) was nothing but a conjurer’s trick (Singh, 1997). Dwivedi has observed that costs are made to appear far less significant than the benefits (Dwivedi, 2006). The history of cost benefit analysis in large dam projects clearly demonstrates that it is not value neutral. The dam project authorities value optimal risks, such as raising the height of the dam that in theory would maximize the gains, whereas for dam opponents, environmental values and welfare of the oustees is paramount. This leads D’Souza to refer to this technical tool of planning as a method of ‘political arithmetic’ (D’Souza, 2008).

2.4 Technical Objects and Political Projects

“A technological project is not an act of innocence”, warns Shiv Visvanathan, a social scientist who has written extensively on the cultures of knowledge, the sociology of science, technology and democracy (Visvanathan, 2006). Numerous scholars have explained developmentalism as a systematic set of discursive and material interventions by the West to transform newly decolonized societies in Asia, Africa and the Americas, after the Second World War (Escobar, 1995; W. Sachs, 2010; Sanyal, 2007). The stated objectives of these interventions were to tackle traditional agriculture and low levels of economic growth (Rostow, 1960) institutional instability (Huntington, 1987) and exclusion (Boserup, 1970) all held as the signs of “underdevelopment”. The justification for these interventions was uncannily similar to the civilizing missions and colonial endeavours in the eighteenth and nineteenth centuries that sought to bring “backward” peoples into enlightenment and progress (Cowen & Shenton, 1996). Throughout its post war history, developmentalism has remained linked to the ideas of modernity, reason and progress that had made possible the industrial and scientific revolutions in Europe.

But the outcomes of this development project, critics say, have failed. (J. D. Sachs, 1989; Scott, 1998) Through the second half of the 20th century as more and more nations declared independence from their colonizers and more so after two or three decades of national state led growth, the follies of the development mantra were mounting. Development economists critiqued state-led development. But these expert critiques largely remained confined to “performance oriented cost- benefit reflections” without addressing the political choice inherent in the selection of such an instrument for social change (Werner, 2014). Alongside these trends, the developmental state was fast losing legitimacy and being criticized on the grounds of excluding large sections of the poor, women and indigenous communities (George, 1997; Hancock, 1997; Simmons, 1997). As Chatterjee writes in his foreword to Kalyan Sanyal’s book on postcolonial capitalism, the “management of poverty” was to be an integral part of the “management of growth” (Sanyal, 2007). Mainstream development policies acquired new names as they tried to accommodate these critiques and embraced poverty, human rights, gender and sustainability concerns (Asher, 2009; Crush, 1995; Nederveen Pieterse, 1998) Alternatives to development

were also being sought by “redefining the goals of development” to include ideas of freedom and expanding human capacity (Nederveen Pieterse, 1998; Sen, 1999). Nederveen Pieterse observes, these efforts to create or discover alternatives have since paved the way for the International Monetary Fund (IMF) style neoliberal development that is focused on economic growth through privatization and deregulation (Nederveen Pieterse, 1998).

If indeed mainstream alternative development or “MAD” has ‘stirred in’ its critique, what is the experience of and response to this altered form of development that encapsulates privatization, deregulation and participation in regions hitherto ignored and marginalized? How are dams discursively shown as development when there already exist mounting evidence of the social and ecological consequences of large dams around the world? How are they responded to by ethnic minorities who may be affected by these projects but who also aspire to improve the socio-economic experiences of their families and communities? My thesis investigates these questions by examining the politicization of large dams in the border region of Northeast India. In the year 2000, the central government proposed to build over 150 large hydroelectric dam projects in Northeast India, and many were to be located in the mountain state of Arunachal Pradesh (Government of India, 2001). These projects were the largest dams to be built in India and were expected to generate over 50,000 MW of power by 2020. The execution of these projects, claimed the Government of India and state government of Arunachal Pradesh, would turn the northeastern corner of the nation into the country’s “power hub”. These projects, eulogized in official documents as clean, cheap and renewable, promised to transform the region’s fluvial environment into opportunities for development (Ministry of Development of North Eastern Region & North Eastern Council, 2008). The central and state governments presented hydropower development as a way to relieve the region of its economic backwardness and geographical isolation (ibid).

I locate my analysis within the vast scholarly literature on large dams and development that show that irrespective of their developmental goals, dams are also a tool to fulfill political agendas of their time. The planning and implementation of dam projects cannot be understood by remaining focused on the intended and planned objectives of developmentalism for modernization and economic growth. By

analyzing the debates on large dams in Northeast India from 2000, I provide conceptual and theoretical understanding of the politicization of large dams in this region. With regard to the hydroelectric dams on India's northeastern border, I would argue, that the outcomes of these projects cannot be understood as being simply the forced effects of a dominant developmental discourse but as those that carry the substantial imprint of a range of staggered, stubborn and dogged political negotiations on the ground. A range of outcomes is therefore evident not only in the stalled or failed projects and, more so, in the much changed and inflected dam building processes.

I suggest that the politicization of development cannot be seen as a strategy adopted only by the state to make large-scale projects implementable in the name of modernity, national development and economic progress. My thesis shows that the state has no monopoly over the politicization of development, and that development projects are also politicized by the reflexivity and collective agency of non-state actors. Owing to the intense and long public debates on the subject of large dams and development, it seems theoretically indefensible to view mobilized local communities whose lives these projects will influence merely as "victims" or without collective agency. More importantly, such agency is not necessarily antagonistic to the state or ideas of development. Baviskar makes this point most insightfully and forcefully in her work on the *adivasi* communities who faced displacement due to the Sardar Sarovar Project (Baviskar, 1995a). Baviskar shows that the simplistic resistance narrative accorded to them by the social movement against the project cannot explain the complex politics engaged in by these communities. McDuire-Ra points to this in his research on understanding the local support for dams in the Sikkim Himalaya (McDuire-Ra, 2011). The debates I analyze on the hydropower dams proposed to be built in Arunachal Pradesh also show that collective agency of ethnic minority communities is not exercised based on a predetermined orientation to development. In fact, by paying careful attention to the complex negotiations on development, it is possible to view these political deliberations as generative of outcomes that do not easily fit within the binary responses of acceptance or rejection of development.

This understanding of the politicization of development shows the difficulty in extending the epistemological critiques of development as anti-politics (Ferguson,

1990), cognitive control (Escobar, 1995) and governmentality (Foucault, 1991). Post-development theory argues that development cannot rescue us from oppression as it is deliberately designed to effect social regulation and bureaucratic control through a hegemonic state. It views development as a form of technical, western, colonial knowledge that retains categories such as “under-developed” and “backward” and marks out “spaces of deficit” for domination and to allow acting in the name of others (Nandy, 1997; Shiva, 1997). Post development theory views an antagonistic relationship between the developmentalist state and its ethnic minorities with the understanding that development steals identity by imposing its universalistic worldview. This view denies the possibility of reflexive development as a mode of social action by different agents. I apply Nederveen Pieterse’s notion of reflexive development (Nederveen Pieterse, 1998) to understand the critiques of dams and development in Northeast India. Such critiques, understood as practices of political negotiation, help to bridge the theoretical distance between mainstream development, alternatives to development and post development theories.

An analysis of the local responses to some of the largest infrastructural investments without using the predetermined positions of “advocates” and “opponents” of development offers the opportunity to understand how development is politicized not only from the top but also from the ground. My thesis engages with arguments put forth by participants in the government’s consent processes for the proposed dams. The local participants engaged in the consent processes practiced deliberative methods to negotiate for locally relevant outcomes as well as generate alternatives. This zone of deliberative politics is rich in possibilities to shape meaningful developmental outcomes. It is neither an obstacle to development as viewed by neoliberal governments or a sign of cooption or government control as understood by postdevelopmentalists. Moore uses the term ‘crucible’ to describe such meetings between state interventions and micropolitics. He states that these contingent encounters call for a critical anthropology of development that challenges the ‘discursive determinism’ accorded to it by economic theories of development and post development (Donald Moore, 1999). If officially accepted in policy, politicization through deliberative forums can generate socially useful and democratic decisions on development.

2.5 Conclusion

In this chapter, I outline the main themes of the global debates on large dams and development through a literature review of scholarly works on large dams. Large dam projects have been critiqued using the lens of developmentalism and modernity, ecological and social impacts and performance, efficiency and economic returns. The discourses and perspectives in these critiques show that large infrastructures like dam projects are politicized by governments and by communities affected by them. The politicization of large dams within new energy, environmental and developmental contexts such as climate change has also contributed to reflexive changes in discourses, technologies and approaches to dams and development globally.

CHAPTER 3

LARGE DAMS AND FRONTIER DEVELOPMENT IN NORTHEAST INDIA

In the previous chapter I presented a literature review of the global debates and discourses on dams and development. I showed that through the 20th century, several governments have invested heavily in large dams in the name of modernity and development. In India, over 5300 large dams stand as symbols of post independence Nehruvian state developmentalism. Scholars and activists have criticized these high modernist projects for their social impacts, negative ecological effects and economic losses. Their writings specifically highlighted the effects that large dams had on the social and community life of ethnic minorities such as tribal communities (S. Kothari & Thakkar, 1998; Singh, 2003). As shown in the earlier chapter, the poor performance and high social, ecological and economic costs resulted in a fall in dam building rates around the world. The share of hydropower in India's power production fell significantly after the 1960s (Ministry of Power, 2016). The Indian government eschewed dams in favour of groundwater as the alternate source of irrigation (Karambelkar, 2017). But in 2000, Northeast India, a border Himalayan region located between India and China was chosen for the siting of over 150 large dams for hydropower production. Almost a hundred of these were in the state of Arunachal Pradesh (Government of India, 2001).

Why and how did the Indian government expect to locate contentious dam projects in Northeast India? In this chapter, I analyze the reconfiguration of the Northeast region as the frontier of India's neoliberal energy and environmental policies. Using David Harvey's concept of "spatial fix" (Harvey, 2001) to explain the practices and effects of manipulating material and discursive boundaries, I show that this region has been reshaped for extractive, capitalist development through India's colonial and postcolonial periods. The metaphor of frontier is useful to understand the complex, contradictory, discontinuous and geographically dominated historical processes of state-making in the Northeast region. It is useful to highlight "the centrality of space and the politics of location" in colonial and postcolonial development (Teverson & Upstone, 2011).

In this chapter, I argue that the political consensus for large, centralized water regulation projects in Northeast India is a product of the postcolonial Indian state's policies of frontier exceptionalism (I. Abraham, 2014; McDuire-Ra, 2009a). The proposed hydropower dams enabled the central government to envisage the production of clean, cheap power for capitalist economic growth. More importantly, the small and fiscally weak state governments in this geopolitically sensitive, conflict zone between India and China willingly agreed to become a hydropower hub. The region's "cosmetic" state apparatus was faced with the challenge of solving the region's pervasive sense of marginality and economic underdevelopment. The state governments saw the large hydropower dams as a tool that could generate revenues and political legitimacy. I conclude that these interlinked factors generated political consensus between the central administration and the border states of Northeast India for a technology that was a proven failure globally.

The chapter is organized in four sections. In the first section I discuss the production of the Northeast region through the colonial politics of frontier exceptionalism. The region and its peoples were reorganized and administered as a resource frontier for the colonial capitalist extraction of nature based commodities. The second section elaborates the politics of securitization that marginalized the developmental possibilities of Northeast region. The militarization of the region in response to the internal and cross-border political challenges turned the region into a zone of conflict. In the third section, I explain how the Northeast region endured the tag of "backwardness" due to a contradictory politics of regional underdevelopment. This section outlines the nature of nationalized developmental planning in postcolonial India and the region's exceptional status within it. The fourth section discusses the emergence of Northeast India as a site of neoliberal hydropower development within these intersecting political economies of frontier development.

3.1 Politics of frontier Exceptionalism and the Production of 'Difference'

"..a region apart, dissimilar from the rest of the country in respect of its resource endowments and development potentialities juxtaposed with its utter poverty. "The economy of the region is traditional in its pristine form. Prof Rostow defined a traditional society as one whose structure is confined to limited production functions

based on pre-Newtonian science and technology. Such subsistence economies exhibit three main features: lack of specialization, lack of regular production of surplus with a view to sale and a stagnant technology. NEFA shows all these characteristics.” (National Council for Applied Economic Research, 1967)

From the 1790s, the British colonial empire was in the phase of mercantile expansion and turned its attention to the vast areas eastwards of Bengal. Colonial capitalism demanded that frontiers of empire be expanded and new spaces be brought into capitalist modes of production. From the colonial administration's capital in Calcutta, the eastern frontier looked like a vast, chaotic topography of water and forest (Cederlof, 2009; Sharma, 2011). It was a fluid landscape where earthquakes and floods transformed the cartographies of land and water. It was also a rich and fertile region because of the seasonal floods of the river Brahmaputra. The region already attracted labour from neighbouring areas for jute cultivation and was responsible for the emergence of Bengal as a global hub of raw cotton and silk (Cederlof, 2009, 2014). The promise of jute, tea, opium and minerals prompted the East India Company to march eastwards from Calcutta even though their scientific assessments of the region showed that it was a 'landscape out of human control' (ibid).

This region was forged with the rest of Imperial India in the 1820s when the British administration brought it under the Bengal Presidency. By 1824, the East India Company (EIC) had gone to war with the expanding Burmese kingdom to gain monopoly control over this region. In 1826, following the Treaty of Yandaboo after the Anglo-Burmese war, Assam, Manipur, Cachar and Jaintia moved from the Burmese into the hands of the British. Having seized control from competing interests from the East, the colonial government began to administer this region. This landscape of rivers and forests, the great Brahmaputra and the lofty Himalayan peaks was on the verge of unprecedented material and symbolical transformation (Cederlof, 2014; Ludden, 2012; Arupjyoti Saikia, 2011; J. Sharma, 2011).

Colonial capitalism reordered these new spaces to make them legible for administration and governance (Scott, 1998). The deltaic landscape of the Brahmaputra was surrounded by forested tracts that belonged to the several sovereign polities who maintained flexible boundaries through a combination of strategies of co-

operation and contest. According to Robb, there were few proto-states to be conquered and little sense of fixed property (Robb, 1997). The new colonial government engaged in demarcation of territory for military and communication purposes. These boundaries also defined administrative spaces for taxation and other fiscal regulations (Cederlof, 2009, 2014; Ludden, 2012)

The colonial administration was engaged in the production of natural resource based economies. For this, it introduced two economic interventions at a regional scale, namely, the commodity trade of tea and timber and the generation of fiscal revenue through taxation of land. The business in tea began with investments from the merchants from Calcutta with the Assam Company of London (J. Sharma, 2011). Lands in foothill areas under different forms of local uses were transferred to planters between 1830s to 1870s for tea plantations (Kikon, 2008a). In her scholarly work on the history of boundary formation of the Naga Hills, Kikon describes the takeover of swathes of land at the foothills for tea plantations and the establishment of barricades to restrict the movement of people into these enclosures (Kikon, 2008a, 2008b). The economic activities in this region required a large number of migrant labour. Both the colonial administration and the local landowners saw cheap labour from surrounding regions as a necessity to develop the region (Dasgupta, 2000). Sharma comments that the workers from neighbouring areas and the tea manufacturing industry was largely responsible for the creation of a multiethnic, modern Assam (J. Sharma, 2011).

Village areas and agricultural lands generated tax revenue for the colonial administration. Distinct territories were created out of village settlements and agricultural lands were separated from forests. Forest areas were valuable to the administration for their timber species. Forest enclaves were created for their monopoly use as timber resources by the administration. Forest villages were set up by the colonial administration within and around forest areas to work the forests. As forests became more valuable, they had to be protected from planters as well as new settlers who used forests for cultivating mustard and poppy. It became necessary to create a forest department within the colonial administration that was based in Bengal in 1863 (Arupjyoti Saikia, 2011). The government also curtailed forest use to stabilize the separation of land and water (ibid). Peasants were prevented from farming on forested hill slopes to protect river courses and downstream areas against

sedimentation (Nongbri, 2001; Arupjyoti Saikia, 2008). River courses had to be managed as navigable channels for the transportation of commodities produced in the region through the Chittagong port. The administration also regulated upland forest use such as shifting cultivation to prevent the flooding of downstream areas where flood plain agriculture and farming settlements was being expanded (Arupjyoti Saikia, 2011).

The valleys and foothills that were ruled by local chieftains and rajas came under the direct control of the British administration. The hilly tracts that were excluded from the administrative zones and areas important for revenue generation and collection were called 'backward tracts' and later 'excluded areas' (Baruah, 2003c). An administrative tool called "Inner Line" established by the colonial government separated the administered and excluded zones. These are military outposts and camps set up to demarcate the boundaries of the colonial government administered zones. The administration regulated the movement of people in and out of these zones. The Inner Line regulations govern mobility in the region even today. They define the internal geographies of state administration and are crucial to the experience of state space in these border areas. The Inner Line regulations disrupted the indigenous economic livelihoods and social networks in the region. It pushed communities into distinct enclosures that became the basis for the formation of ethnic territories in the postcolonial period (Kikon, 2008a). The regions outside the economic interest of the colonial government were allowed to continue customary practices of land and resource management. This marked the beginnings of a dual system of governance in this region (Cederlof, 2009).

The colonial spatial strategies of boundary making and administrative dualism shaped the identities of postcolonial states and peoples who inherited these boundaries (Pachau & van Schendel, 2016). The colonial British land grabs and the administrative restrictions on mobility of indigenous people were fiercely resisted. Colonial ethnography represented these indigenous communities protecting their lands as primitive savages. British administrators managing economically productive zones such as forests, tea estates, farm lands and markets recorded episodes of trespass, raiding of bazaars and labour colonies by hill communities and violent clashes between them. Once the Inner Line regulations of 1873 came into force, the

northeast hills and its hill communities became spatially and socially separated from the valleys of the region. The boundaries between hills and valleys, between administered zones and excluded areas exaggerated and deepened, to the extent of fictionalizing, the physical, social and ideological differences between those who inhabited these spaces. These socio-economic and spatial separations between the locals got rearranged along binary relationships of civilized and savage, modern and primitive. The imaginary constructions of “difference” embedded in discourses of culture have since governed the political, social and economic administration of this region.

These distinctions got further aggravated when the colonial government reorganized the territorial space between Bengal and Assam. The eastern region challenged the colonial government to the point that they considered and implemented a separation of the areas beyond the Meghna-Brahmaputra delta in order to be able to give its governance greater attention. At first, the government proposed to separate Assam and East Bengal from West Bengal in 1874. This did not appeal to the nationalists of Calcutta who petitioned strongly against this ‘partition of Bengal’ (Ludden, 2012). The Bengali nationalists went to great lengths to provide ‘evidence’ from Hindu scriptures for the racial, cultural and economic poverty of Assam and therefore a misfit with Bengal. Ludden’s work on the separation of Bengal shows that the Calcutta Bengalis were beneficiaries of the rural peripheral areas that supplied the much needed raw material and labour to the stupendous growth of industry in the city. Separating Bengal meant economic disaster for them and this formed the basis of their protest against the colonial partition of Bengal (ibid).

The Brahmaputra valley and the surrounding upland forest areas were separated from the economically productive land and industrial economies of colonial Bengal by the partition of Bengal under nationalist pressure in 1905 and the region’s administrative reorganization again in 1911 (ibid). Ludden calls the separation of Bengal from Assam and the Northeast region as the “the territorial politics of economic nationalism” (ibid). Sharma’s work explains that the further separation of Assam from the surrounding hill regions was through processes of caste gentrification of the Assamese speaking peoples (J. Sharma, 2011). Sharma locates the emergence of the Assamese public sphere in the context of the tea garden economy and it racialized

relationships with migrant labour, the educated Assamese gentry and the rise of vernacular print cultures in the region from the 19th century (ibid). From 1874, when the British set up a Chief Commissionerate to rule Assam, Bengali farmers were encouraged to settle in the Brahmaputra valley and till the lands. As people migrated into the valley region in large numbers and caused conflicts, the colonial government engaged in an incremental process of managing these community clashes through the 'line system' or the creation of zones where the migrant farmers could settle (Bhattacharya, 2012; Dasgupta, 2000). The production of the spatial order of colonial Assam through border making during this period by the British administration was influenced by prevalent nationalist views of unevenness of economy, race and culture in the region. Postcolonial studies of this region show that these histories of migrations and partitions have endured and are central to the recognition, adoption and rejection of identities today. The contours of what is today's Northeast India were set by these border formations.

As stated earlier, colonial state-making efforts in Assam deployed the discourses of an environmentally and culturally primitive frontier. In the foreword to Bernard Cohn's collection of essays, Ranajit Guha critiques this production of primitivity of colonial subjects. Guha states that the representation of frontier people as primitive was a necessary discursive strategy to represent the change effected by colonial rule (Cohn, 1987). It gave the colonial project the purpose of a "civilizing mission". The colonial classifications and enumeration exercises through censuses were not simply descriptive but constitutive. They reconstituted 'fuzzy communities' into rigidly defined 'tribes' (Kaviraj, 2010; Skaria, 1999). The British administrative officers posted in the region also produced detailed ethnographies of hill communities that had a lasting effect on the recognition of communities with distinct characteristics¹. Skaria observes that the autochthonous identities of these communities may have been the result of survival strategies in the context of colonial attitudes and policies or the consequence of administration of grants and benefits tied to census exercises carried out by colonial administrators and anthropologists (Skaria, 1999). These exercises tied communities into binary relationships of backward and advanced, and plotted them along one axis of historical time.

¹ The works of A. Playfair, J.H. Hutton and J. P.Mills on the Garo and Naga peoples are some examples of colonial state ethnography in the Northeast region.

The desire for the postcolonial national unity was realized by the continuation of the imperial structures. In Kothari's words, decolonization was a "reconfiguration rather than an epochal transformation" as the postcolonial state reproduced the spatiality of distance and difference (U. Kothari, 2006). Colonial classificatory logics were transposed from colonial to post colonial India. Postcolonial scholars like Ranajit Guha have pointed out to this "crisis of decolonization" (Cohn, 1987). As postcolonial and space theorists have established, notions of marginality and primitivity cannot be understood without examining spatial relations across different periods of globalization, colonialism being one of them. These ethnicizing divisions hold the modern Indian nation-state together. The theories of space and power are critical to understand the postcolonial state's active role in racializing and ethnicizing social life in the Northeast. Quoting Agemben, Itty Abraham describes the Northeast as a state of exception- "that extreme form of relation by which something is included solely through its exclusion" (I. Abraham, 2014). The postcolonial administration of the Northeast region reinstated frontier exceptionalism through policies of tribal protectionism, securitization of regional development and centralized political control as shown in the following sections.

The postcolonial state related to the frontier peoples of the Northeast region through protectionist discourses of domination and exclusion. Following independence, the inhabitants of the region were included in the list of 'Scheduled Tribes' (STs). This list recognizes communities along colonial categories by recording distinguishable features such as "primitive traits, distinctive culture, geographical isolation, shyness of contact with the community at large and general backwardness". The recognition of ST status entitles communities to constitutionally granted individual and group rights such as reservations in government owned educational institutions and administration (Ministry of Tribal Affairs, 2014; Wahi & Bhatia, 2018)² and political representation in the state assemblies (Baruah, 2003a). As Baruah shows, tribal representatives dominate state politics in the Northeastern states of Arunachal Pradesh, Meghalaya, Mizoram and Nagaland (ibid).

² Currently there are 750 tribes in the Scheduled Tribes list and they constitute 8.6% of the total population.

In addition, STs are the only category of people who also enjoy group rights to land if they are based in tribal majority areas within any state. Areas with majority tribal populations enjoy the cover of protectionist land laws in India, called ‘Scheduled Areas’, according to the Fifth and Sixth schedules of the constitution. Fifth Schedule areas are located in ten states of the Indian mainland. Many parts of the Northeast region such as specific areas of Assam, Mizoram and Tripura and all of Meghalaya are governed through the use of the Sixth Schedule. Sixth Schedule areas in the Northeast region are self-governed by indigenous communities through the institution of autonomous district councils. These councils govern a range of aspects such as taxation, land allotment, property inheritance, law and order and law making. Arunachal Pradesh and Nagaland do not have scheduled areas under the sixth schedule even though they are tribal majority states. Nagaland has a system of village councils under a special act of the state and according to the special constitutional provisions of Article 371 A³. Arunachal Pradesh has *panchayats* as a form of rural local government, much like the rest of the Indian mainland⁴ (Sangma et al., 2001). Arunachal Pradesh’s exceptional status within the Northeast region is discussed in section 3.3 of this chapter.

The special constitutional provisions for the Northeast region can be understood as a form of protecting indigenous lands by the use of anti-market laws to prevent alienation of land and political uprisings. Such laws imposing non-alienability of the land economy is also found in other British colonies such as Fiji (France, 1969). In Sanjib Baruah’s words, this form of governance transformed the Northeast from a region of sovereign polities to tribal enclaves or homelands (Baruah, 2003a). The group rights to land framework provokes political mobilizations and counter mobilizations by ST and non-ST communities over the question of ST status (Naqvi, 2019; Ravidas, 2019) and creation of autonomous councils to govern territories within states. As Baruah notes, “the exact location of borders” is critical to the implementation of the ST provisions (Baruah, 2010b). The constitutional provisions for STs makes the politics of place and identity very charged in the Northeast region.

³ Article 371 of the Indian constitution allows special provisions to certain states by which their Legislative Assemblies are allowed to make rules on issues such as land, law and order, employment and cultural practices.

⁴ There have been proposals for ADCs in the state, but none have been formed (Anand, 2018; PTI, 2015b).

The Northeast region has a high rate of Internally Displaced Persons (IDPs) driven from their homes into temporary or permanent camps by violent ethnonational clashes between communities (Baruah, 2003a). The Norwegian Refugee Council puts the total number of people displaced in India in the last five years at 850,000 out of which 345,000 were displaced in Assam alone (PTI, 2015a).

Revisionist intellectual and social histories of the Northeast region by scholars offer new understandings of northeast colonial subjects as those who were engaged in neighbourhood relationships of cooperation and exchange with valley communities. Contrary to our understanding of the Northeast communities as people ‘attached to land’, these studies show that upland economies thrived on fluid and changing relationships to land. Huber and Blackburn’s edited volume of papers suggest that fluid migrations with north/south or up/down, east/west and circular orientation, rather than fixity, were the basis of community life in pre-colonial and early colonial periods. The reasons for migrations ranged from community conflicts and environmental factors to state-making efforts in the region (Huber & Blackburn, 2012). These studies point to the profound effects that colonial boundary making and administration had on community life, economic development and interregional and interethnic relations. The cementing of international borders after the colonial period, rendered historical mobilities of people with their animals and material possessions illegal. From being a way of living, these mobilities became ‘risky ventures’ (van Schendel & Abraham, 2005).

3.2 Territorial Borders and the Politics of Securitization

On today’s political map, India’s Northeast is a triangular shaped region in the far right corner. Its odd shape, with one arm each jutting into east Asia and South-east Asia, was created by the partition of British India and British Burma in 1937 and the creation of East Pakistan in 1947 due to the partition of India and Pakistan (McDuierra, 2009b). The McMahon line was drawn between Tibet/China and India in 1914. Today the administrative region of Northeast India is hemmed in by international boundaries with China, Nepal, Bhutan, Bangladesh and Burma. The region is connected to the Indian “mainland” only by a narrow “Chicken’s neck” at Siliguri in West Bengal. Within the region are eight state units created based on shifting

justifications of political and economic regionalization. The creation of the eastern periphery of independent India is rightly pointed out as a case of “fluctuating borders” (Pachau & van Schendel, 2016). The contemporary challenges of the Northeast region embody the “postcolonial condition and its unending struggles over geography” explained evocatively by Soja in his foreword of *Postcolonial Spaces* (Teverson & Upstone, 2011).

The postcolonial history of the Northeast region has suffered on two major accounts. Firstly, even though the partition of India and Pakistan had profound human, material and ideological impacts on the Northeast region, several historical works have pointed out that political discourses and popular nationalist imaginations of the partition of India and Pakistan are fixed on the western and northern borders. Partition discourses left out the processes of border formation and its effects on social, cultural and economic life in the east (Chatterji, 2007; Raghavan, 2013). These scholarly works bring to bear the importance of multi-sited ethnographies of war, partition and nation making. Secondly, postcolonial ‘mainland’ India saw grand political action in the form of language movements and the formation of large states and the Constituent Assembly debates. These themes dominated the work of economic and political historians of India. Frontier regions gained attention in these political histories as the backdrop of the partition and as an event more than a process of waves of mass migrations across borders. Post-colonial economic and social history of the Northeast region is ‘patchy’ for the decades of the 1950s, 60s and 70s.

India-Pakistan relations

Since India’s independence, the Northeast region’s developmental possibilities have been tied up with the postcolonial politics of securitization in South Asia. India and Pakistan fought three wars between 1947 and 1971, which were fought on the eastern and western borders of the country. Pakistan’s provocation for the 1947 and 1965 wars with India was primarily to liberate Kashmir from Indian control. But, as the North East became a theatre for bloody secessionist movements after Indian independence, Pakistan used its eastern wing to support various Naga, Mizo and Manipuri insurgent groups (Bhaumik, 2009; Lintner, 2012). According to the Swedish journalist Bertil Lintner’s observations, the role of Bangladesh this was a tactical ploy

to keep the Indian forces dispersed by opening a second front of disturbance in order to help the Kashmiri separatists in their war against the Indian state (Lintner, 2010).

In 1971, the Indian Army defeated the Pakistani forces and helped the Bengali nationalists found the new state of Bangladesh. Even after the war, Pakistan continued to use its clout with the Bangladeshi army and intelligence officials sympathetic to it to support insurgents in the North East (ibid). In his book, *Great Game East: India, China and the Struggle for Asia's Most Volatile Frontier*, Lintner states, the role of Bangladesh “is more complex and cannot be explained just because Pakistan and the ISI had managed to re-establish influence in this bastion of Bengali nationalism” (Lintner, 2012). After the creation of Bangladesh, serious differences over some crucial matters soon after independence soured relations between India and Bangladesh. In particular, while Bangladesh accused India of denying it its fair share of the Ganges waters. India was concerned about the persecution of minority Hindus in Bangladesh. Moreover, India was accused of supporting ethnic rebels in the Chittagong Hill Tracts of Bangladesh. For many in Bangladesh, India the liberator had turned into a villain. The relations touched a new low when Bangladesh National Party (BNP), an Islamist party sympathetic to Pakistan, wrested power in 1997 (Bhaumik, Guhathakurata, & Basu Ray Chaudhury, 1997; Ghulam Kabir, 1994; Lintner, 2012).

India-China relations

With the Chinese annexation of Tibet in 1951 and the Indo-China war of 1962, the Northeast region became a highly contested and militarized ‘zone’. The tensions between the two most populous countries of the world, India and China, have been a topic of study for many scholars (Daulet Singh, 2012; Guyot-Rechard, 2017; Ling et al., 2016). Scholars have focused on the still-unresolved boundary disputes as the primary source of bad blood between the two nations. The Indian government has stuck to boundary lines drawn up by the British, the Ardagh–Johnson Line in the north-west of the Himalayas near Ladakh and the McMahon Line on the eastern fringe, as natural and historical demarcations separating the two nations. But the Chinese government claims that its rightful territory extends beyond these lines. This has been a source of brinkmanship over the ownership of more than a hundred

thousand square kilometres of territory, mainly near Ladakh in northern India and Arunachal Pradesh in the eastern Himalayas (Mehra, 1982; Noorani, 2011). In her book, *Shadow States: India, China, and the Himalayas, 1910-1962*, Berenice Guyot-Rechard argues it is not just the boundary dispute or power games that create tension, but the fact that the two nations aim to achieve “exclusive authority and legitimacy over local people” (Guyot-Rechard, 2017). According to Guyot-Rechard, the “idea of an always discernible, readily available, and equally viable alternative political project is a key element of bilateral tensions”. Drawing from a feature of the Westminster form of government, she concludes that the two countries can be understood as “each other’s ‘shadow state’ in the Himalayas” (ibid).

North-East Frontier Agency (NEFA) or today’s Arunachal Pradesh was brought under the Indian administration in the 1950s after the Chinese annexation of Tibet. During the 1950s under the Prime Ministership of Pandit Jawaharlal Nehru, the developmental Indian state maintained only a light presence in the hilly areas of NEFA (Baruah, 2003c; Karlsson, 2011). But the Tibet uprising in 1959 brought the Chinese very close to the Indian borders. On the basis of careful archival work, Guyot-Rechard claims that India’s concern with China was not primarily a military one. India feared that China would earn favour with the locals of NEFA (Guyot-Rechard, 2017).

The war of 1962 was China’s attempt at dislodging the Indian state from Arunachal Pradesh. Even though the Chinese military efforts were a success, Guyot-Rechard states that this was a “pyrrhic victory”. The residents of NEFA accepted an Indian government that she characterizes as “less efficient but also more malleable”. On the Tibetan side, the popular resistance to Chinese occupation continued (ibid). After India’s debacle in 1962, the policy of ‘light administration’ followed under Prime Minister Nehru was discontinued. This period also coincided with the death of Verrier Elwin in February 1964 and Nehru in May 1964 (Haokip, 2010). The subsequent years were marked by policies of “integration” of the region into mainstream developmentalism and a deliberate penetration of the Indian central administrative and military establishment in the social and political administration of the region (ibid). Since 1962, the region has existed in a ‘naturalised state of emergency’ (McDuie-Ra, 2009a).

Regional Subnationalisms

Ever since India became independent, the northeastern region has been a cauldron of violence, civil war and insurgency, making it one of the most violent, and politically volatile regions in the world. The formation of international borders, internal conflicts that erupted immediately after the end of British colonial rule, on integration with India and the terms of integration, have securitized the region. Starting with the Naga secessionist rebellion in 1947, which continues to stir even now, the region has seen the growth of insurgencies in almost every state. Nagaland was granted statehood in 1963, as a form of security from China (Baruah, 2003a). As the BBC journalist Subir Bhaumik has written, “insurgencies never peter out in the North East, even though insurgents do.” For instance in Mizoram, where separatist guerrillas made peace with the Indian state in 1986, smaller ethnic groups like the Brus and the Hmars have taken to armed struggle in the last two decades (Bhaumik, 2009).

The domestic politics in India of the time centered on security issues. The period after the war with Pakistan in 1971 and until the end of the Emergency in 1977 and through the early 1980s was a period of consolidation of the Congress Party under Mrs. Indira Gandhi (B. Chandra, Mukherjee, & Mukherjee, 2000). Having won the elections with a clear majority after the debacle of the Emergency and a short government under the Janata Party, the Central government jettisoned nimble strategies of negotiation over differences for a more aggressive politics (Brass, 1994). The military was extensively used in the process of ‘brokering peace’ with subnationalist movements in Assam, Mizoram, Kashmir and Punjab.

The Northeast region has remained militarized since Indian independence. The Indian army is posted at many locations along the outer regions of Arunachal Pradesh and Sikkim watching the international borders with China. Check-posts of the Border Security Force are set up along the borders with Myanmar and nearly 70% of a very costly boundary wall has been built to restrain cross-border illegal migration of humans and goods across the Bangladesh-India borders (Ramachandran, 2017). In the densely populated towns along the borders with Bangladesh and Myanmar it is nearly impossible for the regulatory gaze to distinguish between citizens and aliens. Yet, nearly 1000 people, accused of being illegal migrants to India from Bangladesh are

imprisoned in detention camps in Assam (PTI, 2019). These individuals have no hope of freedom as Bangladesh refuses to acknowledge them as citizens and extradition is not allowed in these circumstances under international law (Agarwala, 2018).

Tribal and non-tribal Assamese communities who see themselves as indigenous to Assam have feared for many decades that migration into Assam has occurred at such a large scale that it could unsettle domestic Assamese politics, linguistic culture and economy. The legacy of the Bengali settler colonialism practiced by the British government in this region resulted in waves of violent attacks against Hindu political and Muslim economic refugees from East Bengal/Bangladesh (Bhattacharya, 2012). One of the worst of these communal attacks took place in 1983 (Kimura, 2013). The Assam Accord was signed in 1985 between the central government and the leaders of the “Assam agitation”, a student led movement. According to the terms of the Accord, the central government was to identify all the “illegal” immigrants from Bangladesh who came into India after March 1971. These conflicts have continued for decades and erupt before elections.

The state of Assam is presently engaged in an impossible exercise of updating a database of citizens called the National Register of Citizens (NRC) under the supervision of the Supreme Court of India. However after two recent published versions, over 19 lakh (1.9 million) people have been left out of the citizens’ list rendering them almost stateless (Saha & Agarwala, 2019). The excluded names comprise not only the Bengali-speaking people of Assam who may have entered Assam before or after 1971, but also a large number of indigenous tribal communities of Assam who could not furnish the required documents as proof of citizenship (Mazumdar, 2019). Those excluded from the NRC can appeal to the over 100 Foreigners’ Tribunals set up in the state (Bhatia, 2019). But the communalized politics of the region is already geared up for resolving the question of citizenship in this region in politically expedient ways.

The Army and the paramilitary forces are posted in several locations throughout the Northeast region to deal with this relentless mushrooming of insurgencies. The Indian state has deployed draconian measures such as the Armed Forces Special Powers Act (AFSPA). This colonial law criminalizes citizens. Sections 4 and 6 of the legislation

bestow sweeping powers and impunity to the armed forces for all crimes, including rapes, in the name of counter-terror operations. Section 4 also allows forces to search premises and make arrests without warrants, “use force, even to the extent of causing death”, destroy arms, hideouts and to stop, search and seize any vehicle (Bhattacharyya, 2018; McDuire-Ra, 2009a; Ranjan, 2015). Deaths are ironically called ‘encounters’ when they are asymmetric events (Baruah, 2010a).

Evidently, incidents of deaths, arrest, rape, assaults, pillage, kidnap and torture continue to occur during search operations, cordon and crackdowns from all over the ‘disturbed areas’. As Baruah states, the executive has given itself a free hand to declare areas as disturbed and use extreme forms of territorial regulation even if they violate the fundamental rights of the people of the region (ibid). The many acts of commission by security agencies of the Central government have further eroded people’s faith in both democracy and development. According to Bhaumik, “rampant violations of human rights and use of terror by both state and non-state actors, ethnic cleansing and extra-judicial killings have weakened the political system and the social fabric and have led to substantial displacement of populations” (Bhaumik, 2009). In his anthology of essays titled *Governing India’s Northeast*, political scientist Samir Kumar Das argues that efforts to overcome insurgency in the region by introducing development in the region since the early 1990s have created “limitless desire for development”. But these initiatives have also caused loss of resources and deprivation for others and “turned them into a new insurgent collective driven by an acute concern for livelihood and physical survival” (S. K. Das, 2013).

The partial developments made in the region during the late colonial period in the arenas of trade, infrastructure and public services were almost discontinued due to the restrictions on mobilities of peoples and commodities across the borders in 1947. River navigation and transport to the west and south of the Northeast region was curtailed after the creation of international borders between the Northeast region and East Pakistan. The creation of Bangladesh after 1971 increased the hostilities between India and Pakistan. This region saw short periods of cross- border peace between the wars of 1948, 1965 and 1971 with Pakistan and in 1962 with China. Mobility across international borders was just too cumbersome and risky due to the militarization of borders. The region became isolated from its western and eastern neighbourhoods.

This made the northeast region economically dependent on the central government. The development of the region under central rule progressed in discontinuous and contradictory ways. Establishing the border regions as state space was the main objective of the Indian state's interventions in the Northeast during the post-colonial period. The Indian government implemented twin strategies for the securitization of the region. These are the practices of counterinsurgency as development and the centralized control of regional politics. The internal and cross border conflicts in the region were the central Home Ministry's justification for practically handing over the everyday administration of many parts of the region to the military establishment for varying periods of time (Baruah, 2005). The Northeast Council was set up in 1971 under the Home Ministry as an advisory body on security and development of the northeastern states. The Council was constituted by Governors of the Union Territories, many of who were officers of the armed forces, and the chief ministers of newly formed states. (Baruah, 2003c; McDuire-Ra, 2009b)

The region's economic underdevelopment due to these securitized conditions also threatened the legitimacy of the central government, which directly ruled these border areas. The Centre revised its spatial strategies in order to politically manage these developmental failures and retain geopolitical control over this conflict zone. Between 1962, after the Indo-China war and 1987, the border areas that were carved into small political units and directly under the rule of the Centre, were elevated to full fledged states. Nagaland, where there was an armed insurgency since 1947, was the first to become a full state in 1963. The creation of states was not necessarily a top-down imposition by the Centre but also a result of local elites realizing that such demands would be heeded irrespective of their financial, administrative or constitutional viability (Baruah, 2003c). An editorial in the Economic and Political Weekly stated;

“Whether this progressive and seemingly irreversible process of atomization of every feature of socio-economic, political and even intellectual life in the northeast has been the result of carefully calculated policy of the Centre or not, it does appear that these tendencies have helped the centre in retaining control over and in close monitoring of the region than would have been the case otherwise. There have no doubt been problems especially of those arising out of the so called competing demands of the local elites. But this is a relatively easier problem to cope with than

any united movement of the mass of the people themselves in the region (“Atomisation with a purpose,” 1982)

Mc-Duie Ra calls the period between 1963 and 1987 as the time of ‘preemptive politics’ where the Centre created small states in the hope that this would restrain violent revolts against Central rule and secessionist demands (McDuie-Ra, 2009b). Baruah refers to the formation of states in the Northeast, an exercise in “cosmetic federalism” (Baruah, 2003c).

India’s trade policies with South Asia are also driven more by its historic geopolitical compulsions than economic ones. India opened its borders for economic trade in 1991. There was little hope of trade relations with West Asia given all routes passed through Pakistan. Policy analysts who favoured economic globalization urged the central government to view the Northeast region as a “gateway” to South-east Asia. According to policy reports, the Northeast region could be imagined as an “economic corridor” connecting India with Bangladesh, Bhutan, Burma, China and Nepal to create a regional trade neighbourhood at transnational scale. The Centre envisaged a slew of measures for trade and export through this region in the form of a “Look East policy”. As Das points out, while these new policy developments set into motion processes of imagining this region in new ways, these new geographical imaginations also included spaces that are beyond the boundaries of Northeast India. As a result this policy was described as India’s foreign policy (S. Das, 2010). However this policy and its revised avatar of “Act East” under the Modi government has only met with limited success. McDuie Ra analyses this central impulse to ‘Look East’ since 1991 and states that the success of this policy required the Centre to give up its paranoia about territorial control and centralized management of the Northeast region’s political economy (McDuie-Ra, 2008). More importantly, the policy was challenged by China’s trade expansionist ambitions. India’s policies focusing on this region were at least a decade later than China’s efforts to dominate trade ties with South Asian countries.

3.3 The Politics of Regional Underdevelopment and Resource Abundance

Backwardness was the conceptual category that forged a convergence of imperialist and nationalist discourses in India's developmental history (Zachariah, 2012). Zachariah's in-depth study of historical archives for the period from 1930s to 1950s shows that Indian nationalists critiqued the colonial powers as the cause of underdevelopment while the imperialist justification of colonial rule was backwardness. Zachariah elaborates that the world order after World War II and, later, the context of the Cold War brought on "development bound by economic thinking" in decolonizing nations. The rise in incomes and living standards would give poor countries a stake in the "free world". The new government of independent India upheld economic progress as the primary focus of all developmental planning and state-led initiatives (ibid).

Guyot-Rechard states that the end of colonial rule put a new political economy in place (Guyot-Rechard, 2013). An indigenous form of economic development model under Nehru would include scientific and phased state based planning (ibid). State developmentalism was implemented through five- year plans. The developmental state engaged in massive land dispossession and impoverishment to free up land for production (Levien, 2011, 2015). Much of this was for industrial development and irrigation dams as discussed in chapter 1. Mainland tribal communities faced a disproportional brunt of these impacts (Fernandes, 2004; Singh, 2003).

However, the Centre's approach in NEFA (which later became the border state of Arunachal Pradesh) involved a regime of soft measures through cultural and tribal protection as well as agricultural development and welfare schemes (Guyot-Rechard, 2013). Verrier Elwin, "a missionary and self styled anthropologist", was made Deputy Director of Anthropological Survey of India and head of the North East Frontier Agency. Through Elwin, the principles of classical anthropology were integrated into the bureaucratic management of the region (Bahadur Subba & Som, 2005)⁵. As

⁵ Towards the end of his life, Elwin is known to have "emphasized the necessity of understand the categories of tribal and non tribal in relation to each other rather than in isolation". This was a distinct change from his earlier position (Bahadur Subba & Som, 2005).

Guyot-Rechard's research shows, the NEFA administration engaged in local development initiatives in the areas of health, sanitation, education, agriculture and cottage industries in these border areas (Guyot-Rechard, 2013). Guyot-Rechard refers to this form of state intervention as 'tribal developmentalism' (ibid). This form of soft developmentalism was discontinued after 1962 in favour of state-making measures as stated in the earlier section.

The prevalent agricultural practices in the hills were considered a problem for regional development (National Council for Applied Economic Research, 1967; Planning Commission, 1997). Shifting cultivation, a system of rotational farming, popularly known as jhum cultivation or "slash and burn" farming, by its very terminology, created a vision of overall destruction. This system of agro-forestry that brought forest and fallow plots of land into a sequential production cycle was not approved by state agencies, as it didn't follow the forest-farm separation. The practitioners of this craft were considered environmental vandals and economic and technological primitives (Choudhury & Sundriyal, 2003). Developmentalists disapproved of this method as it prevented the freeing up of labour and land (Baruah, 2010b). Government schemes and programs were designed to transform this subsistence economy. Economic experts suggested "improvements" to jhum practices "to minimize the damage to the forest estate" (National Council for Applied Economic Research, 1967). At the same time, they also concluded "*The forest resources of NEFA are vast and await development*" (ibid). The water and forests of the region were seen as economic resources but the administration observed the "*the enormous initial investment costs and the lack of demand for the final products from within the state on any large scale.*" as hindrances to their development (ibid). These views of the administration on environment of the region show the economic prejudice against pre-capitalist forms of livelihood as development.

Saikia laments that the central administration did not see forests as an intrinsic part of the dynamic agrarian landscape. The National Commission for Agriculture of 1976 turned forests into 'forest resources' through the emphasis on commercial plantations for revenue. Soon after, Forest Development Corporations were set up in all the states. Speaking of this form of governance in postcolonial India that was inherently unjust to both the agrarian and forest societies, Sivaramakrishnan writes, "rural

government was subordinated to the priorities of national development” (Sivaramakrishnan, 2011). The 1970s to 1990s were an era of law making on environment protection through parliamentary and judicial action in India. The Central Government moved Parliament to enact the Forest (Conservation) Act of 1980, which centralized the regulatory control over forest use for developmental projects like large dams and mines. A public interest petition in the Supreme Court of India on illegal felling of trees and forest destruction in one part of Tamilnadu had far reaching effects for the governance of forest resources in the entire country (Dutta & Yadav, 2005). The ‘Godavarman’ case of 1996 as it is popularly known, resulted in a sudden ban on the existing forestry and logging activities in the Northeast. The specific orders for the Northeast region were related to the ban on logging in forest areas without approved working plans of the Forest Department, shutting down of unrecognized saw-mills and prohibition of transport of timber out of the region by trains or trucks. On the ground, timber trade in which local tribals, governments, merchants and migrant labour participated, came to a complete stop (Nongbri, 2001).

The border areas of the Northeast, namely NEFA, that were practically unadministered by the colonial government till 1947 were brought directly under Central rule (Baruah, 2003c). This was mainly due to the geopolitical sensitivity of NEFA being sandwiched between India and China. Although nearly 64% of the population of Arunachal Pradesh is made up of Scheduled Tribes, it is not governed under the sixth schedule. As stated earlier, the sixth schedule of the Indian Constitution granted tribal majority areas the rights to administrative self-governance through the provision of elected autonomous councils. In Arunachal Pradesh, the central government introduced Panchayati Raj Institutions (PRIs) up to the village level under the Panchayati Raj Act of 1967 (Government of Arunachal Pradesh, n.d.). Under this system of decentralized administration envisioned by the 73rd amendment to the Indian constitution in 1992, elected bodies govern administrative districts and blocks. However, in Arunachal Pradesh, decentralization was only on paper until the first *panchayat* elections were held in 2003 (ibid). Until then, central administrators designed and managed developmental activities in Arunachal Pradesh from the state level to the village. The Central government’s need for administrative control over its border territories overrode the rights of the Arunachali communities to democratic

participation in development as well as their constitutional right to tribal self-governance.

This institutional set-up for the quotidian administration of the border areas had lasting effects on socio-economic development of Arunachal Pradesh. The administrators implemented top down, poorly planned and resourced developmental schemes and projects. (Baruah, 2003c) There was no local body to curb dispossession and marginalization brought on by state developmental interventions such as introduction of settled farming, horticulture and plantations. These changes to land use practices in the absence of customary institutions affected community based land holdings, fostered the informal privatization of land and the creation of tribal elite in several parts of the Northeast including Arunachal Pradesh (D. K. Mishra, 2018). Karlsson and Soriede report the same for Meghalaya, a sixth schedule area provided with new autonomous district councils to self-govern land and natural resources (Karlsson, 2011; Navlani Soreide, 2017) As observed by Navlani Soreide, the protections to tribal people in the form of ST status and Sixth Schedule Areas did not extend to their customary institutions. The creation of new governance mechanisms in sixth and non-sixth schedule areas of the Northeast region did not enable the inclusive development of indigenous communities.

Efforts to integrate the Northeast region into the national economy were mixed up with other state making priorities. The Centre prioritized “lumpy projects” like border roads and building government institutions rather than industry, the environmental and socio-political conditions posed huge structural and institutional challenges to the efficient use of developmental funds (Madhab, 1999). The central government also gave preferential treatment to the Northeastern states under a “special category” status. This involved financing infrastructure projects in the region through 90% grants and 10% loans (Planning Commission, 1997). However implementing developmental projects through this system suffered tremendous challenges due to factors such a long monsoons, badly designed projects and poor use of funds (Madhab, 1999). The availability of funds were also impacted by the slow down in the national economy, such as in the period of the fourth plan from 1969 to 1974 when the economy was beset by recession, drought and famine (Government of India, 2016).

Upland communities of the Northeast would be allowed to participate fully in the postcolonial political economy following the upgradation of the Northeast Union Territories to states. But their developmental aspirations were subject to realpolitik. Ludden states that economic inequality is the effect of centralized planning rather than despite it. Quoting R.H. Dholakia's study from the mid 80s, Ludden states "inequality among Indian states had been increasing along inherited lines from the 1960s". The gap between richer and poorer states grew after economic liberalization as richer states were able to generate more public and private investments due to already established networks and basic services for industrialization (Ludden, 2012). With little planned spending allocated for the Northeast states, there was hardly any infrastructural development possible. The Northeast states also lost out to other stronger regions by a 'politics of scale' (Brass, 1994). Brass writes that during the period of the late 70s and early 80s, many large states were negotiating fund allocations in exchange for their support of the Congress Party that was seeking to reestablish its dominance in Indian politics. With 25 parliamentary seats of a total of 453 in the national parliament, the new states of the Northeast were too tiny to matter in national politics and fared poorly in economic terms. Due to these reasons, the Northeast region earned the label "latecomer to development" (Planning Commission, 1997)

David Harvey observes that since the 1990s there have been major shifts in the "geographical scale at which capitalism is organized" (Harvey, 2001). The Central government regionalized the states in order to scale them up into a single economic unit in 2001. It seemed to try to partially undo the effects of what Baruah critiqued as "cosmetic federalism" in the Northeast. This shift had the potential to change the old forms of governance in the region as indicated by this quote in the Economic and Political Weekly:

"..it now looks like all the work of forming little fiefs (heavily subsidized by the centre and proving a Godsend to the emerging contractor-bureaucrat complex in these territories) is slowly being undone. Increasingly one hears more about a vague region called 'northeast india'. ('In the 'Mainstream'!", 1976)

The seven states and neighbouring Sikkim were brought under a single administrative department. The Department for the Development of the Northeast Region, was set up in 2001 and later upscaled to a full Ministry in 2004. It was set up with the main purpose of attracting private investments and infrastructure development to the region and for the coordination of various departmental and ministerial schemes that the Central Government earmarked for this region. The Northeast region is the only one in the country to have a Central Ministry in charge of its affairs (Baruah, 2003c; McDuie-Ra, 2009b). Sinha describes regionalism as a mode by which small states seek economic prosperity based on ideas of agglomeration economics, institutional thickness and embedded forms of social capital (Sinha, 2004). They can transform from being regions in themselves into becoming regions for themselves (Brenner, Jessop, Jones, & McLeod, 2002).

3.4 Neoliberal Environments

As the Northeast lagged behind the rest of the Indian states in the post liberalization period, numerous official documents linked underdevelopment to the possibilities of greater political instability and insurgencies in the region. Despite earlier failures, the central government unreflexively pushed for the need for integrating the Northeast region into national capitalist development (Ministry of Development of North Eastern Region & North Eastern Council, 2008; Planning Commission, 1997). The region's land, water and forests that were outside the realm of private property were seen as a sign of their "abundance" and availability for commodification and privatization. Notions of scarcity and abundance that are related through the notion of efficiency are routinely deployed in decisions about distribution of natural resources like water and land. Mehta's scholarship compels an investigation of the idea of scarcity/abundance at the discursive and material levels (Mehta, 2001). Is abundance a fact of water or a discourse that allows large projects in the name of water resource management? According to Mehta, the 'manufactured perception' of scarcity/abundance makes possible the implementation of a 'single solution' and schemes (ibid). Dharmadhikary's work on the notion of waste that is used to describe flowing water without any stated human use provokes the question, "does a river need water for itself?" He states that all of India's water resource planning is based on the

measurement of water that is not consumed by irrigation uses and therefore flows “waste to the sea” (Dharmadhikary, 2005).

As stated in the earlier section, post independence, the river courses in these regions became international channels. River navigation in the region stopped and the region lost access to ports. This was critical to frame the rivers of the region as abundant and wasteful flows. By viewing nature as a wasted potential and the flow of water as a resource to be tapped, several policy documents packaged the region’s rivers as highly profitable hydropower sites for investment. The notion of water abundance in the Northeast region and the need to judiciously use the water resources for irrigation, hydropower and navigation were the core objectives of the creation of the Brahmaputra Board in 1980 under the Ministry of Water Resources by an act of Parliament. The Board designed a number of multipurpose dam projects for the northeastern states, however their implementation was very slow due to a host of factors. As stated earlier, large projects suffered due to insufficient funds available through the planned allocations by the central government. The long monsoon period and geological conditions of the region caused implementation problems for transport, communication and dam construction. Armed conflict and extortion by armed groups in several parts of the Northeast during these decades also affected the pace of work (Anon, 1999d, 2000b).

The delay in the completion of these projects meant staggering cost overruns. By the end of the 1990s, the costs of the Pagladiya dam, that was being built by the Brahmaputra Board in Assam for irrigation and flood control, had escalated by Rs. 50 crores (Anon, 1999e). The financial resources for these projects were arranged by the central government and disbursed through the North East Council (NEC). But these funds did not produce the expected results (R. Goswami, 1999). As the power utilities such as the State Electricity Boards were unable to pay back their dues to the power generating companies, new funds were unavailable for hydropower projects. In a meeting, the chief of the Central Electricity Regulatory Commission (CERC) revealed that Assam’s dues to the North Eastern Electric Power Corporation (NEEPCO) were Rs. 300 crores and other states’ dues made up for another Rs. 120 crores (Anon, 1999f, 2000d).

Despite such challenges, NEEPCO's Doyang project in Nagaland, Kopili-II in Assam and Ranganadi project at the Himalayan foothills in Arunachal Pradesh came online by the end of the millennium (Anon, 2000e). The Central government granted permissions to the 60 MW Tuirial project, the 75 MW Bairabi hydel project, the 12 MW Serlui 'B' hydel project and Tuivai hydel project of 210 MW all in Mizoram (Anon, 1999a). The Tuirial hydro-electric project received financial assistance from Overseas Economic Cooperation Fund (OECF), Japan, and NEEPCO successfully negotiated the takeover of the sites for the 600 MW Kameng hydro-electric project in Arunachal Pradesh, 210 MW Tuivai hydro-electric project in Mizoram and 150 MW Lower Kopili project in Assam (Anon, 1999c). Notwithstanding these projects, the scale at which dam building was undertaken in the region was limited.

Only at the turn of the millennium did the possibility of building the “world's largest hydel power project” at an investment of Rs 100,000 crores appear (Anon, 2000a). The Central government proposed three hydropower projects each on the Siang and Subansiri rivers. They were to be built by the public sector hydropower company, NHPC, although the Brahmaputra Board had originally designed them for the purpose of mitigating floods in the Assam plains. The NHPC had applied to the central government for funds, for preliminary work for access to the sites and setting up labour colonies, offices and residential areas for its staff in Itanagar, Pasighat, Ziro and Hapoli in Arunachal Pradesh (Anon, 2000c). By mid 2003, the Central Electricity Authority also granted techno-economic clearance to the Rs. 5,163 crores Tipaimukh project in Manipur that was first designed in the 1960s. It was purportedly to generate 1500 MW of power and protect the Barak valley from annual floods. Santosh Mohan Dev, the veteran Congressman elected seven times to Parliament from Silchar, the region downstream of the project site, and Chairman of the Parliamentary Standing Committee on Energy, was certain that funds would become available to this project through domestic and international financial institutions.⁶ It was to be built by

⁶ Even though the Tipaimukh project had been granted clearance, the worry of its unviability continued. For the project to be economically competitive with other energy options, the costs of providing security to the project in light of armed resistance, the costs of the diversion of the national highway and of flood moderation would have to be borne by the central government. The Congressman, Dev put all his weight behind the project to ensure that the central government agreed to pay these costs.

NEEPCO upon transfer of the scheme from the Brahmaputra Board. The plant was to be commissioned by 2011 (Anon, 2003). It has not come up yet.

Since the 1990s, India has chased a higher economic growth rate that is ‘coupled’ with higher per capita energy consumption. As a result, large private capital investments have been made in coal energy generation projects in certain regions. Similar growth trends were also taking place in China. The demands for new and cheap sources of electrical power for the growing economies of the most populous nations pushed both India and China to their peripheral regions. The two Asian giants of India and China are pitted against each other in the quest for the development of hydropower on the international Himalayan rivers⁷. China’s territorial control over the Tibetan plateau, the source of many rivers, allowed it to own 40% of the world’s total water needs (Vidal, 2013). Although a number of potential dam sites were located within Indian territorial boundaries, all the Himalayan rivers traverse through China before they enter India. The lack of accurate hydrological data of the Brahmaputra river system and any agreement over the sharing of waters with China caused considerable consternation to Indian water planners. The Indian government feared that as the ‘upstream superpower’, China would unilaterally build numerous storage projects on these rivers and rob India of its potential to generate power for itself (Baruah, 2014). Scholars point out that this form of thinking practically set off a regional dams race with China over water rather than used the opportunity to seek resource cooperation in the South Asian neighbourhood (N. Kurian, 2016).

In the shifting geographies for non-carbon power, the central government framed Northeast India as a neoliberal environment for harnessing hydropower from the region’s rivers (Bakker, 2003). Himalayan hydropower tied global discourses of energy and environmental security with earlier logics of territorial and resource control of India’s periphery. The cooperation between the Indian government and the border state of Arunachal Pradesh could enable the siting of dam projects on the region’s rivers and claim lower riparian rights over international waters (Government of India, 2010). As the Chief Minister Dorjee Khandu stated in an interview,

⁷ The states of Nepal, Bhutan, Pakistan, China and India are looking to dam Himalayan rivers to provide cheap and plentiful hydropower.

“Arunachal Pradesh is a land of mountains, forests and rivers, inhabited mostly by tribal people. The mountain geography coupled with an abundance of gushing rivers presents an ideal condition for setting up hydel power projects.” (Chattopadhyay, 2011)

New financial and policy fixes were worked out to accommodate the high costs of dam building. Policy changes in the hydropower sector at state and central levels expanded the possibilities of gaining financial investments from the private sector, domestic and international financial institutions. Prominent among these were the promulgation of the Electricity Act of 2003 (The Gazette of India, 2003) and the Hydropower Policy of 2008 by the Indian government. Even though private power generation was allowed in India since economic liberalization in 1991, the hydroelectric dam building sector had been the domain of public sector companies such as the National Hydroelectric Power Corporation (NHPC) under the Central government and State Electricity Boards of the State governments. The clauses of the Hydropower policy of 2008 made it profitable for private players to develop projects and invest in this sector. The policy incentivized quick implementation of projects and power generation through allowing sale of up to 40% in the open market, called merchant sale while 60% could be sold at fixed costs (Ministry of Power, 2008). Multipurpose projects proposed for various services such as flood mitigation and irrigation were redesigned as single purpose projects to produce large-scale electricity for commercial sale.

This was in line with institutions like the World Bank that were revising their portfolios to include hydropower as a sustainable means of energy supply and poverty eradication for fast growing economies of the developing world. Their Energy Strategy Approach Paper of 2009 stated that this “ will require financing on a scale that many developing countries have not been able to mobilize to date” (The World Bank Group, 2009). As John Briscoe, the World Bank’s water management expert, Harvard professor and winner of the Stockholm Water Prize in 2014, loved to quote, rich nations have tapped up to 80% of their economically viable hydropower potential. The way out for poor countries is to focus their directions towards “cheap and clean” hydro (Briscoe, 2014). Funds were also increasingly being made available to hydropower projects under the Clean Development Mechanism, a scheme to reduce

climate change impacts of development (Erlewein & Nusser, 2011; Haya & Parekh, 2011).

New technologies in tunneling made it possible to consider building large-scale “run of the river” (RoR) schemes in the Himalayan mountains. RoR schemes made power out of flowing water without creating large pondages for long periods of time. These schemes did not store water for long or divert river flows permanently. This type of water infrastructure is explained in more detail in chapter 8. It seemed that large dams in the Northeast had finally been able to check all the boxes of sustainable development. These claims could rescue dams from the public opposition they faced globally in the second half of the 20th century. Given these new conditions, the central government proposed a comeback of large dams in India. By 2002, the hydropower potential of Arunachal Pradesh, a border Indian state that occupies a marginal space in the Indian popular imaginaries of economic development, made it to the headlines of national business papers (Anon, 2002).

The consensus for hydropower development between the Government of Arunachal Pradesh and the Centre “attests to the economically and politically constitutive nature of energy infrastructure (Bridge, Ozkaynak, & Turhan, 2018). The spatial orientation of the political economy of energy development offered Arunachal Pradesh, the youngest state in the region, an opportunity to reorder the power geometries with respect to the Centre and the Northeast region. The central policies of 1998 and 2008 made several major changes to the financial and legal foundations of the sector mainly targeted towards encouraging private investments in the sector (Ministry of Power, 1998, 2008). Arunachal Pradesh also formalized two hydropower policies in 2005 and in 2008 (The Arunachal Pradesh Gazette, 2008). As per these policies, private sector companies could execute projects on a “Build, Own, Operate, Transfer (BOOT)” model where the promoter/developer would finance the projects and be responsible for the sale of power. At the end of 40 years, the projects would be handed over to the state government “in good condition” (ibid). According to existing norms, in return for allowing the project to be built, the host state government was eligible to get 12% of the power generated, free of cost. The policy changes and new terms set by the state government in its own interest attracted private power companies but also several engineering and construction firms with no prior

experience in power generation to build the largest proposed dam projects in this region (Rajsekhar, 2013). Between 2003 and 2009, Arunachal Pradesh distributed 130 sites through a process based on how much more than the eligible free power the companies would provide to the state. According to a journalistic report some companies promised the Arunachal government 25-26% free power in the form of water royalty (ibid). By 2013, over 150 projects were handed over to more than 50 private companies. These were to generate a total of 43,000 MW of hydropower. Many private companies were awarded or allocated sites that were already identified and investigated for dam building by the public sector agencies (ibid). The projects that were to be implemented by the collaborative efforts of the Brahmaputra Board, NHPC and NEEPCO were to be handed over to private builders making public investment open to speculation by private investors.

Arunachal Pradesh hoped to make windfall gains from these projects. According to the terms agreed between the government and the private companies, the state government's responsibility was to provide land for the project and assistance in obtaining the necessary clearances and approvals from the state and central governments. The state intended to sell its share of the free power to the grid as the local consumption in the region was low. The state government reserved the right to purchase more power if it so required through a power purchase agreement (PPA). In anticipation of the future revenue through power sale, the state government extracted loans and charged upfront payments from the power producers (Bhaskar, 2014). In 2007, the NHPC granted a loan of Rs. 225 crores at 9% interest to the state government to revive the Apex State Cooperative Bank (Anon, 2013b)⁸. The state government also brought 11-26% equity to the projects to share in the profitability of the projects. But since the state government was cash starved, the equity was adjusted against its share of free power anticipated from these projects. Thus the state government became an advocate for private dams in the state. The frenzy of signing hundreds of "Memorandum of Understanding" (MoU) in this fashion became popularly known as Arunachal's "MoU virus" after a comment made by Congress leader and the then central Power Minister Jairam Ramesh (Anon, 2009; Chakravarty, 2015). However, the central government granted regulatory permissions to some of

⁸ For a discussion on whether this would benefit the state, see the blog entries at <http://www.arunachaldiary.com/2007/07/was-rs-225-crores-deal-smart-move.html>

these projects despite these procedural irregularities as discussed in Chapter 6. The financial gains from the project preempted the consent process for these large projects.

The dam proposals to “harness the country’s largest perennial water system and produce electricity for export” were seen as a resolution to the state government’s permanent status of being cash starved. Having spent the years since statehood in making annual trips to Delhi with appeals to the Central government for development funds from the plan outlays, the politicians of Arunachal Pradesh saw hydropower as a leveler of political relations with the Centre. As Dorjee Khandu, the Chief Minister of Arunachal Pradesh stated, the commissioning of hydropower projects in the state will help to make his “dream of making the state self sufficient..a reality” (Chattopadhyay, 2011).

Although regional coordination was a stated goal of regionalizing the northeast space, the temporary boom in private investments in the resurgent hydropower sector produced contradictory effects of competition and political antagonism within and between the state units. The fierce competitive spirit with which hydropower projects were declared and speedily taken up for government approvals by the state governments attest to the role of spatiality in pushing capitalist development in uneven geographies. Contrary to the understanding of capitalist logic as characterized by the annihilation of space, global capital reorders territoriality rather than weakens or erases it (Sassen, 2006). Arunachal Pradesh emerged as a leader in the Centre’s assessments of regions with hydropower potential due to the large number of major rivers that flowed down the Himalayan mountain into the valleys (Government of India, 2001). But these rivers were also critical to the ecologies of downstream states. The 1998 hydropower policy allowed only projects less the 100 MW to be allocated by state governments and larger projects needed the consensus of central government and neighbouring states that would be affected by the altered river flows. However recognizing the interest in private investors, the state government of Arunachal Pradesh unilaterally allocated large projects through its bidding process (Rajsekhar, 2013). Not only did the government defy the norm of collaborative decisions on large dams in the region, it actively deregulated land and water use to garner more investments such as through the 2001 and the 2018 land settlement legislations

(Arunabh Saikia, 2018; The Arunachal Pradesh Gazette, 2000). This form of legal engineering to promote the state's competitive advantage was done through a legislative assembly that was already addicted to crony forms of development. Arunachal Pradesh has a unicameral legislature and all laws passed by it are like ordinances, as they have no check from an Upper House. Since 1999, elected representatives of Arunachal Pradesh engaged in party defections to overthrow chief ministers and grab power on ten occasions. Each time the political instability was orchestrated around the issues of misuse of development funds and corruption.

The proposals for large dams in Arunachal Pradesh affected Assamese sentiments in two ways. Firstly, the undermining of the Brahmaputra Board by handing over of projects designed by it to private parties was not appreciated. The Board was meant to safeguard Assam's natural resources and plan for its best utilization in the interests of the state (Anon, 1999b, 1999g). Secondly, the proposals for large-scale power generation projects meant that Assam's need for flood control was sidestepped in favour of profitable electricity generation. Large reservoirs upstream of Assam to reduce the impacts of annual flooding of Assam's Brahmaputra valley had been a persistent demand of the state government since the time it was institutionalized by the Assam accord between Assam and the Centre. Now under pressure to generate electricity for a fast growing national economy, the Centre overlooked Assam's problem and favoured large hydropower dams in upstream Arunachal Pradesh. Since the Congress Party was mostly in power at the Centre and in Assam and it also wanted to hold on to power in the environment of unstable politics in the Arunachal Pradesh, the Arunachali politicians carried on with unilateral decision-making on the dam projects without any systematic political opposition.

3.5 Conclusion

In this chapter I show that the development of the Northeast region has been framed by colonial and postcolonial regimes of frontier exceptionalism by the Indian state. Using social theories of space and postcolonial development, I examine the strategies of border formation and state-making that have produced this region as a conflict zone. I also show the role of colonial and postcolonial discourses of primitivity and backwardness in establishing the region as resource abundant and in generating

political consensus on extractivist developmental projects between the regional state units and the Centre. This chapter shows how the postcolonial politics of securitization and the politics of underdevelopment intersected to turn the Northeast region into a proposed site for neoliberal hydropower production.

CHAPTER 4

PARTICIPATORY ENVIRONMENTAL GOVERNANCE: A SITE FOR REFLEXIVE DEVELOPMENT

Development, as a set of institutional procedures and practices, has seen a tremendous shift due to critiques of the state (Nederveen Pieterse, 1998). Through the 1960s in the US and the 1970s in Europe, environmental and labour concerns of the “risk society” that had already taken root and grown in the public arena had to be addressed (Beck, 1992, 1999, 2001; Giddens, 1990). It was in this context that participatory environmental governance (PEG) was instituted for decision-making on developmental projects by several states across the world. Based on empirical data and theoretical critiques, the environment management and political ecology approaches have argued that PEG is a tool of the state to generate consent on resource use for development.

In this chapter I review the extensive literature on the global emergence of PEG. In the first section, I show the transnationalization of environment protection and development and its global critiques. In the second section, I discuss the adoption and application of PEG in India. Legal procedures of PEG are framed by India’s Environment Impact Assessment (EIA) notification. I conceptualize the deployment of EIA based decision-making in India through the periods of the command economy in India as a tool in the politicization of development. In the third section, I argue that the EIA has worked as a handmaiden of neoliberal development in India and this has resulted in the delegitimization of neoliberal development. Despite being an official space controlled by the state and set up to manage consent, PEG has failed for the Indian state. I conclude this chapter with a discussion on how PEG procedures have generated conditions and public space for reflexive development.

4.1 PEG and the Transnationalization of development

As shown in Chapter 1, mainstream state led developmentalism was critiqued by supporters of the free market economy as well as those who bore the social and environmental burdens of this form of development. This led to a shift to neoliberalism in which the state largely gave up its primary role of production to the

private sector on the grounds of the latter's greater efficiency and expertise in economic production. Scholars point that neoliberalism was projected as the cure for social inequalities caused by poverty (Nederveen Pieterse, 1998). In this form of economy, governments played the role of regulating the socio-economic conditions of production.

As neoliberal economies of the West and the investment of private capital expanded, more environmental resources were brought into mainstream production sectors such as energy, transport, commercial agriculture and industrial manufacturing. In the US, environmental impacts gained public attention through works such as Rachel Carson's *Silent Spring* published in 1962 and by the work of non-governmental organizations like the Sierra Club and Friends of the Earth set up in 1964 and 1969 respectively. The governments were under pressure to act in public interest and control the damages emerging from this form of economy. PEG is widely understood to have emerged as a response to these concerns. It emerged as a form of decision-making to define, address and mitigate environmental problems caused by economic liberalization in the US and Europe. Governments made efforts to regulate, manage and mitigate ecological concerns and these efforts took the form of institutionalised environmental politics (Bulkeley & Mol, 2003; Weston, 2004).

The US government was the first to promulgate the National Environment Policy Act in 1969, which institutionalized Environmental Impact Assessment (EIA) into their decision-making process. According to this process, experts study impacts of proposed projects and their assessments suggest tradeoffs to mitigate or manage these impacts. The assessment reports are then discussed in public and following these deliberations a final decision is made to approve or reject the project. Weston argues that this institutionalized framework of governance was a response to the public demand from an environmentally concerned citizenry for rational and scientific environmental decision-making. Transparency and citizen involvement in such decisions was part of the demand as there was mistrust in the government's intentions to protect the environment (Weston, 2004). Thus, an expert-led and citizen participation based decision-making became legalized in the US through the EIA process.

Since then, there has been a shift in the legislative and institutional frameworks for development around the world. International environmental conventions provided a medium for the circulation of environmental knowledges and institutions for environmental management. At the time of the United Nations Conference on the Human Environment in Stockholm in 1972, eleven countries had environment departments. Within ten years it increased to 106 countries, mostly in developing countries such as Thailand and the Philippines (Biswas & Agarwal, 1992). The terms set by aid agencies and financial institutions for loans and grants to developing countries also pushed these frameworks for environmental governance (Goldman, 2005). Several developing countries receiving support from international financial institutions like the World Bank adopted the highly procedural and reproducible system of EIA that was devised by the US Environment Protection Agency (EPA) (Hironaka, 2002). India's EIA framework is built on the experience of EIAs undertaken for public sector projects financed by the World Bank and the Asian Development Bank. These funders of development projects required EIAs to be done as per international safeguards and standards. By the decade of the 1990s, much international recognition was given to EIAs and over a 100 countries adopted it (Cashmore, 2004). Today, EIA based decision-making is practiced in 191 countries. (Morgan, 2012) Members of reputed public and private institutions serve as EIA expert regulators, consultants and committees. EIA is the main instrument of environmental analysis globally and a tool by which development and environment are to be made commensurate. It has been applied to policy making, for project decision- making and mitigation of project impacts. It has altered governance from being closed-door collaborations between interested parties to open public consultations. It has gained so much significance that non- participatory decision-making is regarded as "illegitimate, ineffective and undemocratic" (Bulkeley & Mol, 2003).

Critiques to improve PEG

During its public life, the concept and practice of EIA based decision-making has faced a good measure of internalist critiques that are based on structures and processes internal to the scientific community (Ziman, 1984). They have also

generated externalist critiques that are based on its relevance to society.⁹ The internalist critiques have focused on improving the process and outcomes of PEG rather than maintaining exactness and duplicability in its practice. While project level EIAs are still commonly done across the developing world, there have been changes to the EIA policy in several countries towards strategic EIA for sectoral decisions (Sadler, 2005) and cumulative EIA for group of projects such as dams on a river basin (Agrawal, Lodhi, & Panwar, 2010). The limitations and gaps of the traditional EIA that focuses on ecological impacts have given way to techniques for understanding social impacts through SIA, health EIAs and gender EIAs (P. A. Kurian, 1995; Morgan, 2012) as well as to recognize the impacts on specific aspects of value in ecology such as biodiversity (Mathur & Rajvanshi, 2001). Scholars also lament that EIAs have gone ‘too far from a precautionary and adaptive approach’ (Bond et al., 2012). They recommend sustainability assessments as the “third generation” of EIAs to recognize ways of proactive environment protection and adaptation rather than seeking merely to mitigate impacts or minimize the negative externalities of proposed projects (Glasson, 1999).

Scholars have differed over the reliance on science and technology in EIA processes to arrive at a model of tradeoffs between environment protection and development. Should the EIA process evolve into an exact science or should it be used as a deliberative and context specific tool? Cashmore points to the critiques of EIA which state that it does not have a scientific theoretical basis despite the practice of EIA having evolved significantly over the years (Cashmore, 2004). Cashmore observes that the science of EIA, its goals and methods are varied, making it more unscientific and more political. In his view, EIA could be seen as an “applied science” or an experimental science where every EIA could be used to learn about impact prediction so that it can be refined in the selection of parameters and made more quantitative, verifiable and therefore scientific. The EIA could also be approached as a scientific research project. This approach suggests that every EIA should have a set of questions specific and important to that context. In this approach, the EIA could be seen as a part of the project and customized to suit the needs of the project from its very early stages of design. Such a “technocratic model”, according to Cashmore, proposes to

⁹ Schmidt, Graversen and Langberg discuss internalist and externalist perspectives in scientific research (Schmidt, Graversen, & Langberg, 2003).

have the EIA do something rather than just be done. But this would not offer any standards or basis to legislate. So it cannot be used as a basis of decision-making. Each EIA would be the product borne out of the numerous variables acting upon the specific project. It would not be open to question or doubt as the project that operates in real time is influenced by numerous variables, most of which are outside the control of the project proponent. Internalist critics consider that the EIA could a pragmatic and deliberative “civic science”. In this form, the resources at hand to conduct an EIA are limited and decisions have to be taken in circumstances that are not ideal. Here the EIA can be used to consider various options available within the circumstances and only those parameters that can be measured and modeled are used. Predictably only those impacts considered significant are chosen for study in this model. The form of EIA demonstrates it as a “practicable science” (ibid).

The role of experts in PEG

Citizen science and post-normal science argue for a limited role for science in relation to other forms of knowledge, and including those who may stand to be impacted by the decisions (Funtowicz & Ravetz, 1991; Irwin, 1995). Irwin believes that far more than science being the problem in decision-making processes like the EIA, it is the “ascendancy of expertise” that is the problem (Irwin, 1995). The dominance of official expertise is especially problematic in assessments that require to be done in different cultural contexts where traditional values and attachments to nature have to be interpreted (McCormack, 2016). Irwin also suggests that unlike what is presented of scientific assessments, there is diversity and difference in scientific practice that can be useful for knowledge making (Irwin, 1995). The need to make the EIA appear more scientific by demonstrating its duplicability is a dominant one. It is because of this aim that EIA policies are driven by procedures rather than what the situation merits. EIA regulatory practices are required to ensure that it is a level playing field for investors and that the decisions made on the basis of EIAs are not political. This goal not only fails at making the EIA scientific in terms of its verifiability and exactness of prediction but it also only gets the minimum benefit from the process.

Participatory forms of governance seek to achieve varied outcomes such as information generation through access to local knowledge (Pellizzoni, 2003),

information sharing (Arnstein, 1969), managing expectations and conflicts (Shepherd & Bowler, 1997), behavioural change, social learning and informal education (Sinclair & Diduck, 2000) besides the normative aspiration of democratizing environmental governance (Backstrand, 2004). The involvement of non-state actors in decision-making and their influence on public institutions such as scientific agencies, the courts and the media is seen as needed to unsettle the “ascendency of expertise” (Irwin, 1995), scientocracy (Lele & Norgaard, 2005) and unsustainable networks that misrepresent environmental values (Smith, 2000). Scholarship in political theory, public policy and STS engages with PEG as a means to shift from technical democracy to deliberative democracy or a “civic model” of participation (Callon et al., 2009; Cashmore, 2004).

According to Weston, the EIA as a tool for rational decision-making is no longer possible nor worthy of being attempted (Weston, 2004). While the EIA purportedly separates fact and value, all assessments result in decisions that are value-based. Besides, experts in whom there is increasingly less trust make these value-based decisions. He reminds us that the EIA grew as a source of knowledge within two contradictory influences, one that relied on non-partisan expert based decisions and the other, skepticism towards modern science¹⁰ (ibid). Gibson suggests that the EIA should be an evolving process so that it can deal with uncertainty and risk (Gibson, 2006). If facts are no longer be trusted on their own, the EIA needs to explore political and moral alternatives rather than techno-managerial ones. To find these alternatives, EIA needs to be a tool of negotiation and compromise (Cashmore, 2004). This puts EIA in the realm of politics.

Scholars point to the distance between the theory and practice of PEG. While they recognize the normative value of PEG, the practice of public participation in such decision-making has been critiqued for its effect on legitimizing mainstream development. EIA models range from ones that emphasize the one-way provision of information to participatory methods of problem-solving and to radical forms of

¹⁰ This skepticism was clearly outlined in Rachel Carson’s *Silent Spring*. Carson enunciates the destruction caused by the widespread use of DDT and other toxic chemicals in agricultural programs in the US. Herself a scientist, she made it clear that she was not only against the use of chemicals but was urging a public review of the impacts caused by an industrialized, technological society on the natural world (Carson, 1962).

deliberative democracy and environmental justice (Cashmore, 2004). Arnstein's classification of public involvement emphasizes that the normative purpose of public involvement at the cost of their time and resources should be the redistribution of power. However, most times it is practiced as a tokenistic engagement that involves informing, consultation and placation (Arnstein, 1969). Glasson observes that public participation takes place as minimally as expected by regulation (Glasson, 1999). Such practices appear more as an effort in public relations by the project proponent (Shepherd & Bowler, 1997). In practice, scholars argue, public participation is deployed as a way of increasing legitimacy for decisions that favour governments and businesses and for managing conflicts generated by them (Shepherd and Bowler, 1997). By this understanding, EIA is seen as a tool of distraction and can be described as the trojan horse of high impact development that validates resource grabbing (Mehta, Veldwisch, & Franco, 2012).

Political ecology and poststructuralist critiques of participatory resource governance view it as a means of generating consent and compliance to unsustainable policies and the consolidation of power and legitimacy by state (Bulkeley & Mol, 2003). Bulkeley and Mol draw attention to the shift from "government to governance" as a result of reorganized relationships between state and society (ibid). Development experts script inequality in society as the problems of poverty and underdevelopment and those that can be solved through technical solutions enumerated in EIAs. They provide us with notions of nature that are very different in form and content from lived experience. They are engaged to 'greenwash' what would otherwise be identified as environmentally 'dirty' and unjust projects and cause of the failure of governments or investors who promote them. Such official environment expertise that is at the service of development or "eco efficiency" has been critiqued as the ecological modernization of power (Hajer, 1995). Such expertise frames nature as a resource and validates the use of nature in capitalist production (Harvey, 1996; Joan Martinez-Alier, 2002). This managerial form of environmentalism is seen to justify intrinsically destructive development. PEG has been critiqued for producing new forms of legality, eco rationality (Goldman, 2001) and environmental subjectivity (A. Agrawal, 2005b), and causing environmental or social injustice (Harvey, 1996; Mol & Spaargaren, 2000).

4.2 PEG and the Politicization of Development in India

In this section, I review the emergence of the EIA based system of participatory environmental governance in India and elaborate on its political nature. The EIA based decision-making was introduced in India by the Central Government in the 1980s. Prior to its introduction, the Indian government's decision-making on public sector development projects was based on the Cost-Benefit Analysis (CBA). As shown in Chapter 2, the CBA was a tool of the command economy to determine the government's public investments in development projects. These analyses helped to assess the socio-economic viability of technological projects. The CBA is a method to arrive at the total equivalent money value of the benefits and costs of a project to the community to help establish whether they are worthy of undertaking (Singh, 1997). CBA is used in the calculation of the internal rate of return, an indicator of the profits on capital investment. The thumb rule followed for official decision-making on public investment was that benefits should exceed costs by a proportion of one and half times (Valappil, Devuyst, & Hens, 1994). Several projects taken up in the colonial and post independent India were contested by communities who would face the brunt of projects approved through the CBA. They brought to public attention, the costs that were left out of the CBA as these were seen as externalities or collateral damage (Dharmadhikary, 2005, 2007). This method of decision-making also resulted in favour of the project in most cases. Through an analysis of CBA done for hydraulic installations such as the Sardar Sarovar project (SSP), Singh explains that this is due to the lack of standardization of which items are considered costs and benefits (Singh, 1997).

The projects undertaken by the government up to the 1980s did not account for environmental impacts of projects (OECD, 2006). The CBA did not factor in the burdens these projects placed on sections of society whose lands would be acquired, livelihoods disrupted and living conditions polluted. As social movements and local resistance built up against these projects, public investments were stalled¹¹. In some places, preliminary work had been undertaken at substantial costs, in others, loans had

¹¹ Some examples of projects that were stalled due to public protests are the Polavaram dam in Andhra Pradesh, the Athirappilly dam in Kerala and the Maheshwar Dam on the river Narmada.

already been received to undertake construction and in several others and the financial viability of sectoral departments and companies were riding on the completion of projects. The difficulty that these conflicts posed to the Central Government was not only an environmental one or one of social injustice. It was one of economic costs due to delays in project implementation.

The Organisation for Economic Co-operation and Development, (OECD) and intergovernmental organization founded in 1961 to “stimulate economic progress and world trade” is a significant knowledge maker on CBA. The OECD states, “Tracing and measuring impacts is the necessary precursor to valuing those impacts by measuring preferences for or against the impacts.” (Pearce, Atkinson, & Mourato, 2006). In 1975, the Central Water Commission, Government of India first recognized the need to consider environmental aspects prior to the construction of dam projects as several projects were held up by protests by affected communities as shown in Chapter 2. The CWC introduced guidelines for conducting investigations on proposed river valley projects. The guidelines had a concluding chapter, which states:

"The planning, construction and operation of irrigation/ hydroelectric/ multipurpose projects have considerable impacts on navigation, fish culture, wild life, recreational aspects and overall ecology of the affected regions. Some of these aspects on the ecology of the region as well as the overall environment are irreversible in nature. It is, therefore, necessary that a careful evaluation is made of these impacts, whether good or bad before the project is undertaken and necessary measures are planned well in advance to mitigate, wherever feasible, the adverse impacts" (CWC, 1975).

The guidelines listed the "minimum surveys and investigations required" on environmental aspects of dam projects such as effects on fishing downstream, on reserve forests and wildlife areas; on waterlogging and on historical and cultural sites. It required that information be provided about the effects on the river due to flow alterations such as silting/scouring of the riverbed, flood problems and salinity (ibid). Though these directions were written in the guidelines, they were not made mandatory by any clear set of procedures or steps to be followed after the data on a project's environmental aspects were collected. The implementation of the guidelines was left to project proponents with no external or independent supervision or

oversight. As a result, the environmental assessments of dams were “incidental components of the planning process” (Menon & Kohli, 2009a).

Centralizing power through green knowledge

The EIA was introduced as an administrative step to account for those impacts and additional costs that the earlier forms of CBA was unconcerned with. According to Ramaswamy Iyer, ex-secretary, Water Resources and a vocal advocate of river conservation, it was expected that the new costs and benefits unraveled through EIA would be factored into the CBA and would help to arrive at more environmentally sound, efficient and economically viable investment decisions (R. Iyer, 2003). However, EIA and CBA are not a natural fit because they adopt different conventions of measurement. Conserving a scarce resource may be seen as an environmental benefit, but the CBA would identify a resource as scarce by its price and then proceed to qualify the benefit of its use as an economic benefit (Pearce, Atkinson, & Maurato, 2006). More importantly, in the words of Dr. S. Maudgal, Director, Department of Environment and Member Secretary of the Inter Ministerial Committee on River Valley Projects, “Technical viability and economic returns are not the only goals in project planning” (Maudgal, 1985).

Nevertheless, the government hoped that the adoption of the EIA would bolster the legitimacy of the official decision-making process of the government. With the EIA, the government sought to identify and measure what was until then seen as “unanticipated- undesirable consequences..., which may nullify the socio-economic benefits for which the project is designed” (ibid). The intention of such an exercise was to first guess the issues that could become the bulwark of resistance and to provide ways to settle them in advance. The ‘legitimacy crisis’, which the government and its public funded projects faced due to the unfair distribution of costs and benefits, could potentially be overcome. The EIA was presented as a process that made visible or transparent these costs of the project and helped to mitigate them to the extent possible. EIAs of public sector projects proposed in sensitive sites or where public opposition was expected were submitted for approval of the Environment Ministry even before EIA norms became statutory (Banham & Brew, 1996).

The domestic political context in which scientific environment management came to be seen as a part of state-led developmentalism is often described as the period of political centralization in India. During this period, the Congress Party led by Mrs. Indira Gandhi systematically established political dominance over numerous internal party factions, regional political parties and erstwhile princely states (Rangarajan, 2006). *Garibi Hatao* (Alleviate Poverty) was her main election campaign slogan that won her wide public support. During her terms in office as Prime Minister from 1966 to 1977 and then again from 1980 to her assassination in 1984, she deployed centralized, science-based regulations on land use, forests and wildlife as a tool of rational economic development (Ramesh, 2017). She abolished the privy purses (the payment of a fee by the central government to the families of the colonial princely states who had agreed to become part of the Indian Union after independence) to save government revenue. Mrs. Gandhi's government also nationalized the large game reserves under the ownership of these families and turned them into Protected Areas, introduced game rules, banned tiger shooting and use of tiger, leopard and snakeskins. These were done through a series of measures that were tied together by the promulgation of the Wildlife Protection Act of 1972 (Rangarajan, 2006). As B. B. Vohra, who became the Chairman of the National Committee on Environmental Planning in 1980, observed, although land and water were both under the jurisdiction of state governments, the Centre was increasingly being burdened due to bad planning by the states and had to bear the costs of disasters in the form of floods, droughts and soil loss (Vohra, 1973).

Mrs. Gandhi is known to have famously stated in the 1972 UN Conference on the Human Environment that poverty is the biggest polluter, emphasizing her government's focus on the scientific management of natural resources for economic development (Ramakrishna, 1985; Ramesh, 2017). A "Committee of Natural Resources" has been set up within the Planning Commission in the Third Five Year plan (1961 to 1966) to systematically investigate the extent of mineral resources and ways to develop them (V. Kumar, 1977). Although the natural resource intensive approach to economic growth was already a part of official planning, as Rangarajan suggests, the environmental regulations of today are Mrs. Gandhi's legacy (Ramesh, 2017; Rangarajan, 2006). The ideas for scientifically backed, procedurally elaborate, bureaucratic environment regulations were developed through India's ministerial

participation at the UN conferences. In the fourth five-year plan (1969-1974), Mrs. Gandhi set up the National Committee on Environmental Planning and Coordination (NCEPC). Established in February 1972 and made of sub-committees and task forces constituted by environmental experts, administrative officers, voluntary organizations and noted citizens, it scrutinized projects documents and gave recommendations to state governments that proposed infrastructure and development projects (Pal, 1979).

It was during Mrs. Gandhi's tenure that the Indian constitution was amended to adopt environmental protection as one of its articles. The 42nd amendment made to the constitution in 1976 is one of the earliest examples of its kind (Banham & Brew, 1996; Ramakrishna, 1985). As stated in chapter 3, the amendment transferred forests and wildlife from the state list to concurrent list giving the central government powers to protect them. On her return to power after the general elections in 1980, she set up the Department of Environment in line with the recommendations of the Tiwari Committee (C. M. Abraham, 1999). The Department was under the Prime Minister's direct charge, and it was turned into a full Ministry by 1985. This was the only Ministry at the Central Government made up of scientists and administrative staff (Guha, 2006). As shown in chapter 3, the central government used environmental laws to centralize the power to manage natural resources in rural areas such as forests towards national development.

As the Department went about crafting new environmental regulations and implementing them, the agenda of scientific environmental management brought both authority and legitimacy to the central government's development policy. This was intended to mark a shift from the "development decades", as Ramachandra Guha calls the period just after India's independence. The central government's new responsibilities included environmental appraisals of projects proposed by different agencies at the state and central levels (Ramakrishna, 1985). At first the Department of Environment faced opposition not only from state governments who understood these regulations as an imposition on them, but also from other Ministries who viewed the Department as a competitor rather than a collaborator. The first EIA guidelines that would be applicable on water management and energy projects were seen as "obstructionist". As Dr. Maudal, who was in charge of implementing the guidelines put out by the Department on river valley projects observes, "the

administrative and decision-making process is biased against innovative and dynamic decision-making” and that “anything new becomes suspect and dubbed as undesirable”. The Ministry argued that the guidelines were introduced for objective decision-making rather than for “Environmental protection for sentimental reasons...” Through EIAs, the environmental costs of projects were to be assessed and decisions were to be based on these informed positions. The guidelines included a comprehensive list of the potential environmental costs of river valley projects. As the primary author of these guidelines, Dr. Maudgal held the view that “short term gains, at the cost of the natural environment, may be tempting but can only end up in disaster” (Maudgal, 1985). Clearly, the government was committed to the goal of economic development and it held that the “Development of water resources is a major challenge to be accomplished in an environmentally sound manner...” The spate of new environmental regulations and decision-making procedures designed during this period, of which the EIA is prominent, shows that scientific environmental management was adopted as a strategy by the central government for economizing natural resources in the interest of state- led national development.

EIA regulation in India

It took another decade after this period of centralized environmental decision-making for India to institute a multi-layered system of participatory decision-making for development projects. In 1991, India opened up its economy to globalization. Many core sectors of the economy were privatized. By the 1990s, development projects were being undertaken not only by public sector companies at the state and central levels, but private players were making investments in dams, mines, power, roads and other infrastructure projects. Many liberalizing economies in the world sought to “regulate” development through institutionalized procedures. (Asher, 2009) India’s national government like those of many developing countries was in a situation of having to redefine the role of the state as a facilitator and regulator of development rather than an implementer of projects. As India’s national commitment to the UNCED Conference in Rio in 1992, also called the Earth Summit, Environment Minister Kamal Nath issued a National Conservation Strategy and Policy Statement on Environment and Development (NCSPS). It established that India would pursue conservation and development as twin national goals. Section 4.1 of the Statement

said that “redirecting the thrust of our developmental process” was needed to fulfill the basic needs of the Indian population. According to the government, conservation of resources would allow for “the sustainability of development for the present and in the future” (Ministry of Environment and Forests, 1992b). The identification of costs and benefits of projects became all the more necessary under liberalization, as the costs of impacts would have to be borne by the government while the private investors earned the benefits. This two-pronged action of being a facilitator and regulator is peculiar to the governments of developing countries committed to the dictum aptly summarized as “environment must not be ignored but development cannot be impeded” (Biswas & Agarwal, 1992).

4.3 PEG and Neoliberal Development in India

In this section, I present the experience of legalized EIA implementation in India since 1994. The implementation of EIA based approvals of development projects brought together state and central government ministries, technical experts, civil society actors, affected communities and international aid organizations and financial institutions. Thus I argue that the legally mandated EIA system in India can be seen as a boundary separating the discretionary, centralized state led developmentalism and participatory politics of neoliberal development in India.

Banham and Brew provide a useful review of the early development of the EIA process in India within this policy context of economic liberalization and growing transnational environmentalism (Banham & Brew, 1996). Following the enactment of the Environment (Protection) Act in 1986, some categories of projects loosely identified as ‘mega projects’, and undertaken by the private or public sector, required an environment clearance from the Ministry of Environment and Forests (now officially called the Ministry of Environment, Forests and Climate Change, hereafter referred to as Environment Ministry), while others listed in Schedule II of the Notification S.O. 85(E), dated January 29, 1992, required an environment clearance from the State Government (Ministry of Environment and Forests, 1992a). Since there was no environmental expertise in the other Ministries, the scientists of the Impact Assessment Division of the Environment Ministry along with Committee of Experts studied the impacts of the proposed projects and provided the required information to

the Ministry's Expert Appraisal Committee for decision-making on the approval. This process, according to Banham and Brew, lacked independent review, clear procedures and mechanisms to influence project design and adequate number of trained experts (Banham & Brew, 1996).

Following global trends in the need for environmental management and conservation strategies to regulate neoliberal development, a comprehensive EIA Notification was drafted by the Environment Ministry in 1994 (Ministry of Environment and Forests, 1994a). Through this legal instrument, mainstream development seemingly adopted the progressive elements of information, participation and accountability into its fold. However, The notification was a subordinate legislation as it was drafted not by Parliament, but by the Executive, using the powers delegated to it by the Environment (Protection) Act (EPA) of 1986, to enact rules and laws¹². With no parliamentary oversight to provide stability or vision, it was amended twelve times up to 2004 and then comprehensively 'reengineered' in 2006 (Menon & Kohli, 2009b). This is elaborated in the following section of this chapter. The Notification "delegated" the responsibility of studying the project from an environmental perspective and identifying potential impacts to the project proponents. This led to the adoption of a consultancy based system to commission EIA studies. The Ministry held supervisory and review functions in this EIA process. Under the 1994 Notification, only the MoEF had a role to review the EIA reports of projects. However, this centralization of approval-granting powers came under question by state governments led by powerful regional political parties that had come to power since the 1980s.¹³ This division of responsibilities was also sought by businesses. A centralized system of project approvals was seen to stall projects and cause delays (Govindarajan et al., 2002). When the notification was amended in 2006 this approval-granting role has been

¹² Section 1 of the EPA gives powers to the central government "to take all such measures as it deems necessary or expedient for the purpose of protecting and improving the quality of the environment and preventing, controlling and abating environmental pollution." Section 3 gives overarching powers to the Central Government and to the Ministry to take measures to protect and improve the environment.

¹³ This is based on the information received by Ms. Kanchi Kohli from the Ministry of Environment and Forests through a Right to Information Application filed in November 2005. The information contains submissions made by 13 state governments on the draft EIA Notification, 2005 on how to operationalize EIA processes at the state level. The states of Tamil Nadu, Himachal Pradesh, Gujarat, Maharashtra and Odisha made specific suggestions for the decentralization of the EIA process.

shared with the State Environmental Impact Assessment Authorities (SEIAA), the regulatory authorities at the state level.

Structure of the EIA process

The structural design of the EIA notification is made up of a series of steps that are to be undertaken to itemize, predict and measure the environmental impacts of proposed projects. The legal process laid out by the notification involves four distinct steps: screening, scoping, public consultation and appraisal. Once the four-step process is completed, a decision regarding whether to grant approval to the project or not is taken. The approval is called an environmental clearance (EC) (Ministry of Environment and Forests, 2006a). As noted by Weston, the sequential arrangement of the EIA procedures has been a symbol of its 'scientific' nature and method (Weston, 2004).

Screening is the first step in the process to identify if the project comes under the purview of the notification. As per the 1994 notification, projects above a certain investment needed to go through the EIA process. These were 29 kinds of projects listed in Schedule I of the Notification, which would be assessed by the Ministry. When the EIA notification was amended in 2006, it listed the projects coming under the EIA notification as Category A and Category B projects. All category A projects are to be assessed by the central government by the Ministry of Environment and Forests (MoEF) and category B projects are to be assessed at the state level by newly formed State Environmental Impact Assessment Authority (SEIAA). All Category B projects are treated as Category A if the project is to be located within ten kilometres of a national park, sanctuary, ecologically sensitive area or a state boundary. Category B projects assessed by the SEIAA can be further segregated as B1 or B2 type. B1 projects are required to go through all the four steps of the EIA process while B2 projects do not have to go through the remaining steps. The guidelines on how to determine whether a project is B1 or B2 were issued by Environment Ministry in December 2013.

The second step of scoping lists out the items that need to be studied to predict the environmental and social impacts of projects. This list is presented in the form of a

Terms of Reference (ToR). The applicant proposes the ToR. The final ToRs are drawn up by a group of experts called Expert Appraisal Committees (EACs) at the Centre or State Expert Appraisal Committees (EACs) during their meetings that average once a month. If needed the draft ToR provided by the applicant is modified based on the information provided in the application for environmental approval and on the basis of a site visit that may be conducted by the EAC. Once the Ministry approves a ToR, it is given to the applicant /project proponent. The proponent then commissions a paid consultancy for the preparation of an EIA report based on the ToR. Under the 1994 Notification, the project had to produce a final EIA report at the end of this step. However, after the Notification was amended in 2006, project proponents are allowed to submit a “draft” report at the end of this step. The draft is to be revised by the end of the four-step process.

The third step in the EIA process is the public consultation. It is organized to ascertain the concerns of locally affected people and responses of those “with a plausible stake in the project” (Ministry of Environment and Forests, 2006a). As per this clause a public hearing would be held by the State Pollution Control Board (SPCB) to obtain the views and suggestions of the public on the basis of the EIA report drafted by the project. The clauses for public participation in the EIA process have undergone numerous changes since then. The implications of these on the EIA process are discussed in the next section. Public hearings are to be video recorded and officially documented in writing by the agency conducting the hearings. The minutes of the public hearings are to be read out to all present in the audience to complete this step of the process. The public consultation norms can be seen as a “one size fits all” regulation of communication (Macnamara, 2017).

The final step in the EIA process is the appraisal of the project by the group of experts. It involves the review of the EIA report, the Detailed Project Report, the Environment Management Plan and the Disaster Management Plan (DMP) as well as the documents and videos generated through public participation. They could seek any additional information from project authorities before taking a decision on whether the project should be recommended an approval. The experts recommend the clearance or dismissal of the project to the Ministry of Environment and Forests or the State Environmental Impact Assessment Authority (SEIAA) located at the state level.

They also suggest the conditions that should be imposed on the project if an approval is being recommended. These conditions are for the mitigation of environmental and social impacts of the project.

If granted the environmental approval is valid for 10 years in the case of river valley projects (hydropower and irrigation), 30 years for mining projects and 5 years for all other projects (Ministry of Environment and Forests, 2006a). This validity is for the projects to initiate construction activity and not for their completion. After receiving such a clearance, the project proponent is required to submit a report every six months on the compliance of the conditions of the approval. The regulatory authorities, i.e. the Ministry or the SEIAA are also required to prepare a half yearly monitoring report on the project. Until recently, the responsibility of monitoring projects granted approvals was only on the six regional offices of the Environment Ministry. From 2014, both SEIAAs and the Regional Offices have been given the responsibility to issue show cause notices as well as revoke environment clearances of projects if they do not comply with the approval conditions (Ministry of Environment and Forests, 2014).

Today, the implementation of development projects in India requires obtaining several approvals from various ministries and departments. Prominent among these is the “environmental clearance” or approval. This process involves a technical assessment of the potential environmental and social impacts of projects, consultations with locally affected people and an expert appraisal of these along with environmental management plans, mitigation measures and disaster preparedness. The official procedures such as the preparation of the Environment Impact Assessment (EIA) report, the conduct of environmental public hearings and the final decision-making on the project, are regulated by law. Numerous guidelines, government orders and executive directions have been issued for the implementation of the EIA process. All of these legal procedures, institutions and committees, consultants and environmental experts form the institutional architecture of environmental governance in India.

According to the review by Banham and Brew, for the period between 1990 and 1994, between 150 and 300 projects were considered annually for environmental

approval. On an average 40 % projects were approved, 20% of them were rejected and 40% were returned. They conclude that the rejections were on environmental grounds and projects were returned due to lack of adequate information to make an environmental assessment. For river valley projects presented to the MoEF for approval, only 28% projects were accepted, 50% were rejected with 22% projects were returned (Banham & Brew, 1996). There has been a major change in the situation since and the statistics on EIA reveal the extent of state control on natural resources. Since 1994, the total number of projects that have been granted environmental approvals by the central Ministry alone have exceeded 16,000.¹⁴ Annual rate of approvals are in the hundreds and the rate of approval of EIAs by the central Ministry is nearly 99% indicating that the EIA process hardly filters out any application as undesirable (Dutta, 2009). The government is under pressure from its own economic targets to “fast track” environmental approvals. The time taken for the processing of approvals after the required documents are presented to the Ministry has reduced from several years to less than two months in the interest of economic growth and facilitating investments (Padma, 2014). In case of projects with an investment above Rs. 1000 crores (10 billion), a cabinet committee headed by the Prime Minister determines the time for approvals (S. Ghosh, 2013).

From the first EIAs done in the 1980s, the practice and discourse of EIAs for development have been constructed through their collective experience. EIA methods and exercises have been repeated to the extent that they have gained procedural regularity and consistency (Bauchspies, Croissant, & Restivo, 2006). Since the 1994 Notification came into force, the EIA process has systematically covered large numbers of private and public projects of different kinds with varying levels of technology and impacts. They are undertaken for projects located in all areas of the country irrespective of the constitutional safeguards for areas and their people such as the Schedule VI areas dominated by tribal or ‘*adivasi*’ communities (Menon & Kohli, 2015).

¹⁴ This is according to the data provided by the environment ministry on its website <http://environmentclearance.nic.in>. When accessed in September 2019 the website showed 14807 ECs granted up to July 3, 2014 and 2000 ECs granted after July 4, 2014.

This process is seen to have the capability to suggest, purportedly with reasonable accuracy, the likely impacts a project will have during construction and the operational life of the project in question. The EIA became the government's basis for taking decisions on private and public investments, approving projects with potential environmental and social impacts and apportioning costs for safeguards. The stated goal of the EIA in liberalized, developing economies such as India is to integrate environmental concerns into development and make the two compatible. In practical terms, it is to account for the externalities of neoliberal economic growth assuming that these can be measured and valued.

The role of expertise in Indian EIAs

As stated earlier, dam building was the first sector in India to require EIAs as an administrative requirement for decision-making (CWC, 1975). The Central Water Commission (CWC) drafted EIAs for public sector dam projects since the late 1970s. When the EIA was officially turned into executive law in 1994, dams were listed in Schedule 1 of the notification. All river valley, hydropower, irrigation and flood control projects with an investment of or over Rs. 50 crores (0.5 billion) had to mandatorily go through the four-step EIA process. The investment limit was increased to Rs. 100 crores by an amendment in 2002 (Ministry of Environment and Forests, 2002). However, an exemption was made for "projects relating to improvement work" such as widening and strengthening of existing canals.

According to information provided by the MoEF, 471 river valley projects were granted environmental clearance between 1986 and 2006, with the maximum of 121 in the southern region covering the states of Andhra Pradesh, Goa, Karnataka, Tamil Nadu, Kerala, Pondicherry and Lakshadweep. (Kalpavriksh, 2006) Of these 83 projects were granted environment clearance by the Ministry during the period of 2000-2005 (Menon & Kohli, 2009a). When the EIA notification was amended in 2006, river valley projects with a generating capacity between 25 and 50 MW and or less than 10,000 ha. of cultivable command area were handed to the newly constituted State Environment Impact Appraisal Authorities (SEIAA) unless the project fell in whole or part "within 10 km from the boundary of: (i) Protected Areas notified under the Wild Life (Protection) Act, 1972, (ii) Critically Polluted areas as notified by the

Central Pollution Control Board from time to time, (iii) Notified Eco-sensitive areas, (iv) inter-State boundaries and international boundaries”. If they did, then the project needed approval from the Environment Ministry (Ministry of Environment and Forests, 2006a).

From 1980 onwards, the central government made numerous efforts to educate other ministries, sectors and project proponents to conduct EIAs by producing guidelines, handbooks and manuals. There are sector specific EIA manuals such as the “Guidelines for Environmental Impact Assessment of River Valley Projects” (Maudgal, 1985) as well as compilations of the EIA notification and amendments such as the Handbook of Environmental Procedures and Guidelines that include the flowchart of the four-step process (Ministry of Environment and Forests, 1994b). These have been to educate potential applicants and departments about the process to be followed. In the years after the EIA process was first instituted, official EIA expertise in India was held by a select group of government and semi-government institutions such as the Wildlife Institute of India (WII), National Environmental Engineering Research Institute (NEERI) and The Energy Research Institute (TERI), to name a few. They were involved in doing EIAs for projects as well as drafting the handbooks and manuals on EIAs. Due to its institutionalized procedures for the production and circulation of environmental facts that govern the lives of people and their environments, EIAs today are a “technology of power” (Foucault, 1977). As pointed by Fisher, particular experts “come and go but the discourses and practices” of the discipline “have a life of their own” (Fischer, 2000).

The Indian EIA regulation relies on consultants trained in EIAs to conduct assessments of environmental and social impacts of projects and suggest measures to mitigate them. Some consultants believe that EIAs that predict impacts well also ensure that their projects are not held up in the Ministry (Mathur & Rajvanshi, 2001). However, this is nearly impossible to achieve. As stated earlier in this chapter, the consultants are tied to the project proponent’s goals as they are paid by the proponents. This presents a ‘conflict of interest’ in doing EIAs that objectively report the potential impacts of projects. This funding relationship has been held as a primary reason for several poor quality EIAs done in the past. Consultants are also bound by confidentiality conditions due to which they are prevented from making their data

publically available. They often have to lobby at the Environment Ministry to get the project approved, as this task may be an explicit requirement in their terms of agreement with the project proponent. This has created a perverse incentive for bad EIAs.

The direct funding of EIAs by project developers and the latter's influence on the data analysis and conclusions have been raised on several occasions in environment policy discussions. The Ministry of Environment and Forests issued a note titled 'Reforms in Grant of Environmental Clearances' in 2004 following the recommendations made by a consultancy firm, ERM group, on ways to improve the EIA notification, 1994 (Ministry of Environment and Forests, 2004). ERM had suggested separating consultants from project developers by delinking financial ties between them and peer review of EIA documents. Although a new notification was introduced in 2006, these changes were not made (Menon & Kohli, 2007). In 2011, the government set up a process of certification of EIA consultants through a voluntary accreditation scheme under the Quality Council of India. While consultants have been held responsible for poor EIAs, those among them who have been rejected certification or blacklisted have raised questioned the EIA expertise within the Ministry (Anon, 2014c).

Members to the central and state Expert Appraisal Committees that review the EIAs and recommend approval or rejection of the project are selected for appointment. The EIA Notification of 1994 carried a Schedule III, which laid out the composition of these Expert Committees. They were to include experts from the fields of Social Sciences/Rehabilitation, Ecology and Environmental Health besides other subject experts related to land use planning, conservation and pollution control. It was to also include a representative of a Non-Governmental Organization (NGO) or a person concerned with environmental issues. The Committee was to be headed by an "outstanding and experienced ecologist or environmentalist or technical professional or wide managerial experience in the relevant development sector (Ministry of Environment and Forests, 1994a). In 1994- 95, environmentalist Ashish Kothari served as a member of the Expert Committee for River Valley Projects to assess dam EIAs and recommend approvals or rejection of the project. He states that close to 300 projects were cleared between 1978 and 1995 (A. Kothari, 2000, 2003). Of these, several dams such as the Sardar Sarovar Project on the Narmada river and the

Bilaspur project in Rajasthan were in violation of the EIA procedures as considerable investments were made and construction undertaken even before the projects were approved on environmental grounds (A. Kothari, 2000).

In an effort to make the EIA process meaningful, the above Committee recommended that no new dam projects be granted approval unless the compliance level of the conditions approvals granted by the Ministry is brought down from upwards of 90%. This Committee was summarily disbanded (A. Kothari, 2003) and the dam projects were allowed to continue with construction activities despite their legal violations. According to Kothari, since then, the Expert Committees have been packed with compliant individuals who have acted as “rubber stamps” for the government’s agenda of facilitating development (ibid).

The Expert Appraisal Committees also began to have more ex-bureaucrats from water, power and mining ministries who brought their sectoral expertise to the Committees rather than any environmental knowledge. In 2004, the Member Secretary of the Ministry of Environment and Forests, Dr. Pradipto Ghosh put out a note defining an expert. This note institutionalized the practice of using retired bureaucrats as experts on the EIA appraisal committee. The note guided the Ministry on who to appoint to these committees as it was felt that the Ministry paid “inadequate attention” to the selection of non- official members to these Committees and the advice or recommendations it received from the Committees was “suboptimal” (Ministry of Environment and Forests, 2004). As per the new guidelines, experts were defined as professionals with advanced University training and degrees and at least “15 years of work in the relevant field”. The guidelines stated “Expert Bodies may comprise only of experts and professionals” thus disallowing environmentalists and members of NGOs in these committees. However, it did not bar mining, dam building and nuclear power experts in it who all qualified as experts and professionals. This created a ‘revolving door’ for development administrators, heads of companies and technologists to come through as expert regulators of the environment. While the government saw this as drawing expertise to environment regulation, environmental groups viewed this as “conflict of interest” as many ex-bureaucrats who would approve projects had designed them during their tenure in government. This came to a head in 2009 when a retired secretary of the Ministry of Water Resources, P. Abraham, who was also serving on the board of several power

companies, was made the chairperson of the EAC for river valley projects. During his tenure in the EAC, dam projects in which his companies had direct involvement, were approved. Through the state appointed Expert Committees, the environmental decision-making process had been overrun by individuals with mainstream developmentalist ideologies based on resource extraction (Kalpavriksh, Toxics Link, & NCPRI, 2005)¹⁵.

The EIA based approval process has justified and approved many high impact projects. Dam projects have been granted clearances based on EIAs even though they cause displacement and forest loss. These projects are also legally bound to mitigate the loss to ecology and biodiversity through measures such as Compensatory Afforestation (CA) and creation of protected areas. Such measures impose further burdens and restrictions on land use by local residents. These measures suggested by the Expert Committees based on the impacts stated in the EIA are not evaluated of their effectiveness to offset losses. There is also no mechanism in the EIA process to understand if these are feasible to undertake or not (Mathur & Rajvanshi, 2001). As a result, experts approve projects and their impacts are borne by citizens.

Many official decisions based on the EIA process have been contested in courts and the two tribunals that were set up specifically to hear cases challenging the decisions of environmental regulators, the National Environment Appellate Authority (NEAA) that existed from 1996 to 2010 and the National Green Tribunal (NGT) since 2010. The orders and judgements of these courts have repeatedly held that the expert committees failed to “apply their mind” to the projects and have sent cases back to them for review and reassessment (S. Ghosh, 2013). Court judgements have also charged the Ministry with circumventing statutory clearance provisions to expedite dam project approvals. In the aftermath of the catastrophic floods of 2013 in the Himalayan state of Uttarakhand, the Supreme Court of India directed that no further environmental clearances be given to dam projects in the mountain region. The Court ordered another committee to look in to whether existing hydro projects or those

¹⁵ This case of conflict of interest was filed before the National Green Tribunal, a specialized court for environmental matters in India. See Application no 116 (THC) of 2013, National Green Tribunal Judgment dated July 17, 2014, Kalpavriksh & Ors v/s Union of India & Ors.

under construction had exacerbated the disaster.¹⁶

Environmental Public Hearings in India

As stated earlier, the EIA based decision-making process was deployed to bring legitimacy to the centralized developmentalist ideology of the state. Under Mrs. Gandhi's leadership, government and technical experts and members of the public or civil society were selectively included in decision-making on specific project approvals. This was the early phase of participatory environmental decision-making in India. This form of participation underwent changes when the formal executive law was designed. The EIA Notification of 1994 set up the environmental approval process as a dialogue between two parties; project proponents, be they government or private, and environmental experts. There were three quick amendments to the notification on the question of the role of the "the public" in this process. According to Kandaswamy, in the January version of the 1994 Notification, any member of the public could have access to a project's EIA report, by March this was amended to give access to "any affected person" and in May the amendment stated that experts would review the EIA report and if they found it necessary, a public hearing may be held (Kandaswamy, 1998). Public Hearings were thus introduced to the EIA framework of decision-making. These amendments subordinated the role of the public to the role of experts in the EIA process. They were an optional or discretionary step for projects with stated severe impacts or large displacement. Public participation, in this form, was seen as a barometer of public sentiments about proposed projects or as a mechanism of conflict management, to be exercised in particular situations. Even if the experts trusted their own judgments regarding the project and saw no reason to engage with citizens, the lack of public participation in certain cases was seen as a threat to decisions taken as the public could exercise their right to appeal against the project in courts (Kandaswamy, 1998). Under this format few public hearings were held but there was no systematic process for public participation in EIA (Sinclair & Diduck, 2000).

¹⁶ Supreme Court of India judgment dated in August 13, 2013, Civil Appeal No. 6736 OF 2013 @ (Special Leave Petition (C) No.362 OF 2012), Alaknanda hydro Power Co. Ltd. v/s Anuj Joshi & Ors.

In April 1997, public participation was changed from a discretionary to a mandatory procedure of EIA based decision-making. Every project that required an environmental approval under the EIA process had to conduct a public hearing. Schedule 4 of the EIA Notification laid down the process to be followed for conducting public hearings. This was a period of political and administrative decentralization and adoption of public participation models in many countries. A World Bank report states that decentralized approaches to governance were adopted to ensure political stability as well as improve service delivery (The World Bank, 2000). Decentralized governance was seen as a “countervailing force” against market globalization (UNDP, n.d.). There was a push towards decentralization of governance through the 73rd and 74th amendments to the Constitution by the Indian Parliament in 1992. The promulgation of the Panchayati Raj (Extension to Scheduled Areas) Act (PESA), 1996 extended self- governance through traditional village councils to areas dominated by tribal communities.

A significant part of the public hearing process was access to information. The procedures for public hearings made the executive summary of EIA reports accessible to citizens through specific government offices. By 2002, it became mandatory to provide access to the full EIA reports. Since the entire EIA report and the summary became the basis of discussions between the project proponents, the consultants, the government and the public, it raised the public hearing forum to a process of informed public review of the project, its goals and assumptions. The hearings introduced multiple opinions about the project. If issues raised at the public hearing were not resolved, the official decision-making on the project became long drawn and contentious. The public hearing forum also opened up the decision-making process to critiques and demands for greater space for participation. Though the implementation of decision-making processes under the EIA notification rests with the regulator, that is the Indian Ministry of Environment, Forests and Climate Change, the EIA is one of the most ‘socialized’ regulations in India (Menon & Kohli, 2016). The public hearings were a window into the power dynamics involved in environmental governance. Numerous affected communities and environmentally concerned citizens have taken great interest in understanding how EIA documents are produced and their role in promoting mainstream developmentalist ideologies. The collective actions by public hearing participants on the structure and outcomes of EIA based decision-

making has resulted in both policy reform and grassroots politicization of neoliberal development in India (Saldanha, Naik, Joshi, & Sastry, 2007).

For fear of delays and rejections, some project proponents bypassed the public hearing step in the EIA process altogether.¹⁷ Vagholikar, who studied the EIA process for mining projects, states that companies as well as other sectors felt anxious about the effect of the public hearings on their project approvals. The mining sector actively lobbied against public hearings (Vagholikar, 2005). Investors complained that public participation caused major time “delays” and financial costs to the investors (Govindarajan et al., 2002). As public hearings became a popular forum for citizens and affected people to voice their concerns regarding proposed projects, investors came to view them as hurdles. The government, financial media and associations of companies and businesses gave the environmental clearance regime the status of a “bottleneck” or a roadblock to economic growth. As stated earlier in this chapter, the Govindarajan committee on investment reforms set up by the central government recommended the necessity “to simplify the procedures for grant of approvals, reduce delays & ground level hassles and simplify the regulation of projects during their operational phase” (Govindarajan et al., 2002). Project proponents claimed that the four-step process of granting environmental approvals to projects, gave the government of the day undue powers to withhold, delay or reject approvals to projects selectively and this queered the pitch for corporate players. The Environment Ministry in charge of granting approvals was accused of arbitrary decisions, favouritism and corruption (Saldanha et al., 2007). There was pressure from civil society and from investors from the public and private sector to reform the EIA system.

A shifting public space

The amendments to the EIA notification in 2006, also called “reengineering” was an exercise in regulatory capture by the very actors the state claimed to regulate. In 1998, the Environment Ministry was granted a Technical Assistance (TA) project by the World Bank build “Environment Management Capacity Building (EMCB)”

¹⁷ High Court of Kerala Judgment dated October 17, 2001 in O.P. No. 3851 of 2001, Ravi S.P. & Ors v/s State of Kerala & Ors.

(Saldanha et al., 2007). Between 2001 and 2006, a series of consultancies and meetings were conducted to realize the mandate of the project that included a review of the EIA process (Menon & Kohli, 2007, 2010). The review included several consultations with corporate associations such as Confederation of Indian Industry (CII), Federation of Indian Chamber of Commerce and Industry (FICCI) and Associated Chambers of Commerce and Industry of India (ASSOCHAM). At the end of these consultations, the EIA Notification was 'reengineered' and a new one was instituted in 2006 (Ministry of Environment and Forests, 2006b). The process of drafting the new notification, the actors involved and most importantly, the content of the new notification skewed the law in favour of corporate entities whose projects were to be regulated by this law.

The EIA notification 2006 brought several changes to the legal process of grant of environmental approval to projects. These included crucial amendments to the procedures for public participation in EIAs. Firstly, it restricted participation of concerned citizens. As per the new procedures, only locally affected people or "those with a material stake in the project" are allowed at public hearings. Those who are not likely to be directly affected by the project are only allowed to give their views to the Ministry in writing. They are not allowed to participate by being physically present at the hearing. Secondly, the new notification allowed only a draft of the EIA report to be shared 30 days prior to the public hearing rather than the final report. The comments received on the draft through these public consultation processes are used to finalize the EIA report. Potential areas of conflict, public demands and expectations are identified through this process and changes are made to the draft EIA report to incorporate public views. This has transformed public hearings from a forum to review the project into a forum to review the project's EIA report. Thirdly, the entire proceedings of the public hearing are to be video recorded and the minutes of the hearing to be prepared by the District Collector and read out to all present. The Expert Committee is required to review these materials of the public consultation that are produced through official documentation. These materials do not determine the decision but may influence it. This reduced public hearings into a process of "public consultation" that is not binding on the government's final decisions. Finally, as per the 2006 notification, a public hearing need not be held if the agency in charge of conducting it feels that it cannot be held due to the "local situation" (Ministry of

Environment and Forests, 2006a). This made public hearings discretionary again. These changes altered the status of public hearings as a decisive forum for project review and public consent to a watered down consultative meeting.

Environmental public hearings have been litigated extensively. One common complaint was that public hearings were held at venues that were difficult for affected people to reach or access and therefore limited their participation (Sinclair & Diduck, 2000). Prominent among the cases that addressed this problem is a 1999 judgment of the High Court that lays down unambiguous procedures for conducting environmental public hearings.¹⁸ It covered a range of issues such as the selection of a venue that allows maximum participation, procedures of notifying the public regarding the event and its purpose and the timely availability of all the EIA documents of the project. The National Environment Appellate Authority (NEAA) in an October 2008 order observed that *“in view of the increasing environmental awareness of the Public”* the Environment Ministry and its committees ought to *“record the reason for their recommendations in an appropriate manner, especially in respect to public opposition to project”*¹⁹ In this order, the NEAA gave a specific direction that:

“the MoEF and its various Advisory Committees should indicate in their minutes/proceedings/ orders the link between the issues raised and the decisions thereon, and whenever the public objections are involved, they should clearly indicate such public concerns have been addressed while arriving at final recommendations/decision.”

Although the courts have held that the information generated through public participation needs to be considered seriously in the final decision- making, there is little evidence that this is done. A recent case filed in the National Green Tribunal revealed that the public hearing videos and submissions made by locally affected

¹⁸ High Court of Gujarat judgment dated March 2, 2000 in Special Civil Application No. 8529 of 1999, Centre for Social Justice (Jan Vikas) v/s Union of India.

¹⁹ High Court of Delhi judgment November 26, 2009 dated in Writ Petition (Civil) No. 9340/2009 & CM APPL Nos. 7127/09, 12496/2009, Utkarsh Mandal v/s Union of India & Ors.

people may not have been considered in the project decision making process of the Ministry.²⁰

Irrespective of the changes brought about to public participation procedures, public hearings as a forum have forced the collision of development decision makers and those affected by these decisions. This collision has exposed EIA reports as ‘shoddy’ documents. Many official decisions have favoured high impact projects despite the public criticism of EIAs and total opposition at public hearings. These decisions and the stack of litigation in courts against them have disenchanted many of the view that the EIA process is meant for better environmental decision-making.

4.4 A Site for Reflexive Development

The EIA based decision-making was introduced in India in the context of political centralization of authority and power on the one hand and growing social and environmental conflicts on the other. The government hoped that by deploying experts to investigate and predict impacts and setting up public hearings to manage conflicts, mainstream developmentalism would be made a frictionless enterprise. Political ecology and environment management approaches to understand PEG elaborate on its objective as one of generating consent. According to these approaches, the purpose of the EIA is for “informing, influencing or integrating” diverse opinions and views.

The Indian experience with EIA based decision-making shows that while the intention of public participation may be to validate large-scale developmentalist interventions, these intentions do not necessarily succeed (Scott, 1998). Although PEG frameworks like the EIA may be seen as a tool for “depoliticizing development” (Ferguson, 1994), the concepts of agency and reflexivity are useful to problematize this critique of state power. PEG forces the collision and reshaping of expert knowledges. The engagement of citizens with EIAs and their efforts to open and widen it beyond its circumscribed zone necessarily expands the scope of deliberation. It not only opens up the agenda setting for the discussions but also pushes for alternatives that exceed the options

²⁰ National Green Tribunal **judgement** dated December 13, 2013 in Appeal No. 9 of 2011, Samata & Anr v/s Union of India & Ors.

placed before it. In situations where PEG acts as a forum for negotiation, it goes beyond the limits of the process and produces alternatives beyond the EIA. In effect, PEG creates space for reflexivity in deliberations on development.

However in contexts where the EIA is pushed to extract consent, the instrumentalist intentions of the state is revealed, generating opposition. The ‘disorderly’ and engineered procedures to generate consent mobilize public action and political participation in development (Marshall, Goodman, Zowghi, & da Rimini, 2015). Public participation in such contexts creates various political resistances to neoliberal development. EIA opens up the space for strategic possibilities for the poor who otherwise have few options to voice their dissent against this form of development. PEG offers “a critical negotiation of development” by opening up social debates on its “goals and methods” (Nederveen Pieterse, 1998).

PEG also expands the public sphere by bringing in public institutions that are previously left out of the zone of participation. These include the courts, the media and universities and other agencies. Bostrom argues that participatory governance could allow the reshaping of more diffuse power struggles outside the hierarchy of the state (Bostrom, 2003). In India, public participation in EIA over three decades has mobilized a new form of “politics over nature” and has generated demands for the democratization of development.

4.5 Conclusion

In this chapter, I critically analyze the concept of Participatory Environmental Governance (PEG) by discussing the global literature on EIA, its most well known form. I also show the emergence and practice of EIA based decision-making in India within India’s economic development trajectories. Through this understanding of EIA processes within India’s developmental history, I argue that PEG cannot claim to be an objective and rational procedure for assessing impacts of projects. Rather, EIA based governance is a politicized tool for development.

In this chapter I also show that though the EIA and public participation procedures are deployed to generate consent for officially designed development projects, they fail to do so for the government. Instead they generate resistance, expand the public sphere

and create space for the generation of alternatives. By focusing on the generation of deliberative opposition and mobilization around EIAs and public hearings, I conclude that the democratic objective of public participation in technical decision-making is achieved. In effect, EIAs succeed because they fail for their proponents.

CHAPTER 5

EIAS: THE EPISTEMIC MACHINERY OF ENVIRONMENTAL KNOWLEDGE PRODUCTION

In the previous chapter, I showed that in India, the Environmental Impact Assessment (EIA) has been a part of the administrative decision-making on dam projects since the 1980s and that the EIA has been the basis of environmental regulation of all large development projects since 1994. Its introduction to the decision-making process marks a shift from the use of the economic Cost Benefit analysis (CBA) as the basis of these decisions. The CBA based decision-making had an implicit understanding that a proposed project was worthy of state investment if the public benefits from the project were seen to be greater than the economic burdens caused by the project (Singh, 1997). The CBA as practiced in India did not account for environmental consequences of projects. Today's practice of EIA based regulatory decision-making attempts to create "win-win" projects. This is seemingly done by identifying the potential impacts of the proposed projects on the environment through detailed environmental impact assessment reports and finding ways to manage and mitigate them to the extent possible. EIAs represent the policies of ecological modernization and are deployed as tools that purportedly allow governments to regulate, manage and mitigate the environmental problems in the interest of the economy (Hajer, 1995).

As shown in the earlier chapter, the management of environmental problems accompanying neoliberal growth is the official justification of the EIA exercise. However the strategic goal of the EIA is to get an Environmental Clearance or legal approval for developmental projects. Through its two decades of public life in India, the system of EIA based decision-making has been investigated extensively (Bedi, 2013; S. Ghosh, 2013; Arupjyoti Saikia & Vaghlikar, 2010). As stated in the previous chapter, various questions have been raised regarding who produces EIAs, what is their expertise to study environmental impacts in specific regions, what motivates them to engage in EIA processes and whether they present a 'conflict of interest' due to the 'revolving door' of experts between government, research institutions and industry. Concerns such as funding relationships between project

proponents and consultants, plagiarism and ‘cut and paste’ EIAs have also gained much attention. After two decades of experience of EIA based decision-making in India, it is simply not possible to speak of EIA procedures as scientific or value neutral.

In this chapter, I examine the strategies used by EIAs to constitute truths about people and places in one such region in India. With regard to how environmental knowledge is assembled in EIAs, various scientific methodological problems have been highlighted that result in poor baseline data and inaccurate information on environmental impacts of projects. Scholars have suggested improvements in the methods of data collection so that EIAs are better at identifying impacts (D. K. Agrawal et al., 2010; Berkes, 1988). However, an aspect that has not gained adequate scholarly attention in comparison to the role of EIAs in development globally is their power to produce environmental facts. What gives EIA the power to “constitute new subjects, territories, and especially socionatures”?²¹ What are the epistemic tools or internal logics that are relied upon by EIAs to produce environmental knowledge? EIA based decision-making is undertaken in almost all countries today, and despite the critiques of how they are put together and used in decision-making processes, they have gained in significance. In regions where communities have cultural attachments to the environment and depend on nature for their sustenance and livelihood needs, the EIA’s power to legitimate certain uses or nature over others assumes greater significance.

Documents are the paradigmatic “*artifacts of modern knowledge practices*” (Riles, 2006). They are subjects and objects of ethnographic research. According to Riles, to study documents is to also study how documenters themselves come to ‘know’. I undertake a thematic analysis of three EIA documents of hydropower projects proposed in Arunachal Pradesh- the Lower Subansiri, the Dibang Multipurpose and the Demwe Lower projects - to problematize the “scientific facts” that are crafted in these EIAs. Specifically, I show how EIAs turn lived ‘places’ in Northeast India into

²¹ A panel titled Powers of Environmental Impact Assessment was organized at the American Association of Geographers annual meet in 2012. The Panel’s Call for Papers outlined the four ways of understanding the role of EIAs as knowing, mapping, marketing and colonizing EIA.

socio-technical 'sites' for hydropower development. The technological framing of the region and resource for development produced through EIAs is crucial for India's energy expansion over the next twenty years. Through these discussions, I hope to foreground the political nature of this knowledge-making enterprise. From a comparative thematic analysis of these EIAs, we come to understand how official ethnographic practices (Middleton, 2011) are deployed for the production of environmental knowledge.

5.1 The Legitimizing Effect of EIAs

In order to engage in an epistemological critique of EIAs, it is important to understand the EIA network as a set of actors, practices and beliefs. Using an institutional analysis approach, Hironaka shows how the adoption of EIA in several countries was supported by the presence of domestic scientific infrastructure and institutions (Hironaka, 2002). These scientific institutions became engaged in environmental management roles in the neoliberal economy. Scholars have also pointed to the introduction of new actors and new roles for state and non-state actors in ecological modernization (Mol & Spaargaren, 2000). The implementation of EIA in India includes consultants, the Ministry of Environment and Forests and its several expert committees for the appraisal of EIAs. As stated in the earlier chapter, much of what is considered as official environmental expertise in India is generated within a select group of scientific institutions. They develop guidelines on doing EIAs as well as repeatedly win contracts to conduct EIAs for proposed projects. For example, National Environmental Engineering Research Institute (NEERI) was awarded a grant from the World Bank Technical Assistance Project to draft model EIAs for different sectors such as mining, hydropower and thermal energy projects (Saldanha et al., 2007). NEERI also conducts EIAs for private and public funded projects. These actors are the inventors of the practice of EIAs through their collective experience. The EIAs of Demwe Lower and Siang Lower dam projects state the use of "standard methods" developed by these institutions (Centre for Inter-Disciplinary Studies in Mountain & Hill Environment, n.d.; Centre for Inter-Disciplinary Studies of Mountain & Hill Environment, 2009)

These centres of EIA production are very apparent from the front cover of EIA documents. They carry the seals and logos of official recognition of these knowledge production centres that perform the function of authenticating the document. These constitute the “zone of qualification”, defined by Barry as “a technological zone in which the qualities of objects are assessed through a set of common standards” (Barry, 2006). These formats seen in every EIA give it an “aura of science” (Hironaka, 2002). This expression of qualifications could also provide authority to the decisions taken on the basis of these documents. As stated by Lee, reliance on such forms of authority are important “when other sources of authority are not clear” (Lee, 2018). Some EIAs have opening remarks from important people in government. High-ranking bureaucrats or Chief Ministers often draft the preface and it unambiguously states the importance of the proposed project to the government. In this form, EIAs work as a manifesto or as a tool for campaigning in support of a project much like government produced publicity material to popularize its government scheme. The preface could also include congratulatory notes to the entire team of experts on the project’s ‘success’ even before the project documents are put up for a detailed assessment. As a result, every EIA is presented as an objective statement of impacts even though it is at best a set of hypotheses.

The naming of projects is a deliberate act. At first glance, the names of the proposed hydroelectric projects are an indicator of purpose (*multipurpose* project) productivity (*mega* project), siting (*lower/upper* projects), or technology (*Run of the River* or ‘RoR’ projects) or material used in construction (*earthen* dam). However, these names are meant to also communicate that these projects would have small and manageable impacts. The use of terms such as mega or multipurpose indicate that the benefits of the projects far exceed human and environmental costs. Several of the projects proposed for the region are ‘Run of the River’ projects. Traditionally, this means that power is generated through the natural flow of the river without any restriction. However, the hydropower industry has adopted this term to describe some of the largest dam projects proposed in different parts of the Himalayan region.

Scoping determines what will be studied through the EIA. Scope is driven by the discipline represented by the research team, rather than by the interests of all affected parties. While the former may be appropriate in some situations, Berkes concludes

that it sets the stage for a scope which can be “narrow, elitist or irrelevant” (Berkes, 1988). Because EIAs are done for proposed projects, better options that may exist “in place” do not appear in the assessment. Therefore, the EIA is a pointer to the proposed project as the only way out towards progress. EIAs for hydropower development in the Northeast present every project as “the genie in the bottle”. It narrows the means and widens the ends of development, starkly the opposite of what Mosse identifies as good practice for development aid (Mosse, 2008). The project proponent, EIA consultant or governments that support EIAs are in no position to think of options that go beyond or do not include the project. As Fisher notes, what is feasible is curtailed by the choice of institutions (Fischer, 2000).

The borrowing of data for EIA purposes blurs the distinction between project proponent, EIA consultant and government. The chapter on methodology of the Dibang project EIA states “A substantial amount of data was available with NHPC, which was collected and utilized to the extent possible” (National Productivity Council, 2010). The acknowledgment in the Dibang EIA states that a “Nodal Group of Dibang Multipurpose Project” carried out socio-economic surveys in the “project affected area” and this was used to formulate a rehabilitation plan. The report acknowledges all the project staff for 'guidance' 'co-operation' and 'assistance'. It is not only parts of the report such as the socio-economic survey that are done by the hydropower project staff. As in the case of the EIA for Lower Subansiri, the Dibang EIA also draws heavily from data already collected by the existing water institutions such as the Central Water Commission and the Brahmaputra Board (WAPCOS, n.d.). The cooperation between the consultant, the project proponent and water bureaucracies in preparing the EIA assures the project a better chance of obtaining an environmental approval. Such an assurance is not generated through an objective or project neutral EIA.

The opening chapter is on the basic parameters of the project, usually with a table called ‘Salient Features of the project’. It is a clear communication of what is in focus. In this chapter, the project is already implanted in the site denoted by its latitude and longitude, altitude and distance from a place of reference, say the capital city. The EIA document contains a collection of chapters where each aspect of the region is presented separate from the others. The physical aspects of the site are disconnected

from the social and lived aspects of the place. In the EIA of Demwe Lower project, the chapter on socio-economic aspects comes after 12 chapters on the physical aspects of the region. The arrangement of chapters which foregrounds the physical attributes of the selected site for the project points to the underlying assumption shared by regulators and project developers that as long as the physical geographical space allows this project intervention, the human aspects which make it a place, a home (Tuan, 1977), can be made to accommodate the new entities or structures.

This practice has remained from the time EIAs were first drafted in India. EIA critics have sought for an integrated understanding of social and ecological systems, by which disciplinary boundaries are to be transcended (Palmer, 2010). Berkes strongly recommends that impact assessments require an interdisciplinary examination of "slices of a cake" rather than the disciplinary study of its "layers" (Berkes, 1988). These epistemological approaches serve to make complex socio-ecological systems appear discrete, legible and therefore manageable by projects. This is also borne out by the CEA's ranking study of river basins for their power potential in which the parameters considered for the assessment are mostly the physical attributes of the project locations (Government of India, 2001). The EIAs for hydropower dams in the Eastern Himalayan mountains of Northeast India make a special case for undertaking these projects in this geophysical set up challenged by seismicity, intense monsoon and massive soil erosion using the World Bank's "high risk-high reward" rationale (Bossard, Bruil, Horta, Lawrence, & Welch, 2003).

EIAs use a tool called 'scoping matrix' to identify and segregate the various aspects of the environment that are likely to be affected during the construction and operational phases of the project. The matrix shown as Table 1.6 in the EIA for the Demwe Lower project does not have any references to studies or empirical data to explain why those likely impacts have been chosen over several others that may occur. It is also devoid of any reference to geographical difference and gives no indication of whether these likely impacts would be the same across dams built anywhere. In some cases, the EIA consultants identify the potential impacts even prior to the commencement of the study indicating that there may be no empirical basis for the impact statement. However, the matrix is called "appropriate" (Centre for Inter-Disciplinary Studies of Mountain & Hill Environment, 2009). The EIA of

the Lower Siang project segregates project impacts as major or minor without any justification of why they are categorized as such. Following that, they claim to '*deal with the major impacts to the extent possible*' (CISMHE, n.d.). The EIAs also classify impacts as direct and indirect, positive and negative but it does not indicate from whose point of view. But the effect of the scoping matrix is to polarize the impacted communities into selective groups of beneficiaries and affected parties, even though larger groups of people living in the region are made vulnerable to risks due to the project that are yet to be recognized.

The contents page of the Executive Summary of the Siang Lower H.E Project, Arunachal Pradesh is divided equally between 14 items of impacts and 13 items of management giving the impression that dam building can almost be a zero impact enterprise as the mitigation can match impacts, one to one. Water and Power Consultancy Services (WAPCOS), a central government affiliated agency, based in Haryana, was commissioned to draft an EIA report for National Hydroelectric Power Corporation's Lower Subansiri project. The report outlines its main objective as the assessment of "the positive and negative impacts likely to accrue as a result of the construction and operation of the proposed Subansiri Lower project" (WAPCOS Centre for Environment, n.d.). The EIA report consists of ten chapters that include an environmental baseline status, the environmental management plan and disaster management plan, with 70 tables and 20 maps and pictures, all amounting to 238 pages. However this was not publically available to anyone to read as the law mandated the public availability of the full EIA only after the year 2002. The document that was provided to anyone interested in understanding the project's impacts was an executive summary of four pages. It was drafted in English and Assamese (Vagholikar & Ahmed, 2003). This Summary did not have the word 'environment' anywhere in it (Rajsekhar, 2007). This process of making technical data and information about projects easy for public consumption often results in such brevity and simplicity of contents that it makes the project appear less impactful, within manageable limits or not of serious or long term consequences.

5.2 Manufacturing a Region of Deficits

Creating a region that is suffering a long-standing developmental deficit is crucial to establish acceptance for the proposed hydropower projects. As a tool that seeks to legitimize the centrist developmentalist vision of large-scale hydropower generation in the region, the EIA portrays dam-based development as a historic opportunity to relieve the northeastern states of their economic backwardness. As shown in Chapter 3, the northeast region has been recognized as an economically backward region in nationalist development discourses. The EIA reemphasizes this by pointing to the low scale of urbanization and road connectivity between places in the region. Every potential project site is described in terms of its distance from the few known cities and towns and transport hubs. For example, the site of the Demwe Lower is described as “*about 550 km from Guwahati airport... about 215 km from Dibrugarh and about 160 km from Tinsukia, the nearest rail head*” (Centre for Inter-Disciplinary Studies of Mountain & Hill Environment, 2009).

The notion of geographical distance is entwined with the region’s marginal status in postcolonial development. The descriptions and maps in EIAs not only locate the proposed project sites but also suggest that the proposed projects would allow the penetration of transport and energy infrastructure into areas that are hitherto devoid of these facilities. The Dibang EIA report points to the project site’s “poor connectivity from the railhead and nearby towns” (National Productivity Council, 2010). Transport infrastructure, especially connectivity by roads and bridges are believed to be strong incentives for people of the region who have endured the discourses of regional backwardness. All the three proposed dam projects involve new road laying and communication facilities and therefore claimed to overcome regional backwardness and geographical marginalization. In reality these road works were needed to realize the dam project itself. One of the stated benefits of the Lower Subansiri project is a road of 23 kilometres that would be constructed to carry equipment for the project.

Another deficit presented in the EIA report is a measure of “economic poverty” supposedly arrived at through the socio-economic surveys conducted by EIAs. The chapter on socio-economic aspects in the Lower Subansiri EIA begins by describing the project area as rural, inaccessible, dormant, socially and economically backward.

These descriptions are presented as facts that emerge from the consultant's analysis of literacy rates and livelihoods such as dependence on forest produce and shifting cultivation (WAPCOS Centre for Environment, n.d.). To collect data on the social impacts of the project, the consultants surveyed the people who would be impacted by the submergence. As per the survey, 325 people belonging to two clans of Gengi and Siberite villages, their homesteads and their terraced rice fields would be affected. The EIA states that estimating the exact land ownership of these families was a difficult task for the survey team "as the land holding pattern is traditional" and could not be verified through land records (ibid). Their conclusions about poverty in the community despite their lack of comprehension of traditional land holding, reveals that the poverty of the local people is an assumption held by the consultants rather than a conclusion of the survey.

The EIA consultants socio-economic survey instruments applied on respondents from ethnic indigenous communities of the Northeast draw comparisons between places where the projects are to be located and already 'developed' areas. Economic backwardness is established by stating the difference in the levels of material possessions owned by a family or the number of hours of electricity supply that a house has but the data collectors do not necessarily comment on whether these parameters are relevant in this specific context. The notions of poverty and backwardness and their evidence in few material possessions or private property are taken as given.

The region where the Dibang project is proposed is almost entirely constituted of indigenous communities. The submergence areas is in the Dibang valley district which is home to the Idu Mishmi, while the downstream areas of the project in the Lower Dibang valley are shared by the Adi-Padams, the Galo and the Mishing. The EIA undertakes the ethnographic method to understand the customs of the local people. The EIA states that "a systematic anthropological approach" involving "in-depth interviews with the people (mainly elders), group discussions and participant observation (which includes observing the way they live, eat, cook etc.)" was used (National Productivity Council, 2010). However, it fails to recognize the unique ways in which they relate to the land, water and forests around them. Do the Idu Mishmis and other communities of the region view land and water only as an economic asset or

are they imbued with values? What role do the forests and rivers play in the worldview of the Mishmis? How do they view their pasts and their futures in this landscape? These questions remain unasked and these aspects remain outside the sight and understanding of the EIA consultants. They conclude, that “their way of life and their values and philosophy of life” would have to be understood to ensure that the project impacts “do not result in a ‘cultural shock’ for them.” (National Productivity Council, 2010). There are several such examples to suggest that though the EIA is officially meant to assess the suitability of a proposed project for a region’s development, it actually produces a region suitable for the desired project.

Bedi points to the use of development narratives and the promise of trickledown benefits in EIAs (Bedi, 2013). According to the staff of NHPC who authored a paper on the Lower Subansiri project presented at the Hydro 2004 Summit in India, the project helps to meet “a fundamental sustainability goal- the alleviation of poverty” (R. Chandra, Tripathi, & Patra, 2004). They state that the project would reduce the occurrence of floods and river erosion that impacts forest areas and agricultural land in downstream Assam. In addition to the free power that the state of Arunachal Pradesh would be given for allowing the project to come up on this site, the project would also help to “increase employment and tourism, better schools, hospitals and roads and communication” and generally improve the quality of life (ibid).

5.3 The Technicalization of Water

The EIAs for hydropower encapsulate the fundamental question about the nature of nature. Every EIA for hydropower projects in the Northeast has a picture of a free flowing river on its cover bound by gigantic slopes or vast valleys and filled out with forest vegetation or wet rice farms. These are usually the only photographs in these documents showing the river in true time. These pictures help to imagine the Himalayan rivers as a powerful force falling down mountains or spilling out of gorges to cover large parts of the valleys. This is the reader’s only encounter with the ‘wild’ river. It is ironic that the very characteristics that are grandly exhibited in these photos are the very ones that will be lost by the success of the project. Other than this photograph at the beginning of the EIA, at all other times in the EIA, the river is represented through illustrations and line drawings. The chapter on hydrology

seemingly lays out a weak river, fully transparent in all its traits and properties. Such a chapter contains no fables or folktales of its mysterious ways, no social history of floods and no community uses that these waters are put to which may establish these waters as ‘socionatural hybrids’ (Linton, 2010; Swyngedouw, 1999) rather than a chemical composition.

The discussion of ‘resource’ in the opening pages of the Lower Demwe project involves extensive hydrological data collected over decades by agencies such as Central Water Commission (CWC), the Brahmaputra Board and the government departments of hydrology, irrigation and flood control. These are the Northeast region’s expert institutions set up for the scientific study of regional economic development through river management. The purpose of such institutions, or rather of the rationale of water policy and planning itself, is to create assets out of water or resources that are devoid of their sets of relations (Harvey, 1974). Their assessments that treat rivers as an object of government planning are used in EIAs to frame the rivers as a Himalayan resource waiting to be tapped. The hydrological data collection by these agencies does not involve the rivers of the Northeast region, but specific traits of the river that give it a ‘calculable coherence’ (Linton, 2010). In fact, it may even be understood that a river, no matter how ‘powerful’ can hardly boast of any ‘potential’ unless it produces electricity. Such a technicalization of waters of the region into hydro resources render these rivers ahistorical, with no ecology or place (D’Souza, 2013). EIAs for dam projects are engaged in the removal of context from water flows.

The EIA of the Dibang project was drafted by the Guwahati based National Productivity Council (NPC). In addition, a report was done by WAPCOS to cover the additional provisions of the TOR for the EIA study. In section 6.6 on “Impacts on Downstream Water Users”, dammed water is presented as a dependable and productive economic commodity. It states, “For more than 5,000 years, dams have provided people with a reliable source of the water they need to live.” It goes on to give examples of how water bunds help to store water for dry periods or for irrigating fields (WAPCOS, n.d.). It equates these localized forms of water flow management with the proposed dams, which would be the largest ones ever to be built. The projects involve large-scale construction of a network of dams and tunnels through which the

waters will be made to flow. The dams are designed such that water from the river would be held behind them until it was time to generate “peak” demand electricity each day after sun down. The water would then be allowed to flow through the network of headrace tunnels and reach a powerhouse containing multiple turbines having the capacity to generate several hundred MW of electricity from flowing water.

These units generated would be sold to large cities and towns powered by the Northern Indian grid in exchange for profits for the generating companies and revenue for the states in which they are located. As stated in Chapter 3, the Chief Minister of Arunachal Pradesh is reported to have promised the people of the state that this would generate “hydrodollars” for them. These projects are a means for the commodification of rivers by trapping their flows and turning them into saleable stock (Anon, 2007a).

5.4 Environmental Managerialism

Till the 1980s, official scrutiny of projects in India was based on the Cost-Benefit Analysis (CBA). This approach took for granted that local communities that depended on the environment would bear the costs of development that purportedly benefitted large numbers or was “in public interest”. In contrast to this, one of the stated purposes of the EIA was to identify these costs and find solutions to mitigate or manage them, so that development appeals to all rather than create beneficiaries and losers.

The EIA of Dibang project states that historically water and energy needs of people were prioritized. But now, developers would have to “recognize the importance of the natural environment and the need for long-term protection against pollution” (National Productivity Council, 2010). It further states, “The objective of environmental impact assessment is to ensure that development proceeds hand-in-hand with ecological preservation so as to achieve sustained growth” (ibid).

This objective frames the purpose of the EIA in very limited and reductionist terms. While the notions of growth and development through large dams are left unquestioned, environmental problems in the form of reducing pollution and preservation of ecology are to be managed to the extent possible. For example, the

Lower Subansiri EIA predicts an increase in water related diseases due to the creation of shallow water ponds and air, water and noise pollution during the construction phase. Accordingly it suggests several measures to keep these in check. The blockage of the migratory path of the Mahseer, a very significant fish species in the river, is stated as a “major adverse impact of the project” (WAPCOS Centre for Environment, n.d.). However, it balances this off by stating that the local non-migratory species of fish adapt better to the creation of reservoirs and therefore “measures have to be designed to adjust fish stocks to the changed condition” (ibid). So while some measures are to ensure that the problems are mitigated to the extent possible, others are to ensure that the local diversity is altered to fit in with the new conditions.

One chapter in the EIA is devoted to the Environment Management Plan. As stated on page 183, the objective of the EMP “is to minimize stress on the natural resources within the carrying capacity.” Dust pollution at the construction sites would be prevented through water sprinklers (ibid). There would be protection walls along the river so that the excavated muck would not flow back into the river. It would be collected and ground for use in construction. Unused material would be disposed at designated sites. Compensatory Afforestation (CA) would be taken up over double the area of land used by the project with indigenous species. The “three rare and threatened plant species” in the submergence area would be replanted in the museum of the State Forest Research Institute and in the afforestation plots identified by the Forest Department. A minimum flow of 25 cumecs is recommended to avoid fish loss and protect the benthic material on which the fish feed (ibid).

The EMP recommends the stocking of the reservoir with Indian major carps and endemic Mahseer fingerlings by setting up an aquaculture facility of 12 ha. It states “it is expected that in the course of time, Mahseer would be able to adjust to the changed ecology, especially the movement from the reservoir to the upstream.” There would be check posts set up to monitor against poaching. 15 check dams would be built to control soil erosion and the dam’s catchment of 2315 ha that has high erosion rate would be protected through afforestation and pasture development (ibid). The above are some strategies common to all hydropower projects for managing their impacts. This approach of EIAs focuses on minimizing the negative impacts of developmental interventions rather than actively seek out the best possible options. As

Bond et al comment, EIAs that focus on mitigation merely ‘serves to slow down progress towards unsustainability’ and do not focus on ways ‘to enhance what is best about systems’ (Bond et al., 2012). EIAs in India as they are practiced today can be seen as a handmaiden of mainstream development.

The EIAs refer to the Northeast region as a place of abundant biodiversity and produce extensive checklists of flora and fauna collected from the sampling sites in the project areas. But the itemized checklists in EIAs are far from comprehensive and fail to describe the region’s biodiversity. Conservationists and wildlife biologists working in this region, which is recognized as a global “Biodiversity Hotspot”, state that there are several new species in the forests and waters of the region waiting to be discovered²².

Despite the limitations of data, the checklists are long. The EIAs refrain from commenting on the richness of the ecology by providing comparisons with other biodiversity rich landscapes or quoting papers by experts. The lists in themselves can be treated as a symbol of biodiversity being in excess just as water is seen as an abundant resource that can be harnessed. The economic understanding of ecology through notions of excess is seen in the assessment sections that explain the impacts of the Lower Demwe and Dibang projects on the Dibru Saikhowa National Park. The additional study on Dibang project impacts states that the dam would "affect water requirements of wildlife" but the Park which was washed by floods three to four times a year would be more stable due to the flood moderation effects by the dam and that species that thrived in flooded landscapes would no longer ‘dominate’ the Park (Centre for Inter-Disciplinary Studies of Mountain & Hill Environment, 2009; WAPCOS, n.d.).

The section that discusses the quality of water in the Dibang river shows that although the EIA is officially meant to predict the impacts of the project on the region, what it does more often and better is to predict how the conditions of the region and surrounding landscape will support or impede the project. For example, the report states, using several parameters such as low biological and chemical content, that the

²² The 2003 special issue of *The Ecologist Asia* on Large Dams in Northeast India includes several cases of dam EIA reports that have underestimated the biodiversity of the region.

water of the Dibang river is not polluted as it flows through low population density and non-industrialized areas. The authors of the EIA then conclude that as a result of the good quality of water, the project does not face eutrophication risks. The EIA is concerned with how much water “is abstracted from river Dibang” by the population that lives in the project area (National Productivity Council, 2010). It concludes, based on average daily consumption per head, that no water is lost from the Dibang river as adjacent streams have enough to cover this requirement. The EIA establishes that the project is viable due to low population, low industrialization and good quality water is in “excess” of existing local needs. Similarly, the EIA of Lower Subansiri justifies the submergence of forests due to the proposed dam as they are “degraded forests with marginal biodiversity value” (WAPCOS Centre for Environment, n.d.).

The EIA encapsulates “eco-managerialism” or the environmental managerial aspects of developmentalism in which nature is seen as a resource that should be managed efficiently (Hajer, 1995). Not only that, this regulation of environmental goods is presented as a conservation benefit. Bakker refers to such policies as “market environmentalism” (Bakker, 2007). Hydropower development in Northeast India is packaged as a “win-win” opportunity by government because the EIAs claim that not only will hydropower dams make possible the production of limitless energy from abundant river flows of the region, but they will also help to green the national economy through renewable energy. The Dibang project alone envisages producing 7421 million units of power after accommodating a “cushion for flood moderation”. A flood cushion is created by leaving space in the reservoir free to accommodate floodwaters in case of such an event.

The EIAs portray hydropower dams as a symbol of sustainable development. The opening pages of the EIA are set up the project as a beneficial one by establishing it as clean, providing renewable energy in comparison with other mainstream, commercialized forms of energy such as nuclear and thermal power and that this energy is “essential for the socio-economic development of a region” (National Productivity Council, 2010). They state that energy that is presently produced by fossil fuel burning is “being depleted and they contribute to air pollution and possibly to climate change” (ibid). The EIA makes statements such as hydropower helps to “generate electricity without releasing harmful substances in the air” and that hydro

projects are “the only natural energy sources” (ibid). They conclude that hydropower projects are necessary for “expanding development” and environmental protection. Michael Goldman describes this effort to bring together these two contradictory ideologies as “Green Neoliberalism” (Goldman, 2001).

For many people who may not fully understand the technical elements of the EIA, it is its promotion as a green, clean and “natural” form of power generation that holds sway. Since 2000, successive chief ministers of Arunachal Pradesh have eulogized hydropower as ‘Green Power’. Framed as a package, ‘Himalayan Hydro’ proposes to sustain nationalist developmentalism that includes energy production and economic growth. Once the impacts brought on by large dam projects are reduced to pollution and specifically air pollution or carbon emissions, it is easy to make an argument to show hydropower as a green choice. Although supporters of hydropower state that it involves the natural kinetic energy of flowing water and is therefore renewable, this claim is debatable as hydropower projects affect fisheries, restrict river flows in the river and cause other environmental risks (Daigneau, 2013).

5.5 Creating Commensurability

In the EIA, terms like growth and development are not defined or qualified, while the environmental problems of these projects are reduced to pollution and preservation. The opening lines of the Dibang project EIA report is that “dams and reservoirs also help control flood waters to protect people and property, keep rivers navigable, provide electricity from renewable energy for towns/villages and factories, and provide recreational opportunities such as fishing, water sports, etc.” (National Productivity Council, 2010). The report claims that the EIA is a knowledge system for accumulating information regarding the working of River Valley Projects which “like all other developmental projects, have been beneficial but have some adverse impacts. These impacts must be carefully assessed and balanced for achieving sustained benefits. The objective of environmental impact assessment is to ensure that development proceeds hand-in-hand with ecological preservation so as to achieve sustained growth” (ibid). EIAs include a detailed Environment Management Plan (EMP) that delineates numerous activities, projects and schemes to meet this objective.

The EIAs for the proposed hydropower projects attempt to make commensurable several competing and contradictory aspects of the projects such as the environmental and developmental effects of the projects, the burdens and benefits they generate and the national and local priorities riding on them. Although they were declared as win-win projects by the national government, the impacts of specific projects had to be accounted for and compensated. The two that challenge the EIA consultants the most are the rehabilitation of displaced people and compensations for loss of private and common property.

In the Northeast region, clan groups share the limited available productive farmland for rice and other crops and practice collective shifting cultivation in forest areas. Shifting cultivation is a cyclical system of food production where specific plots in the clan forests are opened up for farming while other plots are treated as agricultural fallows or regenerating forests (Choudhury & Sundriyal, 2003). This incomplete commodification of land that is both forest and farm is used as a common resource. According to the socio-economic survey of the Lower Subansiri project, two large clan groups of Gengi and Siberite village would lose their homesteads, rice fields and forests due to the reservoir of the project. Although the consultants found it difficult to tell individual property from the shared common property, the EIA concluded that the land claims made by the respondents of the survey were exaggerated. Secondly, they also found it difficult to enumerate how many families had to be compensated, as their social organization of kinship and clans does not fit within the categories used in rehabilitation policies.

The EIA consultants for the Lower Subansiri project conducted a survey to identify what the affected families wanted as compensation for the loss of their land. They reported that 100% of the 'project affected families' (PAFs) sought 'land for land' as compensation. However, the Rehabilitation and Resettlement (R&R) package for the people of Gengi and Siberite included the following aspects; they would be to be shifted to a new location, each PAF would get at least one hectare of land and the remaining in monetary compensation, homestead land of 150 sq. m. and animal shed of 50 sq. m., and Rs. 2,50,000 (approximately USD 3500) as grant for land development paid after six months of receiving the land for resettlement and free transportation of all the material from their old home. Land, trees and other

immovable property were to be compensated as per official rates. The resettlement area was to also have a primary school with playground, latrines for each house, community centre, primary health centre, approach road, piped water, preferential selection of PAF member for small contracts and employment (WAPCOS Centre for Environment, n.d.). Vagholikar and Ahmed point out that the survey report also shows that 23.7% of the PAFs asked for vocational training and 21.1% sought employment. However these were not accommodated in the R and R package (Vagholikar & Ahmed, 2003).

The socio-economic survey for the Dibang project set out to measure the “loss of personal and community property of the PAFs” (National Productivity Council, 2010). However, it considered only the area coming within the submergence zone of the project. This meant that for the 859 PAFs in the 43 villages surveyed, only 115 PAFs from 5 villages were considered for the R&R package that included land. The project offered the official compensation package only to those who were “fully” affected and this was determined by the loss of personal property. The remaining 744 PAFs of 39 villages, who would lose their forest areas but not their homesteads, were treated as “partially affected PAFs”. The shrinking of the community forests and loss of access to shifting cultivation and other community property would be compensated only monetarily.

Only ‘affected persons’ were met with individually through a door-to-door survey. Such a tool for data collection also communicated the manner in which relief measures or compensations would be targeted at them. The EIAs referred to the number of people affected by the proposed projects as few by counting affected individuals. However, if the impacted households were shown proportionally in relation to the total number of households residing in the project area, that would be significantly large. If the data were shown in proportion to the size of the small, ethnic minority communities that live in the region, then the results would be alarming. However, the data on absolute numbers was mobilized to impress upon different audience that the projects proposed for this region were low impact and high benefit projects.

Numerical representation and measurement are at the core of EIA techniques. Numbers allowed disengaging with the observed particulars of the region, say its biodiversity or the organized shared use of land by the local communities and instead superimposed onto to this region, the general principles of R&R and compensation. The EIA methods prioritized equivalence over difference and made diverse living systems amenable to dominant forms of knowledge (Poovey, 1998). Loss of quality is critical to the task of making things commensurable. Values when expressed as numerical quantities make them comparable by a common standard. As pointed out by Porter, numbers are not descriptive but constitutive (Porter, 1995). Nature is disclosed or revealed in ways very different in form and content from lived experience. Quantitative parameters may or may not be the ones that are important. But they are the only ones that concern the regulatory approval process for projects such as hydropower dams. The evaluation of projects based on numerical quantification displaces other values of decision-making such as social and ethical. As India's former Environment Minister Jairam Ramesh stated "what we cannot measure we cannot monitor and what we cannot monitor we cannot manage" (Ramesh, 2011).

By the inclusion and exclusion of certain meanings, these techniques of quantification create a stable and legible landscape of objects rather than relationships. Elements such as forests, water and wildlife are typified and represented in terms of percentage of canopy cover or density, volume of discharge or number of affected species. At the end of such an EIA exercise, the flowing rivers of the region become abundant in cusecs, forests are degraded and land is underutilized. The statistical summary of the EIA document is a 'backward' region but not without the possibility of its own progress. The models and graphs generated by the interplay of these counted elements offer pathways for the future development of the region by the technological manipulation of the landscape. This numerically constituted social reality of the region is one that is deficient without a dam on the river.

5.6 Reflexivity in EIA

The study of the assemblage of actors, methods and models mobilized in the EIA process demonstrates that official environment knowledges are an outcome of practice, performance and power in a regime of participatory environmental

governance. EIA is a response to the conflicts caused by mainstream developmentalism of the post-colonial state. It operates as a tool by which environment and development, costs and benefits of development are made commensurable. This enables the state to pursue development without friction. The epistemic and strategic goal of EIAs to manufacture consent for mainstream development can be seen as a product of reflexive traditionalization rather than reflexive modernization. Here modernization is understood as greater awareness and openness to new discourses (Bostrom et al., 2017; Stevenson & Dryzek, 2012).

Discourse has the power to constitute nature and space. In this chapter, through an analysis of EIA documents, I understand the EIA as a technology of knowledge making. I show that professional discourse establishes Northeast India as a natural site for the hydropower production. The EIA uses standardized manoeuvres and strategies to present ‘objective environmental facts’. It deploys disciplinary knowledges to fragment environmental relationships into legible and measurable units. The EIA flatten out the peculiarities of place in the name of describing, counting and classifying them. I seek to draw attention to these logics of EIAs wherein observations of nature and space are organized and given meanings and developmental effects (Bauchspies et al., 2006). The EIA deploys “epistemes”- poverty, backwardness and environmental managerialism- that structure and organize the information generated by EIA consultants into official environmental knowledge.

As a technology for assembling and disseminating environmental knowledge, the EIA has tremendous influence to re/order lives and landscapes. Rather than being challenged by complex historical and geographical conditions, EIAs have been granted the power to define people, places and futures. Contrary to the assessment of the project’s suitability for the region through a statement of potential impacts, the EIA engages in constructing the suitability of the region for the project. The methods and strategies adopted by EIA documents frame space in particular ways that allow its harnessing for nationalist development. EIAs create a ‘natural’ fit between projects and locations; it shows that sites select interventions and interventions select their sites. Rather than being a separate object yet to be created, the project exists in the EIA itself. EIAs, I argue, are tools that seek to *naturalize* development.

Participatory environmental governance aims to manufacture both legal and social consent for projects. While the EIA's main concern is to obtain legal approval without which the project cannot commence, the measures and schemes devised in the document are also important to generate social consent for the project. The EIA document communicates the neoliberal developmentalist vision of the central government through energy production and economic growth. It projects the hydropower dam as a unique win-win opportunity by claiming commensurability between the contradictory aspects of such development. Commensurability is attempted through compensation and rehabilitation schemes and environmental management measures. The EIA is thus meant to serve as the scientific and epistemological basis upon which the ideas of environmental protection and development are coupled. Not only does the EIA distract the reader from the project's costs or burdens, it supports and encourages large-scale hydropower production by calling it a renewable source of energy. The EIAs claim that such a renewable resource offers endless potential for green energy as well as monetary resources for the Northeast region. This move of EIAs to present hydropower as renewable energy in light of the global and national concerns regarding climate change draws support from climate, environment and energy policy besides appealing to regional or national development concerns.

5.7 Conclusion

In this chapter, I present an epistemological critique of EIAs by analyzing three EIAs for proposed dam projects in the Northeast region. I show the strategies of environmental knowledge production involved in EIA and the alignment of this form of knowledge making with state power. This chapter argues that EIAs represent the disjuncture between place-based experience and developmental expertise, between socio-cultural environmental contexts and ideologies of ecological modernization. It outlines EIA's key tools of measurement and representation such as baselines, scoping matrices and environmental management plans. Under the cloak of "win-win" approaches, EIAs propagate trade-offs that feed into utilitarian models of environmental governance.

CHAPTER 6

HYDROPUBLICS IN ARUNACHAL PRADESH

As shown in chapter 4, PEG was introduced to environmental decision-making due to the backlash caused by conventional state-led planning and execution of large infrastructure projects. One of the most, visible and prominent institutional practices of PEG is the public hearing. Since the 1990s, laws in several countries have mandated public hearings. Participatory forums allow the exchange of information and views on proposed development projects, schemes and policies. They are seen as interactive spaces for various actors involved in the governance of development which can generate consensus, reduce conflict and produce consent (Backstrand, 2004; Bulkeley & Mol, 2003; Pellizzoni, 2003). There is extensive scholarship on various models of participation as well as critiques of the how participation forums are set up, what they address and how they influence decisions (Arnstein, 1969; Chess & Purcell, 1999; Shepherd & Bowler, 1997). The procedural aspects of how public participation is institutionalized can determine the effectiveness of participation and the substantive sustainability goals of PEG because complex issues of uncertainty, risk and representation can limit the results (Elstub, 2010; Newig & Fritsch, 2009; Pellizzoni, 2003).

In India, public hearings have been implemented for nearly two decades. They were introduced in 1994 as a mandatory legal requirement under the Environment (Protection) Act of 1986. As stated in Chapter 4, public hearings are conducted prior to the grant of approval to certain categories of development projects such as large dams. These are meant to provide decision-makers with views and suggestions regarding the project from the public and affected people. Scholars have analyzed environmental policy making in India and pointed to gaps in procedures and poor implementation of public hearings (Paliwal, 2006; Rajamani & Ghosh, 2016; Sinclair & Diduck, 2000). Projects that have been approved without public hearings or through faulty procedures have also been litigated (Anon, 2018; Kohli, 2010). However, the effects of these procedural and institutional failures of public hearings are yet to be understood.

In this chapter I analyze the public hearings held for two projects, the Lower Subansiri and the Dibang multipurpose project, that were conducted between 2001 and 2013 in the Indian border state of Arunachal Pradesh. I broadly apply Fung's framework that include three aspects: scope of public participation, modes of communication and the extent of authority of actors involved to assess these public hearings (Fung, 2006). Based on this analysis, I show how participatory models of governance are implemented in India and theorize their outcomes. I conclude that public hearings are indeed set up as forums to generate consent for government backed projects, but the participants at these hearings are politicized and radicalized by these attempts at faux consultation

In the first section of this chapter, I outline the main features of the public hearings held for the two dam projects. I analyze the structures and content of public hearings to show the instrumentalist motivation of the government. I also show the desire for participation in the "public" of the region and to influence project decisions in the affected communities of the region. I also analyze who was heard at these public hearings and why by using Jim Macnamara's concept of the "politics of listening" (Macnamara, 2017).

In the second section, I show government tactics used to control the outcomes of the public hearings. The government deployed structures and formats of hearings to drown out diverse voices on the project to the point of criminalizing protest voices. As Bulkeley and Mol write, PEG approaches can be seen as a "shift from government to governance" to point to the use of participatory approaches as form biopolitical regulation of dissent (Bulkeley & Mol, 2003). Macnamara calls these forms of listening as "strategic" to further the goal of any organization (Macnamara, 2017). In the third section, I show the efforts of the public hearing participants and communities affected by the government policies on large dams to be heard. They expand the public sphere beyond the public hearing forums through their strategies of mobilization and organization. They reach out to other forums to amplify their voices. The public hearings for dams in Northeast India demonstrate how narrow and limited bureaucratic state procedures for consent-making open up a space for negotiation and contestation by the collective agency of affected citizens. The public hearings

conducted in the NE region highlight the contradictory claims of the state. They reveal why the government conducted these hearings and also the reasons why the local people participated in them. Yet, the outcomes of these hearings are not predetermined. Participatory spaces such as these constitute and reframe deliberations and contestations over development and influence outcomes.

6.1 Public Hearings for Northeast Dams

Lower Subansiri Project: In late July 2001, a nondescript notice appeared amidst tender notices for public works in local English and Assamese dailies. It stated that on 4th September 2001, a panel constituted for “taking note of public complaints, statements, objection, views etc regarding the hydroelectric power project to be installed at Gerukamukh under the Dhemaji district by M/s NHPC North Lakhimpur will conduct an environmental public hearing...”. This public hearing for the Lower Subansiri project invited interested persons of the locality including bonafide residents, environmental activist groups, NGOs and individuals likely to be affected and local authorities within the neighbourhood of the proposed project to “attend” the hearing and have “their statements, suggestions, comments, views and objection regarding likely environmental damage” recorded. The public hearing was to be held at the guesthouse of the project developer, the National Hydroelectric Power Company (NHPC), within the housing complex of the proposed project at Gerukamukh.

This notice was published by the Member Secretary of the Pollution Control Board (PCB) of Assam as per the Environment Impact Assessment (EIA) Notification of 1994 of the Environment (Protection) Act (EPA), 1986. As stated in Chapter 4, in India, the Public Hearing is to be held for projects listed in the Schedule I of the EIA Notification. The stated purpose of these Public Hearings is to ensure that the details of the project are communicated to people living at and near the project sites and consult their views regarding the impacts of the project.

The official documentation available for the Lower Subansiri project show that four, smaller, hearings had already been conducted a month earlier at different locations in Arunachal Pradesh between August 17 and 24, 2001. According to the official

documentation, a total of five public hearings were held in 2001. One of them was in upper Assam and four in Arunachal Pradesh. The Collector's offices in the four districts where the project activities would take place organized the four hearings in Arunachal Pradesh. The first of these was held in the Conference Hall of the District Collector's office in Ziro, Hapoli. The differences between the Assam public hearing and the Arunachal Pradesh public hearings for the same project and between the Lower Subansiri and Dibang public hearings show that the implementation of public hearings is governed by expediency even though the procedures of conducting public hearings are standard clauses irrespective of social, political or cultural contexts.

Dibang Project: For the public hearings of the Dibang project, the Arunachal Pradesh Pollution Control Board prepared a single notice announcing that two Public Hearings would be conducted on May 23 and 25th 2007 at Roing and Anini, the headquarters of the Lower Dibang and Dibang districts. The notice was issued in local newspapers on May 9, 2007. The trajectory of these public hearings was starkly opposite to those for the Lower Subansiri project held in 2001. At the time of the Lower Subansiri public hearings, the people of the Northeast region were not informed about the global impacts and debates surrounding large dams. By the time the Dibang hearings were announced in 2007, local people in the state of Arunachal Pradesh were actively engaged in understanding the impacts of the proposed dam projects in the region. The local media and civil society organizations in Arunachal Pradesh generated public awareness on these issues. The public opposition to the Lower Subansiri project in downstream Assam since 2003 also revealed aspects of these projects that were concealed or left out by the project documents. It was in this context of local mobilization and growing opposition to large dams that the Dibang public hearings were announced. The public hearings for the Dibang project were stalled by massive protests for six years. The government attempted to hold the hearings under these conditions a dozen times until 2013. In 2013, the government "succeeded" in holding one public hearing each in two of the affected districts of Dibang and Lower Dibang valley as it had planned from 2007.

An analysis of the documentation of these public hearings throws light on what these public hearings were held for. The term meetings or negotiations are more applicable for the public hearings held in Arunachal Pradesh for the Lower Subansiri project.

These terms reflect the small size of the group and the limited or narrow agenda of the discussions. The Divisional Forest Officer (DFO) of Hapoli Forest Division initiated the meeting and the Additional Deputy Commissioner of Lower Subansiri district was the chairman. The DFO briefed the audience about the forest areas required for project activities. The dam's reservoir would submerge an area covered 33.5 sq. km spread across four districts. The forest areas under submergence were already "diverted" or assigned for use by the dam. The Forest (Conservation) Act, 1980 required the forest department to undertake Compensatory Afforestation to make up for this loss of forests. The Department also had to engage in Catchment Area Treatment (CAT), done mainly through raising forest plantations, to protect the dam reservoir from upstream siltation and soil erosion. The forest lands where these activities were to be undertaken were under community ownership and the government needed the consent of community members to take up this work. So the Arunachal Pradesh government was also forced to hold these hearings as a form of consensus building on the project and to obtain their consent to use community lands.

The public hearings opened up the issue of the submergence area calculated by the project. At all the four hearings for the project in Arunachal Pradesh, the local people claimed that the submergence area was greater than what was calculated by the government. They challenged the assessments made by the forest department and demanded compensation for the loss of forest land. The public hearings sparked a process of official dialogue between the landowners who claimed the status of "project affected people" and sought compensation and the state authorities that wanted public consent for the project. The government officials did not anticipate these responses. The government had assumed consent but the participants of these meetings were offering conditional consent. Though their demands were strong, the participants were also appreciative of the project.

In response to these demands, at the first of the four hearings, the officials reluctantly offered to re-examine the survey. By the fourth hearing, the locals attending were agitated. This made the officials agree to reassess the impact zone. At the last hearing, the Chairman of the meeting asked the community members present to make demands based on the consideration to the project. He stated that the project would not only bring benefits to the people but also to the state government. He appealed to the

people not to hamper this project and promised that the ones that the NHPC would build in the future in Arunachal Pradesh would provide employment, contracts and other benefits to the locals. The written record of all the public hearings closed with the statement, “All the people present there endorsed the view that the project should be constructed”.

Within two months of these hearings, a joint survey was conducted by DFO (Ziro) with representatives of NHPC, affected people and district authorities. The survey concluded that the submergence area included 42 hectares of the Tale Valley Wildlife sanctuary, 463 hectares of Tale Reserved Forest and 475 hectares of community forest land (R. Chandra et al., 2004). These negotiations had expanded the scope of the project by the inclusion of a larger affected area. The responsiveness of the state authorities to the demands set off a process of claim making over these lands and negotiations between the state department and locals on compensation for land losses. The public hearings had initiated local mobilization around the question of compensations. However the use of public hearings as negotiations ensured that there was consensus on the project. The enactment of these meetings as public hearings gave legitimacy to the bureaucratic process as well as the official knowledge generated through the process. They justified the next course of action.

The public hearings allowed the decision-making on the projects to be framed as open, participatory and democratic. However, the public hearings for Lower Subansiri project in Arunachal Pradesh characterized the two significant hallmarks of bad participation: government control of the narrow and limited agenda and participation of self interested groups. These hearings were successful for the government as they enhanced the possibility of implementing the Lower Subansiri project.

The experience of the public hearings for the Dibang project was more complex as shown below. When the first public hearings for Dibang were announced in 2007, the state Pollution Control Board (PCB), the government agency in charge of conducting the hearings aimed to hold the meetings lawfully. But some community members were already concerned that public hearings would result in the loss of their resources.

Jibi Pulu, a local resident of Roing and an ecotourism operator, was one of them. He preferred to stall the hearings for as long as possible. Pulu appointed Rahul Choudhury of Lawyers Initiative for Forests and the Environment (LIFE), New Delhi to issue a legal notice on May 7 2007 to the PCB regarding the procedural lapses in the hearing announcement. It stated “the notice for public hearing published by State Pollution Control Board is not as per the provisions of the Environment Impact Assessment Notification 2006 and hence illegal” (LIFE, 2007). The public hearing notice had stated that the draft EIA, the draft EMP and the executive summary of the EIA and EMP were available on the website of the State Forest Research Institute (SFRI). However, there was no information about the location of the hard copies of these reports that interested people could read before the public hearing.

The officer in charge of the hearings responded promptly to the complaint. On May 14, G. N. Sinha, Member Secretary of the PCB, wrote to the District Collector asking for the postponement of the hearing from May 23 to June 30. He stated that this was on account of the non-availability of the EIA report to people in the Lower Dibang valley and environmental organizations. He added, “I am forwarding a set of the draft EIA report etc in CD with a request to kindly keep sufficient copies at select public offices, public libraries or panchayats for inspection by interested people” (APSPCB, 2007a). He also informed the lawyers who filed the notice that the PH was postponed and that the new date would be publicized. He clarified that the APSPCB did not have a website and therefore the EIA report had been uploaded on the website of the State Forest Research Institute (APSPCB, 2007b). The government issued another notice informing the public of the hearing on June 30, 2007. One copy, issued by the DC of Lower Dibang valley district, appeared in the Roing times of May 27, 2007. It informed the readers of the date, time and venue of the Public Hearing and requested everyone to attend the hearing to “make it a grand success” (Government of Arunachal Pradesh, 2007). In this case too, the government assumed that there would be no local opposition or conflict over the project.

These public hearings were postponed by several months because of the monsoon. When the rescheduled public hearing was conducted on January 29, 2008 it opened up several issues for discussion. These were aspects that the EIA report of the project, that was made available for reading online and in hard copy, had missed out. Unlike

the Lower Subansiri project, where the upstream and downstream issues were split across two states, in the Dibang project, the affected downstream areas were also within Arunachal Pradesh. At the public hearing, paddy farmers living downstream asked to be treated as project affected and demanded compensation. The project authorities dismissed this and the onus of compensation was sheeted to the state department through the Rehabilitation and Resettlement plan. The officials also stated that the issue of resettlement would be considered after the project was constructed and before the reservoir was full. Several members of the audience asked questions regarding the risks of increased seismic activity due to faults in the dam structure and loss of other infrastructure like bridges and roads due to submergence. The answers to these did not contain, specific details, saying “proper compensation will be paid...”, “alternatives... will be provided..” or “committee...will survey...” (Government of Arunachal Pradesh, 2008b). The project proponents opened and closed dialogue on project impacts based on their convenience because they had the power to do so. The questions and answers documented in these public hearing minutes display the government’s evasion of real issues while pretending to consult.

The January hearings also could not be completed as only one of the two scheduled hearings could be held due to weather conditions. The state government continued its efforts to hold the pending hearing by announcing it almost every month from March 2008 onwards. The announcement of the July 30, 2008 hearing stated that the venue of the hearing would not be New Anaya but Anini, the headquarters of the Dibang valley district. This meant that the hearing would be held far away from the affected villages. Some of the directly impacted villages would have to travel between 70-120 kms to participate in the hearing. By August 5, the pro-bono law firm, LIFE, issued another legal notice, on behalf of their client Mizu Umpe, the head of the Dam Affected Citizens Committee, on the grounds that the change of venue made it impossible for the villagers to come to this hearing (LIFE, 2008). This time too the hearing was cancelled by a letter issued by the Member Secretary of the Pollution Control Board (APSPCB, 2008).

The use of legal notices to postpone the hearings show that those opposed to the dam project did not want to be part of a farcical process that they perceived as meant to extract consent. They also did not want to be seen as closed and resistant to dialogue.

So they favoured stalling the hearings through the procedural means. The participants of the first public hearing on January 29 had pointed out fundamental flaws in the EIA report. Those opposed to the project claimed that there was no point in consulting local people with the same EIA report since it would not allow for better discussions or good decisions. The protestors suggested, reasonably, that the hearings should be held after the EIA report was reviewed and revised (Government of Arunachal Pradesh, 2008b). This made the state government appear openly desperate to finish the public hearings as a formality.

As shown in the following sections of this chapter, after a series of unsuccessful attempts and open conflicts, the government finally held both the public hearings in 2013. The depositions by members of the public in the New Anaya public hearing show that most of the protestors accepted the inevitability of the project. The state government and the Centre were both keen for implementation, while the protestors were burning out. They articulated their sense of loss in profound ways. As the General Secretary of the AIMSU said, “It has been six years of resistance till this morning”. (Government of Arunachal Pradesh, 2013b) The deliberations now focused on an accurate audit of community losses and higher compensations. At this public hearing, several speakers established that the project areas were within community lands and the community would be liable for compensation. They demanded better rehabilitation and clear time frames for the completion of the project. There was no clarity on the prices they would be paid for their land and many complained about NHPC’s non-commitment through these years. There were also suggestions that NHPC provide jobs and invest in skill training and education facilities for these regions. Once the public hearings were completed, the state government put out a note on their state web portal announcing that the “much awaited” hearings had been “successfully conducted” (Government of Arunachal Pradesh, 2013a).

The official documentation of the public hearings is between 2 pages and 18 pages. The hearings are documented in English. They include the official minutes, lists of names and the signatures of the participants in Annexures and summaries of the presentations and speeches. The documents highlight that the officials view public hearings as a process of collecting individual testimonials. This format limits

decision-making to an aggregative method that is based on individual preferences as opposed to a deliberative form of decision-making (Blau, 2011; Elstub, 2010).

The analysis of the public hearing documents also gives some insight into who participated and who did not, who spoke, who listened and whose voices did not figure in these public events. Over 2000 local people actively participated in the hearings across the two projects. In the Dibang public hearings, a total of 718 people participated. The first hearings on Lower Subansiri involved a small number of participants who were treated as “representatives” of their communities. The DC of Lower Dibang Valley recorded the official minutes of the Dibang public hearing held on Jan 29, 2008 (Anon, 2008a). According to his report, 1200 people “attended” the hearing that lasted from 10 am to 9 pm, but only 138 people signed the attendance sheet. At this meeting, there were a series of presentations by the DC, the Member Secretary of the APSPCB, General Manager NHPC, Deputy Director, National Productivity Council (NPC) who had done the EIA report for the project and Senior Manager (Environment), NHPC. After all these presentations, when the members of the public were allowed to present their views, 31 people spoke one after another. There is no information in the documentation of how these individuals among the others were chosen or had the opportunity to speak. NHPC and NPC officials responded “as much as possible” to the questions and concerns raised. At 9 pm, the summary of the day’s proceedings was read out to the audience. A document, “Annexure A”, listing the concerns of the 31 speakers and the official responses of the NHPC and NPC officials, was submitted as part of the minutes (Government of Arunachal Pradesh, 2008b).

The final public hearings for Dibang were conducted on 11 and 13 March 2013 at Roing and New Anaya (S. Kumar & Tam, 2013; Miso & Tam, 2013). The minutes of the hearings state that 32 officials of NHPC were at the hearing at Roing. 428 people attended the hearing out of which 33 spoke. In New Anaya, 28 people out of an audience of 290 spoke their concerns. The audience was specifically requested “not to use unparliamentary words”. The concerns that emerged from these last hearings for the Dibang project after conflicts that lasted six years were recorded in two short documents of 18 and 13 pages with the questions and responses in annexures. Both the Dibang and Lower Subansiri public hearings that were held in Arunachal Pradesh

were largely attended by members of indigenous communities. Nearly all the speakers and signatories of demand memos and petitions were also indigenous people. The presence of indigenous people and the lack of non-indigenous representation in the large dams discourses in Arunachal Pradesh frames these public hearings as part of indigenous public spheres on dams in the state.

Social theories of participation and communication rightly point out that participatory spaces reflect the flaws of democracy (U. Kothari & Cooke, 2001). The hearings themselves and the processes of recording if not institutionally designed to overcome particular socio-cultural and political biases. Such biases could foster inequality and unfairness of participation (Chess & Purcell, 1999; Fung, 2006). For instance, the hearings may hear “the usual suspects” (Macnamara, 2017) by giving preference to leaders, to institutional bodies over individuals or collectives, to men more than women or to “authentic” locals over migrants. There may be an overrepresentation of certain groups such as opponents or proponents or a difference between the population demographic and the participants of the hearings (Chess & Purcell, 1999). In such instances, the hearings may be affected by partisanship and decisions may be contingent on who is in the space of participation or who gets to be heard. Those who are present and who participate may have a better chance at influencing the discussions, than those who cannot or will not speak. The final outcomes of participatory processes may be contingent upon who is present in the space, who speaks and who is heard. Macnamara calls this the politics of listening (Macnamara, 2017). Participatory meetings that have an overwhelming bias towards one or other extreme view could be rejected as a farce by governments or those who participated or remained outside the hearings. These skewed or non-ideal forms of participation may provide the reason to ban or prohibit participatory meetings altogether. But these practical cases of participatory governance also illuminate the distribution and use of power and could therefore politicize the issues being discussed.

The number of participants and their detailed comments at the hearings made orally and in writing indicates the desire for participation among the people of the region. It is reasonable to hold an assumption that everyone wants to be heard and be counted in a democracy. For the citizens of the Northeast, a region marginalized in national politics, this is a genuine desire. The active participation of local people, normally

excluded from mainstream governance, in these public hearings indicates their aspirations and concerns. In fact, their need to participate may be directly related to the experiences and narratives of exclusion and marginalization in this region.

6.2 Tactics to Control Hearing Outcomes

Scholars point that public hearings are treated as a formality to tick off the approval for a project rather than an opportunity for meaningful deliberations on project impacts (Rajamani & Ghosh, 2016; Sinclair & Diduck, 2000). As stated in Chapter 4, the experience in one case led the National Environment Appellate Authority (NEAA), a special body set up to look into environmental grievances, to state “in view of the increasing environmental awareness of the Public, neither Ministry of Environment and Forests nor any of its instruments like the EAC's can brush aside the public opposition to the various developmental/ infrastructural projects and schemes.”²³ The Appellate Court warned the Ministry of Environment and Forests and all its EIA appraisal committees that they should offer clear justification for their decisions “especially in respect to public opposition to project”. It emphasized that “whenever the public objections are involved, they should clearly indicate such public concerns have been addressed while arriving at final recommendations/decision” (ibid). Despite such clear judicial directions to the Ministry on meaningful implementation of its own regulations, governments have instrumentalized these forums to generate approvals for projects.

The public hearings for the Dibang and Lower Subansiri projects were also managed to serve government purposes. For instance, in his opening remarks in the public hearing meeting at Hapoli for the Lower Subansiri project, the Additional Deputy Commissioner informed the gathering that the project “is being constructed” by NHPC for the generation of electricity that would be beneficial for the state of Arunachal Pradesh. The project was presented as a foregone conclusion as if it had already been approved.

²³ High Court of Delhi judgment November 26, 2009 dated in Writ Petition (Civil) No. 9340/2009 & CM APPL Nos. 7127/09, 12496/2009, Utkarsh Mandal v/s Union of India & Ors.

The Dibang public hearings were scheduled and cancelled several times. The government was so focused on completing the hearings as soon as possible that on one occasion they scheduled it in January. That hearing had to be aborted due to heavy snow, which blocked road transport from Roing. But many community leaders of the protests also felt that hearings had been scheduled at that particular time of the year when Idu Mishmis celebrate their most important festival, Reh. This was perceived by the protestors as a means to sabotage their participation in the hearings (Independent People's Tribunal, 2008).

However, the greatest insult to the protestors of Dibang came when the Prime Minister Shri Manmohan Singh, on a visit to Arunachal Pradesh, laid the foundation stone for the Dibang project on January 31, 2008 in Itanagar, the state capital almost 400 kms away from Roing (Jishnu, 2008). This fait accompli undoubtedly established the public hearings a farce. It became evident that the government was only conducting the hearings to comply with the process mandated by law. As Tone Mickrow said to the participants at the IPT hearing organized by civil society groups, "What is the use of our memoranda and letters? I find them ridiculous now. Our memos are lying in the dustbin" (Independent People's Tribunal, 2008). Being taken for granted by the governments strengthened the politicization and resistance in the region. The All Idu-Mishmi Students Union called for a boycott of the rescheduled hearing on March 12.

Even as the legally mandated public hearings hung over the project approval, the state and central government took steps towards implementing the dam project. Despite all this opposition and no approvals, NHPC invited bids for construction of roads, bridges and tunnels. The state government's decision to borrow money against the project from NHPC and the Prime Minister's act of laying the foundation stone communicated to the protestors that their views were immaterial. This generated more opposition to the public hearings caused greater resentment against the government and dam proponents.

In a public meeting of the Independent People's Tribunal (IPT) in February 2008 in Itanagar, a public hearing organized by a non-governmental organization called the

Human Rights Law Network (HRLN) providing pro-bono legal services, a large group of people from the Dibang and Lower Dibang valley participated (Independent People's Tribunal, 2008). The participants asserted frequently during the meeting that they had turned up in large numbers because of the denial of a proper hearing by the government. They wanted the government to listen to their concerns instead of conducting mechanical hearings. Their statements reveal the difference between official documentation of public hearings and the experience of the participants and suggest that public hearing documentation was "fixed" towards showing legal compliance regarding participatory procedures and for manufacturing faux consent for the project. For example, a participant stated that the EIA report was only available in English. Another said that those who were "affected by this project, got entry to the public hearing with much difficulty" and that several participants "had to push against the police to enter the hall" (IPT, 2008, page 20) Kotige Mena, a member of the district vigilance committee under the SC/ST Act²⁴, who had made a detailed submission at the January 2008 public hearing, said that the public had to shout to be heard. These descriptions of the public hearing are consistent with those of a protest rather than a discussion or consultative forum. According to one participant "almost 99% of the speakers at the public hearing on the Dibang project said that they opposed the project" (IPT, 2008, page 21). They complained that the hearing was a hoax. Yet the official written documentation of the public hearing gives no indication of the efforts by local people to be heard or of the scale of opposition to the project. One may surmise from the minutes of the final hearings for the Dibang project that the hearings were concluded without difficulty or contestation. These show that the public hearings were marked by disempowering procedures, limited ability to influence discussions and government's unwillingness to hear issues of relevance (Chess & Purcell, 1999).

The effectiveness of the public hearings was affected by treatment of genuine inputs from the participants. The protestors had highlighted, over six years, problems related to poor baseline data, uncalculated risks and grief over the loss of their ancestral landscapes. But the official documentation restructured all such feedback into mundane demands. The bureaucratic mould of the public hearing turned all local concerns into a set of asks. The closing remarks in the documented public hearings

²⁴ The Scheduled Castes and The Scheduled Tribes (Prevention of Atrocities) Act, 1989.

are conclusive. The public hearing minutes established the projects as certainties, exhorting project developers to take the “genuine concerns” of the local people on board in the implementation of the projects. They also reiterated the many material benefits of the projects, implying that the projects, therefore, deserved the support of the people of the state. The purpose of this documentation seems to be to rubber stamp project approvals while appearing to consult the affected publics.

The organizers of the IPT invited the dam building companies as well as state government representatives. But they did not respond either orally or in person. This disappointed the participants of the IPT (Independent People’s Tribunal, 2008). The proponents of the project were invited for a dialogue outside the official space of the public hearings. But the proponents seemed uninterested to avail of this opportunity to learn about the concerns of the affected people. It reflected poorly on the government and dam companies that they would attend only those public hearings where they had control of the script and the outcomes. The official hearings were about the government’s power to decide what to hear. Public opposition in the region escalated because of the growing feeling that the government was not interested in the views of affected people. The local people felt that, regardless of their conviction, they were not being heard.

By 2011, there were spontaneous protests or blockades against the Dibang project. The government deployed several paramilitary troops in Roing to curb these protests. The local police authorities and the district administration were ordered to maintain tight security over the district capital. They suspected all gatherings of locals to be mobilizing efforts of the protestors. On Oct 2 2011, STF and CRPF personnel entered the premises of a *Durga Puja pandal* (temporary pavilion made for a festival to worship Goddess Durga) and opened fire at the gathering. Among the ten who were shot, seven were of or below the age of 17. Mr. Rala Mega, the General Secretary of the *Durga Puja* committee, filed an FIR stating that the violence was unprovoked and that people who were supposed to defend the law had actually violated it.

By the end of that week, the Idu Mishmi Cultural and Literary Society (IMCLS) and All Idu Mishmi Students Union (AIMSU) and others had written to the Home Minister about the “misuse of power by the administration” (AIMSU, 2011). They

held the District Collector and Superintendent of Police fully responsible for the violence. They complained that the state government and local administration had been harassing local people for several months and “actively propagating the existence of anti –social Maoists” among the locals. They asked for the suspension of the officers of the local administration and the “evacuation of all paramilitary forces namely the CRPF, IRBN and the STF stationed at Roing headquarter” (ibid). This incident displayed the complete failure of the government’s consent making efforts on the Dibang dam.

The period between 2009 and 2013 was a war of attrition between the local government authorities, the dam building company and the protestors. The state authorities began accusing the leaders of the anti-dam agitation of engaging in “anti-national” activities (Anon, 2010b). Newspapers carried statements made by prominent political leaders that international groups affiliated to China funded the protests. Even as the state government was dealing firmly with the opposition, the Company was making efforts to improve its image among the local people (Anon, 2010e).

The militarization of the region and the aggressive stance of the state government caused fractures among the protestors. Raju Mimi, an activist and one of the leading voices of the movement in Dibang, said in an interview to a journalist in 2013, that the “Maoist card” used by the government affected the movement. He stated, “Suddenly, we heard that Maoists were opposing the dams. We have insurgency issues here but had never heard of any Maoist. Many feared that the government might use the Maoist excuse to apply the draconian Armed Forces (Special Powers) Act. This broke the resistance” (Mazoomdar, 2013). The leaders of the protest groups felt responsible to their communities for the state of terror created by the government. All of them were not in favour of continuing to oppose the project, given the anti-democratic policies of the state and the cost to their communities. By 2013 when the final public hearings for the project were held, there was also a distinct weariness among the protestors after six years of opposition to a government unwilling to budge from its position.

6.3 Strategies to Expand the Public Sphere

In the earlier section, I showed that the government had exceptional influence of authority over the results of the public hearings. Yet, I show that the outcomes on the project were still open. This was testimony to the role that affected communities and public hearing participants played in expanding the public sphere. These groups mobilized and organized for their voices to be heard beyond the rigidly and narrowly structured forums of the public hearings. These strategies could be called the communicative influence of groups (Fung, 2006).

The participants of the public hearings made enormous efforts to understand the project by reading the documents like the EIA and EMP. They also invited and engaged experts to explain the scientific aspects of the risks. They collected data on project affected people, conducted their own surveys and group discussions to compare the data given in the official reports with their findings. They also educated themselves in the legal procedures and regulations that were involved in decision-making. Their collaborative efforts to increase knowledge offset the problems of low information outreach by governments and lack of credible information for participatory processes (Chess & Purcell, 1999).

The participants corresponded with various officials in government and political representatives about the discrepancies they found in the official reports. They came more than half the way to engage with the government's hydropower plans and the companies who would build them. The government and dam companies, on the other hand, appeared disingenuous in treating the public hearings merely as a mandatory legal requirement.

Since the governments in India have failed to hear public concerns, civil society organizations have traditionally organized *jan sunwai* or independent public hearings to give voice to the problems raised by citizens. These have been conducted in several sites and have given affected people a forum to discuss lack of government and corporate accountability, social injustices and curbing of civil rights. The People's Commission on Environment and Development, a New Delhi based group, conducted two hearings on environmental and land conflicts in the Northeast region in May 1996

and December 2002 (PCED, 1996, 2002). HRLN held a similar exercise called the IP's Tribunal (IPT) on the subject of large dams in Arunachal Pradesh in February 2008. The Arunachal Citizens Rights and the NEFA Indigenous Human Rights Organisation hosted the IPT locally. It included field visits, testimonies by affected people, information sharing, and discussions and debates (Independent People's Tribunal, 2008).

Deliberation forums like the IPT allowed the participants to discuss issues in an open and non-threatening manner, to clarify several concerns and collectively analyze the information available. The IPT also created a platform for locals to reflect on their experiences of the official hearings, develop strategies for new actions and seek support from trusted organizations. As stated by one participant at the IPT, "If the government, including the Prime Minister, is hell bent on subverting the letter and spirit of its own laws, we see no point in participating in such cosmetic public hearings. We have therefore called for a boycott of the second hearing to be held on March 12th in New Anaya" (ibid). On March 12, 2008 the residents of Dibang Valley blocked the roads with a large banner that screamed "NHPC Go Back".

After 2008, protests and blockades were frequent. The All Idu Mishmi Students Union (AIMSU), Dam Affected Citizens Committee (DACC) and the Dibang Valley Youth Association (MDVYA) Anini, Dibang Valley District, Arunachal Pradesh submitted a memorandum to the Deputy Commissioner a week prior to the next scheduled hearing of September 23, 2008 (AIMSU, 2008). This time they had a clear demand; the scrapping of the public hearing for the 3000 MW Dibang Multipurpose project and of the project itself. They announced a blockade in the Dibang Valley from September 18th onwards. By then, Assamese protestors were also organized against the Lower Subansiri project. The downstream affected people of Assam, mobilized under the banner of *Krishak Mukti Sangram Samiti*, worked closely with the indigenous communities of Arunachal Pradesh affected by the Dibang project. The downstream mobilizations of Assam are discussed in detail in Chapter 8. Although the proposals for large dams had divided the river dependent communities of the region as upstream and downstream affected people or as members of states who were in conflict over water regulation, the government's consent making procedures mobilized them and generated solidarity and collective agency.

One of the main achievements of the mobilization against large dams in the Northeast region was the demand to extend the standard of consent to “free, prior, informed consent” (FPIC). This was a demand even before FPIC was officially recognized as a standard of consent in International Human Rights Law through Article 10 of the UN Declaration on Rights of Indigenous Peoples in 2007 (United Nations, 2007). The Declaration was a working draft for 25 years and it outlined the role of indigenous peoples in decisions related to the development of their ancestral lands. The World Commission of Dams upheld FPIC as one of the principles of decision-making even before the UN officially adopted it (WCD, 2000). The Indian government rejected the WCD report (R. R. Iyer, 2001). The Indian government was a signatory to the UN Declaration but did not implement it as it maintained that there are no indigenous peoples in India unlike in settler colonies like Australia (AIPP, n.d.; IWGIA, n.d.). Yet, the mobilized groups of the Northeast publicly demanded FPIC as the standard for the hearings in their region. FPIC appears in several letters, submissions, petitions and pamphlets about the issues of the NE dams. The IPT too recommended more in-depth assessments, information sharing, debates and discussions so that the people of the region could take FPIC based decisions (IPT, 2008, page 8). The demand for FPIC as a standard of decision-making for dams in Northeast India was important for the transnationalization of the protests against large dams in NE India. Several organizations that were involved in the UN process supported the FPIC demand articulated by activists of the region (AIPP, 2013; IWGIA, 2013; NPMHR, 2008).

Activists also saw the large dams discourses in the Northeast region as part of a national “right to information” movement. The central government passed the Right to Information Act in 2005. This legislation strengthened the efforts of civil society organizations working on public accountability. The law allowed citizens to file applications seeking information and also made the government responsible for disclosing information about its workings *suo moto* (on its own). Those seeking information could also inspect government files to obtain information. Activists, journalists and researchers engaged with the large dams discourses in the Northeast used RTI to obtain information about the proposed projects (Chakravarty, 2015; Kaushal, 2014; Yumnam, 2012).

The role of the local media in Dibang valley was particularly notable. The public hearings in Dibang gave the local journalists the impetus to collect and disseminate public information on the impacts of dam projects. The weekly newspaper of the Dibang region, *The Roing Times*, played a central role in public education about large dams. It not only covered news and local concerns about the proposed dam project, it also became a repository of knowledge on the political economy of dams and development in the region. The issue of May 27, 2007 carried the headlines “Tender bid proposed for 10 Mega Hydel Project at Dibang Basin”. It stated that even as the people of Dibang valley were debating the impacts of the project for which the Public Hearing was announced, the state government had invited bids for ten more projects in the Dibang valley (Anon, 2007c).

The articles published in *The Roing Times* became a tool in community mobilization and to build networks across and beyond the Northeast region. The newspaper of June 2, 2007 had on its front page a news article about “social awareness programmes conducted by ICLS and AIMSU” that were attended by “many prominent social activists from all over the country”. The news report of the program was detailed and covered the content of each speaker’s presentation (Anon, 2007d). The newspaper also published scientific papers and arguments related to the impacts of large dams. The issue of May 27 carried excerpts of a paper by noted geologist Dr. K.S.Valdiya and the next issue published a report of a study done by two seismologists. The papers discussed the dangers of constructing large dams in the seismically active region (Anon, 2007e; Valdiya, 2007). These issues became public before the scheduled hearing of June 30, 2007. The organizer of these programs, Mananya Mena, President of the Idu Azo Charitable Society said, “We are not against NHPC or any persons engaged with it. Our motive is just to spread awareness about the public hearing and the EIA report” (Anon, 2007b). The statements made by local people in the final public hearings show that the local media was successful in revealing the partial plans and disinformation circulated by the project documents and mobilizing community voices to speak up about them.

The organizing and mobilization efforts reached out to large numbers of dam-affected communities in the Northeast region across Arunachal Pradesh’s river valleys in Siang, Tawang and Kameng regions and across the Northeastern states like

Manipur, Sikkim and Meghalaya. These efforts generated relevant information for use at future public hearings. The new knowledges generated through these processes of movement building helped to widened the scope of information presented in the EIA reports and engaged people in the debate more widely than the circumscribed “project affected” zones of the projects. It thus broadened the agenda for public debates on dams and development in the region. Globally, the government efforts of public hearings forums have caused scholars to theorize consultations as a means of generating consent. However, if viewed from the lens of practical outcomes beyond the approval or rejection of projects, public hearings may be seen as a generative space allowing possibilities for the interlinked processes of collective agency making, knowledge making and public making.

6.4 Conclusion

In this chapter, I analyzed the public hearings of two of the largest proposed dam projects in Northeast India to show how public hearings are government tools for generating consent. However, these practices at faux consultation politicized and radicalized people. The first section of the chapter highlights that governments were least interested in listening to people at the public hearings for these projects. Their main aim was to present dam based development as inevitable and manufacture consent for project approvals. In the second section I showed how the government’s implementation of public consultations displayed “Hearing but not listening” (Conrad, Cassar, Christie, & Fazey, 2011). I showed this by analyzing the range of tactics of power and authority deployed by the government. In the third section I showed the various strategies adopted by the affected communities to make their voices heard. They engaged in and were successful in expanding the sphere of public discourses on large dams.

I discussed the possibilities and limitations of public hearings, mandated by law, as a form of participatory governance by analyzing the official and popular documentary material produced on large dams in the region. As several scholars of PEG have shown, the structure and format of these official public hearings are limited and circumscribed, allowing the government to manage public expectations and potential conflicts that could arise during project implementation. However, the faulty and

biased implementation of public hearings failed at achieving these government objectives. The public hearings for the Northeast dams were successful in transforming the political understanding of dams and development in the region. Far from working as a forum for consent manufacturing, they politicized the local communities and project-affected people and enabled them to interrogate the official positions outlined in the project documents and government statements. The implementation of the hearings in a situation of disinformation, disagreement and conflict revealed the power relations embedded in the act of listening by the government and laid hollow the government's claims of effective local consultation. The desperate efforts of the government to conduct the public hearings to the extent of militarizing the region, displayed the hearings as the government's strategic tool to close off the dialogue on dams and development in the region rather than encourage it.

CHAPTER 7

PEG AND SUSTAINABILITY DEBATES IN ARUNACHAL PRADESH

In chapters 4 and 6, I showed how the legally mandated PEG processes, in the form of public hearings, were managed by governments with the intention to extract consent from communities in the Northeast region. I concluded that while public consultations have been theorized as tools of consent manufacture and consensus building, it is useful to understand public hearings as a forum of politicization and collective agency building. I showed how the management of public hearings for the proposed hydropower projects in the Northeast region generated critical assessments of the government's proposals to develop the region. But can this form of participatory governance become a credible space for negotiations between environmental policy and politics and generate meaningful developmental knowledges and outcomes?

In this chapter, I analyze the contents of the public hearings held in Arunachal Pradesh for three dam projects, the Lower Subansiri, the Dibang and the Lower Demwe, to address these questions. The participants at the public hearings presented opinions, concerns and suggestions on a range of subjects such as the assessment of affected areas, compensations, resettlement packages for displaced families, local jobs and contracts from the projects, local infrastructure needs and environmental and social safeguards. These have been categorized and analyzed in this chapter along two themes; negotiations and deal making on land and local cost-benefit debates on dam based development.

Firstly, I argue that the demands made at the public hearings offer insights into the varied expectations of the indigenous communities of Arunachal Pradesh regarding development. Their views were articulated in the context of a material investment of unprecedented scale proposed for a region labeled "backward" throughout India's independent history. They engaged with discourses of development with caution and conditionally while also expressing local desires for development that were practical and meaningful to their socio-ecological context. Their views did not swing towards a

complete acceptance or rejection of dam based development until they were faced with government backlash. These precautionary responses to development in India's border areas that are critical to India's energy and environmental security are also significant to global debates on indigeneity and environmental sustainability.

Secondly, I argue that the local negotiations and deal-making for the three dam projects in Arunachal Pradesh can be understood as a form of indigenous resource politics. The lens of resource politics illuminates indigenous contestations in Northeast India, working outside the frame of postdevelopmentalism (Escobar, 1988, 1995) and local, poor or southern environmentalisms (Guha & Martinez-Alier, 1997). The participants at the hearings for dam projects in the Northeast negotiated entrenched power geometries that included the historical roots of land governance, the land owning indigenous elite of the state, and proponents of neoliberal capitalism such as the state and central governments and dam building companies. The participants at the public hearings refused to accept the land and environment of the region as static, governmentalized commodities that are under state and elite control. Based on these analytical themes, I show that the public hearings for the Northeast dams were generative not only of opinions against but beyond the official position on large dams. Through negotiations and demands, the locals made claims on their environmental topographies of land, water and forests, as they were a basis of democratizing and transforming the local indigenous economies and community wellbeing. In the fourth section, I discuss the significance of these new knowledges about how indigenous communities prioritize and envision resource-based development.

7.1 A Mixed moment of Development

As stated in chapter 3, Northeast India is a frontier region and a zone of conflict due to a complex colonial and postcolonial history. The landscape is cluttered with arbitrary inner lines at the Himalayan foothills and India's international boundaries and these demarcate the territories of Northeast India's indigenous peoples. The postcolonial administration systematically excluded these regions from development in the name of protecting the tribal way of life (Elwin, 1964, 1965). A regime of tribal protectionism has led to local tribal communities being tied to parcels of land and

prohibitions on sale of land to ‘outsiders’. As shown in Chapter 3, this turned the region into an ethicized landscape (Baruah, 2003a). The effects of communities being ‘fixed’ to defined territories and haphazard attempts by the government at integrating the border state into a capitalist economy, have been economic poverty, uneven development and a pervasive sense of marginality. These conditions have further provoked violent land based struggles and a dependence on identity based politics for the transformation in the region (Barbora, 2002).

Globally, hydropower technology has earned disrepute in the cause of energy production and development (Gujja & Perrin, 1999; Sovacool & Walter, 2019; WCD, 2000). Yet, the Indian central government touted large dams as crucial for development in the region. Within a few years, the state government of Arunachal Pradesh assumed charge of project planning. The collusion between the state government and dam builders resulted in several dozens of rushed agreements to establish dam projects in the state. This became commonly known in the region as the ‘MoU virus’ (Anon, 2009; Chakravarty, 2015). The central and Arunachal Pradesh state government’s instrumental use of hydropower dams to attract private capital is elaborated in Chapter 3. From 2003 onwards, the hydropower projects proposed for various parts of Arunachal Pradesh were discussed extensively in the regional and local media.

The official narratives on dams and development in Northeast India and the methods of implementing PEG in their decision-making may be understood as a form of coercion and co-option to gain consent for the proposed projects. However, the attempts of local people to appropriate “projects of national importance” and stretch them to address their own practical developmental concerns and desires are worthy of analysis. One participant, Rego Umpo, representing Kronli village in the Dibang project area, captured this sentiment by saying “We are going to lose everything, what will we get in return?” (Miso & Tam, 2013) The participants, who were from indigenous communities, created a space between the extreme positions of supporting or opposing large dams. They repeatedly justified their participation in the hearings as necessary to generate local developmental gains from the proposed projects. As one participant at the Lower Demwe public hearing, Nuney Tayang, stated “The project should come up in the region for the benefit of the region” (Tayang, 2009). The locals

prioritized different and multiple objectives from the projects than those officially desired by the Centre, namely producing clean energy for the nation.

McDuie-Ra elaborates the need for scholarly attention to the “pro dam actors” in the neighbouring Northeastern state of Sikkim (McDuie-Ra, 2011). He concludes that the agency of the Northeast communities, marginalized to date by India’s mainstream development, sees the proposed hydropower program as a new terrain for realizing diverse local aspirations and remedies for their long standing problems of land governance and uneven development. In the public hearings in Arunachal Pradesh, pro dam views were present though not uncontested by other participants, who cited environmental and social risks of large dam based development and the lack of adequate benefits to the indigenous communities. More significantly, public hearings were framed by the friction between the two-way impulses of “protecting traditional relations to land and identity and engaging with the “reconciliatory developmental actions of the state” (Singharoy, 2012).

7.2 Negotiations and Deal Making on Land

“...Land in Anjaw is not good for agriculture; only hydro project can help to meet earnings. Grievances of public should be fulfilled. Transparency should be maintained. Land owners should be contacted directly and an amicable/reasonable rate should be fixed.”

Bahamso Pul, Leader Student Union, All Mishmi Students Union (Jeinow, 2009)

The upland tribal communities of Arunachal Pradesh follow an “integrated livelihoods strategy” that includes the collective management of lands for food production. Community lands were cultivated by ‘*jhum*’ or ‘slash and burn’ shifting cultivation and mixed cropping (Ramakrishnan, 1984). *Jhum* was, until recently, the predominant form of agriculture in the upland mountain regions of Asia (Kerkhoff & Sharma, 2006). Every year, a new patch of forest within the community’s territory is opened up for farming. The following year, this patch stays fallow while a new patch is cultivated. The *jhumias* or *jhum* farmers move across plots of land within their territory year after year and return to the first patch at the end of a *jhum* cycle. When new plots are farmed, the old plots regenerate into secondary forests. *Jhum* areas are

usually farmed collectively but plots of land may also be allotted to individual families of the clan for seasonal use. In different regions of the Northeast, the *jhum* cycle varies a lot due to negative policies, pressures on common property regimes and indigenous institutions (Choudhury & Sundriyal, 2003).

This form of cultivation evolved to provide food security in upland environments where settled farming is neither ecologically nor economically suited. But central agencies and state agricultural departments have demonized this agricultural system as destructive and “primitive” due to soil erosion, water run-off, and forest and wildlife loss (Kerkhoff & Sharma, 2006). There were efforts to sedentarize and “modernize” traditional upland farmers across the Northeast and parts of upland South-east Asia (Scott, 1998). This made upland farming cost and labour intensive due to the requirements for technology and agricultural labour. Most parts of the Northeast have protectionist regulations related to the sale or transfer of land dating back to colonial times. In Arunachal Pradesh, sale of tribal land is permitted between Arunachali tribals but ‘outsiders’ are prohibited from buying land by a state government notification on land transfer, which is supposedly meant to secure the locals against exploitation by migrants. These rigid land sale prohibitions have skewed land holdings internally among tribal communities. Mishra refers to these changes as “informal privatization of community owned land” as the traditional landholdings become altered not officially but through “informal arrangements with community institutions” (D. K. Mishra, 2018). These changes in land holdings led to privatization and commercialization of land for horticulture, plantations and rice cultivation and also created intense class stratification in the state. The creation of an elite class of landowners has continually undermined traditional systems and institutions for collective land management (ibid). An Act was passed in 2000 to clarify land rights through cadastral surveys but it was only partially implemented (Arunabh Saikia, 2018).

In addition to agricultural policies, national conservation laws and policies prohibit forest land use by local communities in three ways. Firstly, over 60 % of the total land area of Arunachal Pradesh is under the *de jure* ownership of the State Forest Department under the Indian Forest Act, 1927. These are classified as Reserved Forests (12%), conservation zones in the state in the form of National Parks and

Wildlife Sanctuaries (12%) (Government of Arunachal Pradesh, 2017). Even though the law mandates that local forest use rights ought to be identified and ‘extinguished’ before the forest lands are reserved, this was not done in many places including Arunachal Pradesh and most forest regions of India (Ministry of Tribal Affairs & UNDP, 2014; Sarin, 2014). This classification of Arunachal Pradesh’s forests as state property has meant the loss of these resources to the local indigenous communities. Secondly, Unclassified State Forests (USF) constitute 37% of the total land area of the state and 60% of the total area recorded as forest in the state (Government of Arunachal Pradesh, 2017). Although, on paper, these forest areas are under the State Forest Department, indigenous communities claim them under customary law (Fernandes & Barbora, 2008). However, indigenous communities are not free to use USF as they choose due to this dual ownership claims. Thirdly, the main forest based economic activities undertaken by indigenous communities such as timber harvesting and hunting are illegal according to recent judicial orders on forests and India’s wildlife laws (Aiyadurai et al., 2010; Dutta & Yadav, 2005; Nongbri, 2001). Arunachal Pradesh forms part of the Eastern Himalaya biodiversity hotspot and wildlife biologists who have conducted research in the state have reported faunal life including large mammals that are new to science (Athreya, 2006; Captain, Deepak, Pandit, Bhatt, & Athreya, 2019; Sinha, Datta, Madhusudan, & Mishra, 2005). Many locals, understandably, resent these forest and wildlife laws. Dr. Tayang, a prominent spokesperson of the community affected by the Lower Demwe project, said,

“...locals want development as in other parts of the country and they simply should not be taken as care-takers of the environment for the benefit of the rest of the country.”

Dr. S Tayang, Medical Officer, Hayuliang (Tayeng, 2009).

These top-down land, agricultural and forest regulations have affected indigenous land and natural resource use and management practices in Arunachal Pradesh. It has led to elite capture of traditional management institutions, privatization and concentration of natural resources in the hands of tribal elites and constrained economic and developmental opportunities for the communities as a whole. These changes have gradually eroded the notion of ‘land as local livelihood’ in Arunachal Pradesh. These long standing issues could have been remedied through

comprehensive, stable and inclusive land reforms and sustainable development policies. In their absence of reforms to secure natural resources in the interests of indigenous communities, the remaining land owning families in the regions where the dams were proposed looked to monetize land available under their partial control. Since 2000, the Northeast states have witnessed the introduction of large numbers of extractive projects such as mega dams. The prohibitions on land transfer did not extend to government promoted projects as they acquired or purchased tribal land in the region for their projects such as oil prospecting and coal mining (Gohain, 2008). The large dam projects proposed to come up in Arunachal Pradesh would purchase private or community lands from the indigenous people and turn them into submergence zones and construction areas. The Arunachal Pradesh state forest department approved the use of such forestlands by dam projects due to its *de jure* ownership of these areas. The forest department accepted the inevitable impacts as the cost of capital investment in the region. In the absence of land based economic opportunities and the forced severance of the socio-ecological relationships due to top down policies, local communities saw the proposed hydropower projects in the state as an opportunity to address the resource constraints they faced. At the Lower Subansiri, Dibang and Demwe project public hearings, many speakers brought up the issues of pending land surveys, compensations for land that might be affected by the project and resettlement of displaced people. These public hearings show that indigenous communities saw the proposed hydroelectric projects as opportunities to capitalize land whose access and uses had been restricted by formal and informal regulations and the incomplete and stalled cadastral survey and demarcation of landed property.

Re-survey of affected areas and people:

“How the 2 years property survey was completed in 9 months; re-survey should be done in consultation with PAFs”

Sukhio Mam of Old Pukhri (Tayeng, 2009).

The Lower Subansiri project, the first of the large dams to be taken up for implementation in the region, underwent extensive public scrutiny of its submergence and project impact areas. The project’s claim of major benefits and low impacts and its

compensatory package for the locals were based on an official survey of affected lands. The project claimed that only two villages, Gengi and Siberite, would be submerged and therefore only the 38 families losing their homestead would need to be rehabilitated (Vagholikar & Ahmed, 2003). At the public hearing at Ziro, Taniya Bini, a member of the newly formed 'Local Implementation Committee' claimed that 12 more villages, which he named, would be submerged according to the project design (Gyati, 2001). The land in these villages belonged to clans who had vacated these villages long ago. The Chairman of the Public Hearing then decided, with the concurrence of the panel members, that the petitioner should give the names of villages, claimants and the area of land to be submerged to the General Manager, NHPC. These details were to be given to the District Collector of the Lower Subansiri district and the Divisional Forest Officer (DFO) so that NHPC, affected people or their representatives, representatives of the Forest Department and of the district administration could undertake a joint survey "to ascertain the authenticity and veracity of the claim". If these areas were also to be submerged, they would be "suitably incorporated/adjusted in the land requirement of the project" (ibid). The project's submergence data was also discussed at the second meeting in the DC's office in Daporijo. The NHPC official explained that areas up to the altitude of 210 m had been included in the submergence map even though the maximum water level in the dam would be 208.25m (Lollen, 2001). The participants of the hearing expressed fears about the possible submergence of Daporijo and adjacent villages that were at an elevation of 260m. One of the participants stated that the authorities could easily accommodate this concern as the "people of Arunachal Pradesh" welcomed the project (ibid). This shows that the participants were able to expand the project-affected sites to include more areas.

The project's claims of low impacts due to few affected areas were damaged by local demands that areas and people not included in the submergence zone be nominated as "project affected". Their demands cast a cloud of uncertainty over the official cost estimations of the project. The communities of Dollungmukh who attended the fourth and last of the public hearings in Yupia, negotiated hard to expand the category of 'affected people' to include those who were engaged in fishing and collection of non-timber forest produce (NTFP), even though they did not necessarily have ownership of those lands (Takar, 2001). Bini Talum introduced himself as the Chairman, Project

Implementation Committee, and said that since the project would earn much revenue for the Company, they should be willing to recognize the tradition, culture and rights of the people of the State and seek their approval and support (ibid).

The issue of 'faulty' surveys was raised in the public hearings for all three projects as part of the local landowners demands to be included within the project affected areas. At the Dibang public hearings, Martin Mimi, a representative of Kano village, stated that "land is going to disappear" and that the "partially affected should be declared as fully affected" (Miso & Tam, 2013). Since the hearings for specific projects were held over multiple days in quick succession, usually within a week, the locals who participated in the hearings consolidated earlier suggestions from their fellow community members. Eventually, new surveys were undertaken which overwrote those framed as expert scientific studies by paid consultants for the EIAs. The new surveys would be done with the villagers, the district authorities and the project authorities (Takar, 2001).

Compensations for loss of land and forests

The state's responsiveness to the comments on the official survey encouraged negotiations on the compensations offered. In the third hearing held at Along Club, Along, the headquarters of West Siang district, the discussions centered around the submergence areas and the management of compensations for displaced people (Bhattacharjee, 2001). The sitting MLA of Along, Kito Sora actively participated in this hearing. He made sure that the people of Gengi who were affected would be included in the hearing even though they were not present at the Along hearing. The villagers of Gengi and Siberite arrived when the hearing was concluded. They were taken to the Circuit House so that the discussions with them could be included in the documented minutes along with their signatures as participants. These families from the officially recognized affected areas were mentioned in the EIA report as those directly affected by the project. It was therefore important to record their agreement for the public hearing to be seen as complete and inclusive.

At this hearing, the people of Gengi and Siberite, who had previously agreed to a lower amount, claimed that the compensation offered to them was not adequate. They

submitted a revised memorandum with a proposal for greater compensation. The NHPC tried to convince them that their demands were too high, but to no avail. The affected people also wanted to know when they would be compensated and when the resettlement procedures would be implemented. A school, a medical centre and employment for the people affected were demanded as part of the compensation package. The villages also demanded that the NHPC provide them with a written commitment that the height of the dam would not be increased in future (ibid). This concern was specifically influenced by concerns about the Sardar Sarovar Project whose height had been incrementally increased, bringing more and more lands under water²⁵.

One of the unprecedented changes sparked by the Lower Subansiri public hearings was the compensation for loss of forest lands to local communities. In the Lower Subansiri case, the State government and NHPC eventually agreed to compensate people for their use of 475 hectares of community forests within Panir and Tale Reserved Forests (RFs) even though the process of state declaration of these RFs had not acknowledged the existence of community claims as stated in the earlier section in this chapter. The DC fixed the value of compensation for these claims at Rs 18,000 per acre and so some clans would receive up to Rs. 3 crores (30 Million Indian Rupees). These sums were based on a survey report prepared by the Divisional Forest Officer (Ziro), which stated that rights were bestowed to clans within Reserved Forests under the Assam Forest Regulation of 1891 (R. Chandra et al., 2004). Due to the urgency of these contested issues and so as to be able to proceed with the project, claimants of Unclassified State Forests (USF) in the Subansiri valley were granted compensation of Rs. 9000 per acre (ibid). The ambiguity over the ownership of these “unclassified” forests was arbitrarily settled in this manner.

As stated in the earlier section of this chapter, the locals used the context of these projects to financialize forest lands under Reserved Forests and Unclassified State Forest categories over which they only had *de facto* claims. Users of forests and the

²⁵ The dam height of the Sardar Sarovar Project was allowed to be increased once in 1999 and then again in 2000. By 2014, the height of the dam would be increased more than half a dozen times from the original designed height of 80 m to 138.68 m. The Lower Subansiri project was designed to be 116 m high.

streams that would be affected by the dam projects were also successful in negotiating compensation. This was an achievement given that, in the past, compensation for loss of land-based livelihoods to non-owners of land was ignored. The lack of compensations for land users like tenant farmers and landless peasant workers was one of the major critiques of the land acquisition laws in India²⁶. The Lower Subansiri project negotiations were also unprecedented in India where *adivasi* and forest dwelling communities have been locked in battles with the forest departments over the recognition of forest rights (Kohli, 2019). These negotiations were a precursor to the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 (popularly called the Forest Rights Act) that was legislated in 2006 to “undo historical injustice” to forest dwelling communities because of forest reservations in India (Ministry of Tribal Affairs & UNDP, 2014).

Similar negotiations on the extent of lands affected by the project and on the monetary value of compensations for allowing projects to use or access community lands took place in the Dibang and Lower Demwe public hearings. Shri Unti Ekru, a member of the *Zilla Panchayat* (District Council) of the Anili-Arjoo administrative block openly stated, “*The House compensation rate (Rs 2 lakhs) as shown by NHPC Ltd is too less an amount in today’s date. The should be re-worked upon for the benefit of the people*” (Miso & Tam, 2013). Another speaker Siku Mimi, who is listed in the hearings as “Representative Fully Project Affected Villages”, stated that the “mode of compensation” for the land should be based on “the will and choice of the affected people” (ibid). Refusing to accept the decisions taken by the project authorities and the state government, he added that such a decision should be taken by “the villagers, village community, clan, sub-clan etc.” The lack of trust in the state government’s role as a mediator was displayed in the various suggestions made by the participants. Shri Apodi Menjo asserted, “*Compensation to the PAFs should be through a district committee and not through the state government*” (S. Kumar & Tam, 2013). The public hearing documents for all three projects are replete with such suggestions for the setting up of local, specialized bodies that include affected people,

²⁶ The clauses in the new central land acquisition law that was promulgated in 2013 try to address this issue through the requirement of a Social Impact Assessment of the acquisition plan. This is to enumerate and recognize the loss of livelihoods to non-owners of the land to be acquired (Kohli & Gupta, 2017).

traditional indigenous institutions and district level functionaries to determine project impact area, affected people and remedies to compensate for losses.

Resettlement

“Where is land to give to us. If the dam is constructed we shall have to go to some other country to settle down.”

Paha Mimi, a local elder (IPT, 2008, page 26).

In the public hearings for the Lower Subansiri project, the affected families were unconvinced that their loss of lands would be ameliorated by the government. The district government officials clarified to the families who would lose their homesteads that the land for their resettlement would be given to project developers free of cost by the state government. Apparently, after the approval of the project by the central government, a committee headed by the District Collector would implement, complete and monitor a Rehabilitation and Resettlement (R and R) plan within three years. While those losing access to forest lands might have been willing to accept cash compensations, the families losing their homes required “land for land”. Scholarly and activist literature on resettlement upholds ‘land for land’ as central to compensation for displacement (Cernea, 1995; Erlewein & Nusser, 2011; WCD, 2000). In Arunachal Pradesh, this concept is seen as a just form of compensation because land is central to the collective identity and socio-economic life of indigenous communities. However, the policy of land for land was difficult to implement in Arunachal Pradesh because all lands practically belong to specific tribal groups. Most regions of Northeast India including Arunachal Pradesh are ethnically distributed and specific tribal groups occupy distinct lands as explained in chapter 4. Kamin Pertin, a *Zilla Panchayat* (District Council) member said at the Independent People’s Tribunal “In Arunachal there is no Land Act. *Land, even rivers, can be owned by the community or individual. So from where will the government bring land for resettlement?*” (IPT, 2008, page 27).

In consequence, the families who were set to lose their homesteads were concerned about resettlement. They feared becoming internal refugees and suggested to the government that,

“Two or three resettlement sites should be selected so that PAFs (project affected families) can have an option”

Lokha Elapra, President, All Idu-Mishmi Students Union (S. Kumar & Tam, 2013).

The participants at the hearings maintained that resettlement of displaced families should be done through open consensus rather than state regulations. As Breli Mimi, the representative of Kano village stated, “Rehabilitation should be as per the choice of the people” (Miso & Tam, 2013).

The participants at the hearings did not trust the project officials to disclose the full scale of the social impacts caused by displacement. The project documents stated that very few people would be directly displaced, as the dams were located in mountain areas with low population density. However, the locals felt that these numbers were deliberately underestimated since the project authorities and state government officials knew that there was hardly any unclaimed land in Arunachal Pradesh. The knowledge of the difficulty of resettlement made the participants at the hearings distrust project data on the submergence area and “affected people”.

Another reason for distrust in the project’s displacement data was state policy. The state government enacted a policy on Rehabilitation and Resettlement in 2007 along the lines of the National Rehabilitation and Resettlement Policy, 2007. While these policies stated that the governments would be accountable to displaced families, they also held that an R&R Plan would be prepared only in cases where more than 200 families were being displaced. The official EIA reports showed the number of displaced people to be fewer than this limit and the government and the dam projects were legally relieved of their responsibility for resettlement. This caused groups who were questioning the proposed dams to speak up about their fears of internal displacement and resettlement in areas that were occupied by other ethnic groups of Arunachal Pradesh. The anxieties of becoming Internally Displaced Persons (IDPs) on being shifted out of their ethnic homelands were especially strong in the Dibang valley. The Idu Mishmis were a population of approximately 12,000 people and of them 115 families from five villages faced displacement and nearly 750 families spread out in 39 villages would be affected by land acquisition for the Dibang

Multipurpose project (Rina, 2019). Under pressure from these local concerns, the Arunachal Pradesh government released its first comprehensive Rehabilitation and Resettlement Act in 2008 (Government of Arunachal Pradesh, 2008a). By this time, protests against large dams in the region were in full swing.

7.3 Developmental Cost- Benefit debates

As shown in Chapter 4, the postcolonial era of state developmentalism and exceptional border administration was responsible for producing a peripheral “backward” region, perceived as abundant in natural resources but lacking in capitalist development. Arunachal Pradesh, a relatively young state, was integrated haphazardly with the national economy resulting in uneven economic development and a pervading sense of marginalization despite a steady per capita growth since the 1980s (D. K. Mishra, 2018). When the state government of Arunachal Pradesh received proposals for large dam projects, they were seen as a way of bringing much needed private capital into the state (Anon, 2007a; Chattopadhyay, 2011).

However, local indigenous people reacted to the form of development proposed by the government, discussing it in great depth in public hearings. The conversations gave material shape and context to their interpretation of development. A major argument made by several local speakers at the hearings was that the proposed hydropower projects were in national interest and that it was their duty to make them also work for local interests by clarifying local demands. Their objectives were stated in a statement by K. Drai of Tezu, “The public should get benefits from the project” (Tayeng, 2009). While some focused on the distribution of benefits between governments and citizens, others raised questions about their capability to accommodate large-scale dam based development. Taken together, the views at the public hearings showed that challenges to development do not occur only through antagonistic state-ethnic community relations. Regions and communities who feel “left out” also influence development.

Since the hydropower projects were repeatedly framed as the means for development in the region, the generation and distribution of local benefits were discussed in the public hearings of all three projects. The distributive aspects of these projects cut

across several axes: central-state government, state government-indigenous communities and landowners-resource dependent communities/public/citizens. When these aspects intersected at the public hearings, the discussions stretched to cover demands for more public infrastructure, local jobs and contracts and greater environmental and social safeguards from the impacts of dams. Suraj Tayang, a prominent community activist, referred to these demands as “development with a human face” (Tayang, 2009).

Local infrastructure

At the initial hearings for the Lower Subansiri project, demands were made for more public infrastructure and benefits. At the first hearing, the NHPC explained that, as per government rules, 12% of the power generated by the project would be given free to the states that suffered the impacts of submergence. The Lower Subansiri project’s submergence was entirely within the administrative boundary of Arunachal Pradesh. At the final public hearing for this project in Yupia, Bini Talum lamented that the project was treating Arunachal Pradesh as a passive donor of its lands for submergence. He explained that a few landowners would claim the immediate benefits of compensation while the recurring benefits (such as the 12% free power offered to Arunachal Pradesh) would be available on completion of the project many years into the future. He pointed out that the “development” in the form of offices and housing for the NHPC and transport of materials were taking place on the Assam side of the border. He called upon the project developers to stop discriminating against the people of Arunachal Pradesh in the distribution of public benefits from the project (Takar, 2001).

This last hearing for the Lower Subansiri project put a spanner in the works. In the earlier hearings, the locals were appreciative of the project and its supposed economic contribution. Several people such as the General Secretary of the Arunachal Pradesh Congress Committee were happy to commit support and cooperation on behalf of the people of the area (Lollen, 2001). But, there was no such enthusiasm at the last hearing. In fact, the participants made it clear that their support would be conditional on the Company’s responses to their demands. The Company could no longer take them for granted.

The Lower Subansiri hearings established public services and local infrastructure as essential parts of the development package offered by the dam builders. A paper authored by NHPC staff and presented at the Hydro 2004 Summit in India, claimed that, in addition to the free power that Arunachal Pradesh would receive for the project, there would also be increases in “employment and tourism, better schools, hospitals and roads and communication” and improved quality of life (R. Chandra et al., 2004). Additionally, the project would assist in “a fundamental sustainability goal—the alleviation of poverty” (ibid). In the following public hearings, project authorities assured the participants that local infrastructure building and economic opportunities would also happen if the dams received consent. These negotiations made participants feel that they were being coerced into relinquishing their natural resources for development.

By the time the Dibang and Lower Demwe public hearings were held, they were almost entirely understood by the public hearing participants as a means to generate local benefits from the dam projects. The local participants approached the hearings as an opportunity to talk about what mattered to them rather than limit the agenda of the hearings to what mattered to the officials and project proponents. They spoke from within the category of a “backward” region about what they expected to gain from the process. Many participants demanded special funds for local area development; local infrastructure in the form of roads, embankments and bridges, schools and hospitals, training institutes, sports grounds, cultural centres and scholarships. They also wanted public services such as water supply, electricity and sanitation, treating the public hearings as a forum to generate local benefits from these central government projects. Several participants suggested that local committees be set up to determine the use of the special funds for the benefit of local communities. One of the participants, Romta Meme, said that these benefits “must be enclosed with agreement of execution duly sealed and signed by the Deputy Commissioner” (S. Kumar & Tam, 2013).

Jobs and contracts

“Local people should be considered for the award of contract works, job reservations, etc to the local persons without political interference, benefits should be given to project affected persons...”

Dinglo Tayang, *Gaon Bura* (village head) of Tafragam (Tayeng, 2009)

The proposed dam projects were large projects of long gestation, the construction of which would take several years. They generated a great interest in the locals to participate in the dam building through contracts for construction works. Those with marginal or small land holdings or who were landless depended on jobs and contracts, as it was one of the few existing sources of non-farm income. The main sources of construction works in Arunachal Pradesh were the government and military construction contracts from departments (D. K. Mishra, 2013). The locals at the public hearings demanded jobs and contracts from the hydropower projects on the basis of their status as people affected by the projects. Large landowners had also come to depend on contract works as a source of revenue as farming and forestry regulations had limited several types of land uses in the state. Secondly, owing to internal changes in tribal societies, such as changes in aspiration because of formal education and outmigration of male youth, fewer families could maintain their traditional land based occupations and increasingly engaged in wage labour in nearby towns and commercial centres (D. K. Mishra, 2018).

The public hearing documents have several references to participants asking the state government to stay out of the negotiations for jobs and contracts between the project proponents and the affected people. These documents point to the experience of the indigenous communities of contract works being allocated by the government in favour of indigenous elites through opaque processes. Participants at the hearings felt that local, small contractors should be eligible for the income generating opportunities provided by dam-based development (Jeinow, 2009). There were numerous suggestions for construction contracts and jobs to give “preference”, “first priority” and “reservations” to villagers who lived closest to the construction areas. As Soblam Malo of Anjaw put it, “Persons from Mishmi society should be taken for the project. Mishmi society does not have any registered contractor. Demwe Lower HEP will

need 2500-3000 labours” (ibid). The participants also staked claims on different classes of jobs, from executive positions to security staff.

The participants at the hearings expressed fears that the construction of the dam projects would attract migrants from neighbouring regions. Migrant workers, such as non-tribal landless peasants and tribal people from neighbouring eastern Indian states, came to Arunachal Pradesh from North and Eastern India to work on government sanctioned road construction projects, forest plantations and to provide labour for the army and paramilitary camps stationed all along the international borders. As changes took place in the agricultural sector in the Northeast region, the migrants settled down to work on indigenous farmlands as tenant and indentured farmers providing cheap labour to indigenous land-owners and government agricultural and horticultural projects (D. K. Mishra, 2018). In Arunachal Pradesh, the North Indian trading communities also ran small businesses, but they could only register their businesses in the name of Arunachali locals as a result of state protectionism to the indigenous communities.

Migrant communities of the Northeast became the scapegoat of colonial tribal protection laws. Even though several generations of migrants were engaged in all spheres of the local economy, their status has been one of “interlopers” (Baruah, 2010b). The local indigenous communities who suffered the effects of poorly designed policies, land and forest loss due to privatization and governmentalization and poverty became locked in resource struggles that erupted in episodic violence and temporary flight of migrants. The visible presence of the migrants gave the indigenous communities a perception of being outnumbered by migrants. The local participants at the public hearings visualized the dam projects causing an “influx” of migrant workers into the state as construction labour for the dams. Shri Lokha Elapra, President, All Idu Mishmi Students Union (AIMSU) pointed out,

“The population of Idu Mishmi tribe is only around 12000. Influx of large number of outside labour population will outnumber the locals resulting in negation of constitutional and legal safeguards of the locals. Also the traditional way of life of the locals will be impinged upon” (S. Kumar & Tam, 2013).

Participants at the hearings expressed concern that thousands of labourers would come to work on the projects. They also felt that the long years of construction would cause the migrant workers to settle down on indigenous lands. As territorially bound ethnic communities, the indigenous people of the region dependent on the finite resources available within their lands. They already faced difficulties in meeting their economic, social and cultural needs from these resources due to government regulations and prohibitions. They feared that the entry of migrant workers for the dam projects in these regions could challenge their access to resources even further.

Environmental safeguards

The Lower Subansiri project's public hearings were held in 2001. During these hearings, there were several issues raised about the environmental risks of building a large dam on the main Subansiri river that flowed through a geologically fragile, biodiversity rich and seismically active zone. Experts pointed out that it may be safer to build dams on the smaller tributaries of the Subansiri (D. Goswami & Das, 2003). The popular opposition to the Dibang project was, at first, framed not around the dam itself but about its scale and size. At 288 m it was to be one of the tallest dams in the world. The crucial question for many people of Dibang valley was "Do we need such a tall dam?" Tone Mickrow, the vocal general secretary of one of the most active protest groups, the All Idu-Mishmi Students Union (AIMSU), stated that smaller dams would be more environmental friendly as well as less risky (Jishnu, 2008). The participants referred to the proposed projects as "mega dams" to bring attention to the issue of their sizes.

Participants at the hearings also raised the issues of "dam safety" or the ability of the dam structure to withstand seismic activity such as the great earthquake of 1950 that measured 8.7 on the Richter scale (S. Kumar & Tam, 2013). Lokha Elapra, the presidents of the AIMSU, suggested that provision should be made for insurance for accidents and deaths during construction, while Jowar Moyong demanded that a family roster of all downstream people be drawn up as project affected people (ibid). The issue of faulty EIA data and insufficient analysis of biodiversity impacts were raised by several people. Environmental studies done for the project were not fully

publicized or understood by everyone and, on these grounds, some participants suggested that the public hearings be rescheduled (Tayeng, 2009).

However, the responses of the project proponents to the participants at the public hearings for the Lower Subansiri and Dibang projects made it clear that the dam building company, NHPC, preferred to dole out individual compensations than comply with social and environmental safeguards. More information about the risks came to light through expert testimonies during hydropower seminars held in the region and analytical reports in the local media. These made it clear that the communities of the region were faced with making choices between immediate developmental gains and uncertain environmental futures. Several participants at the hearings referred to the projects as a mixed bag, providing local benefits at great cost to communities. They demanded these projects be implemented with utmost care as they were risky for downstream populations (Tayeng, 2009) and for biodiversity (S. Kumar & Tam, 2013).

In addition to project sizes, the scale of the proposed plans caused local people to be worried. Soto Thalai from Wakro commented that the “Company is trying to wake up the sleeping Lohit river to generate power” (Tayeng, 2009). His understanding was that the Himalayan rivers could wreck the region if humans manipulated them. The Lohit river was to have 13 dams, the Subansiri river a total of 22 and the Dibang river 17. The public hearings were silent on the question of cumulative impacts of the proposed dams. The hearings were held for individual projects with little or no reference to the others proposed in the same region. They focused on the specific impacts of individual projects rather than the cumulative effects of all the proposed dams. The participants at the Dibang and Demwe public hearings extended the limits of the hearings to take account of the cumulative impacts of the proposed dams. They rightly argued that the scale of the proposed dams would undercut the very benefits it claimed to generate. The President of AIMSU demanded a cumulative impact study of the Dibang river basin (S. Kumar & Tam, 2013).

The indigenous people of Arunachal Pradesh discussed the implications of multiple dams in other forums to bypass the narrowly set parameters of the official public hearings. The local media quoted Namo Lingi, the Anchal chairman of Roing in the

Lower Dibang valley, as saying “overdose of development was not good for the people and people should be burdened in such amount that it meets their absorption capacity” (Anon, 2007c). Khapriso Krong, a former state minister and resident of Tezu in Lohit district, wrote and spoke about the dams planned for the Lohit region. "We are not against tapping hydro-power potential as a national asset for revenue. But the process of signing MoUs under the PPP is faulty" (Khandekar, 2012). Krong was against the signing of MoUs between private firms and the state government that did not take into account the opinions of the local people. He criticized the public-private partnership (PPP) model of dam building as the state government was concerned only with the potential for hydropower and revenue generation for the state. As increasing numbers of MoUs were signed, local indigenous people began to reflect on the implications of too much development too soon.

Based on the analysis of public hearing discourses in Arunachal Pradesh on negotiations, compensations, jobs and environmental safeguards, I suggest that the hearings have the generative capacity to create spaces and informed views between and beyond mere acceptance or resistance of development as theorized extensively by scholars of development and postdevelopment respectively. The views and opinions voiced at the public hearings help us to critically navigate and build on the notion of “hopeful geographies” (Lawson, 2005) as a conceptual bridge between developmentalism and postdevelopmentalism. Mobilized indigenous communities participated in these public hearings to co-opt, stretch and reshape officially planned projects in locally meaningful ways. They generated space and reflexive knowledges for the larger emergent indigenous public spheres in the region. The public hearings opened up the much-needed discussions on pragmatic alternatives to historical colonial logics of tribal protectionism and government designed neoliberal development policies and projects.

7.4 Framework for Indigenous Economies

“Development must not be imposed rather it should be delivered on demand and acceptance.”

(Shri Mibom Pertin, President of *Adi Bane Kebang*, the traditional institution of the Adi peoples (S. Kumar & Tam, 2013).

As shown in Chapter 6, the dams and development discourses were generated in Arunachal Pradesh in what were largely indigenous public spheres as the representation or voices of non-indigenous people were absent in these discourses. The earlier sections of this chapter show the substantive demands of indigenous communities of Arunachal Pradesh from the proposed dam projects. In the following sections, I analyze the public hearing discourses of dams and development in Arunachal Pradesh to show that they constitute a broad framework of the needs and challenges of regional indigenous economies. Such a framework of indigenous perspectives to their lands and the environment is critical to distinguish from the project proponents' approaches to technicalized development that was offered to the people of the state. These alternate perspectives to development are present in several statements made by the public hearing participants. For example, as the public hearings became an opportunity to financialize land claims through compensations, members of indigenous communities were confronted by the loss of their ancestral lands for the first time. A representative of Kronli village, Moso Umpo, said, "It is a sentimental issue as village and land will be lost forever" (Miso & Tam, 2013). The public hearing documents display the difficult choices imposed by India's energy policies on the indigenous communities of the Northeast. One participant at the IPT wondered, "We have to give them our water so that we get roads. Don't we deserve roads anyway?" (IPT, 2008)

As I showed in chapter 4, the indigenous homelands of the Northeast are the product of an exclusionary form of postcolonial governance of the region by the Indian state. This governance constituted and reinforced intense community based land attachments and group identities in the region. At the same time, top-down legal regimes on forests and farms led to informal land transfers from community based management systems to privatized ownership. Elite land capture and economic inequality were the net effect of these earlier, contradictory forms of natural resource governance. The proposals for dam projects purportedly sought to bring economic development to this region without recognizing these earlier injustices. The project proponents claimed that the hydropower projects were designed for regional development, but they took little note of the varied developmental needs of the indigenous communities of the region. The public hearings to discuss the hydropower proposals served as a belated medium through which to engineer the redistribution of

economic resources, demand job opportunities and clarify forest rights. The demands made at the public hearings show that the government's positivist approaches to dam building were unsettled by the indigenous expectations of social equity in economic development.

The public discourses are significant to understand the imagination of indigenous rights in development. As discussed in chapter 5, the project EIA reports gave objective form to land and water and the public hearings offered new opportunities to clarify indigenous territorial access and rights. While the public hearings brought to attention the skewed state of indigenous resource rights in Arunachal Pradesh, the rights of indigenous women were silenced by the absence of any views on the gendered aspects of land ownership in the state. In the negotiations and deal-making, contentious class and gender politics determined the "project affected person". Mishra's scholarly work on the changes in land holdings in the state since the 1970s shows that the informal privatization of common lands also had gendered dimensions. Women were systematically disinherited in spite of their important and increasing roles in farming activities due to male outmigration and wage labour participation (D. K. Mishra, 2018). So indigenous women remained poor. Men dominated the public hearings in Arunachal Pradesh and the monetization of lands caused as a result of the negotiations at the public hearings dispossessed women of their uses of indigenous land. As shown in the earlier section in this chapter, the rights of poor migrant tenant farmers were also silenced as public hearings sought "authentic" local, indigenous concerns and views. In the indigenous public sphere on dams and development in Arunachal Pradesh, the migrant communities figured only as a threat to indigenous resource rights.

The participants at the public hearings not only negotiated compensation packages to individual families and clans, but they also demanded greater fund allocations for local development schemes to improve the state of village infrastructures in their areas. For instance, M/s Athena Demwe promised to earmark Rs. 100 crores for local area development and public amenities for health and education (Jeinow, n.d.). The project's allocations of the costs and benefits of the dam projects were carefully scrutinized and critiqued in public. These critiques of project allocations framed the contestations over the dam projects in the region as much as the protests against dams.

The public hearings of Lower Subansiri, Dibang and Demwe projects made it clear that the claims of economic viability of large centralized projects would not find local acceptance if determined by project requirements alone. Individual participants at the public hearings, representatives of clans or villages and heads of traditional or local government institutions, challenged the economic, technical and institutional parameters of the proposed projects and made project allocations more inclusive of public spending at the local level.

Compensation has been critiqued as an “economization of politics” (Swyngedouw, 2011) as it generates consensus on neoliberal development. This could also be argued of the public hearings if the discourses around compensations at the hearings are read with an attention to global political economy alone. However, in specific places such as border regions of nation states with complex social and historical discourses of discrimination, compensations may be understood differently. The public hearings show that such economizing discourses in the context of historical uneven development can be entangled in the language of rights, developmental contestations and remedies to structural injustices. Environmental scholars have pointed out that local political economies can illuminate such contestations that also include resource-monetizing narratives. This is particularly important to understand in the case of ethnic minorities or indigenous communities. Baviskar and Karlsson show that indigenous resource contestations in India may be understood as multi-pronged and historically situated struggles for resource rights rather than a fight to protect nature (Baviskar, 1995b; Karlsson, 2011). McDuie-Ra and Kikon show that ethnic communities of the Northeast region have directly challenged the state or private companies’ monopoly right to extract coal (McDuie-Ra & Kikon, 2016). In the case of the proposed dam projects in Arunachal Pradesh, the locals who did not have the capacity to capitalize water on their own made demands for compensations, contracts and jobs related to dam construction.

The local participants at the Dibang and Demwe public hearings in Arunachal Pradesh raised environmental concerns in addition to economic demands. However, the locals were not as successful at shifting the project discourses on ecological impacts and risks as much as increasing compensations and the financial allocations of the dam projects for local needs. The district administration and project developers

remained firmly committed to the findings of their project reports and EIAs on issues of dam safety, downstream impacts, biodiversity losses and environmental risks. The official agencies were prepared to alter their surveys and compensation packages but not to rethink the project design to accommodate concerns like the ecological risks of large dams and their cumulative impacts on the region. As Martinez-Alier and O'Connor state while outlining the concepts of ecological and economic distribution conflicts, non-economic concerns lose out when the focus of government interventions are only based on economic parameters (J. Martinez-Alier & O'Connor, 1996).

Despite the conditional willingness of the project proponents to negotiate with the local demands, the indigenous communities felt that they were taken for granted by the state and central governments and dam builders. The participants at the hearings were all too aware that they were being consulted at a very late stage and the government had already decided on the dams. The All India Mishmi Students Union (AIMSU) played an active role in the Dibang project public hearings. They claimed that the project was being treated "as a fait accompli and the public consultation process being treated as a formality" (AIMSU et al., 2008). Togum Lollen, their main negotiator at the Along public hearing for Lower Subansiri, said that the communities would not accept being used as pawns for 'world business' (Bhattacharjee, 2001). At the public hearings for the three projects, affected people stated that development in local areas should be undertaken "without political interference". They preferred to negotiate land sale, jobs and contracts directly with project staff and not through the mediation of government officials (Tayeng, 2009). They did not trust the government to speak for project-affected people since they were sure that the state government was totally in favour of the projects.

The post approval performance of other large projects in the region was also publicly reviewed in the indigenous public sphere. Samdang Tawsik, joint secretary of the Wakro-based Cultural and Literary Society of Mishmis, commented to a journalist, "Even before the public hearing, the company did not maintain transparency. God knows what it will do once the construction begins." (Khandekar, 2012). The Independent People's Tribunal meeting was held in 2008 with the affected people of the Ranganadi dam. The Ranganadi project took over a decade to build and was

operational from 2004. Tana Pinje, whose village was downstream of this project and was affected by the project's regulation of water, complained that though the villagers were promised "glitter and lighting everywhere", they did not get electricity for days (IPT, 2008). The participants at the IPT who came from the Ranganadi project affected regions suggested to the others at the meeting that they should "reject the project and protest before the MoUs have been signed" (ibid). The IPT discussions warned the communities about the lack of compliance by projects and the dearth of possibilities for remedies after the project was built.

The lack of trust by communities and the poor compliance record of projects was an indictment of the role of the state and central governments in neoliberal dam based development in the Northeast. Participants at the public hearings made numerous suggestions for the setting up of district level committees and monitoring bodies to oversee the decision-making and implementation of the projects. Participants at the Dibang and Lower Demwe public hearings took their cues from the stalled Lower Subansiri project to emphasize that developmental benefits would follow only if there were good decision-making processes. This was the most significant challenge posed by the indigenous participants to the proposed dam based development in the state. The demand for radically different and accountable institutions for project impact assessment and implementation held the seed of a new form of democratic engagement with development at India's borders.

In effect, the participants at the public hearings in Arunachal Pradesh used these events as platforms to communicate a broad framework of environmental and developmental priorities to the government. These consultations although imperfect, limited and divided, demonstrated the scope and challenges of envisioning development in this border region. The discourses and narratives in the public hearings and the emergent public spheres are a valuable resource to understand the possibilities and pitfalls of elaborating this framework of indigenous economies and ecologies to carve out sustainable futures for the Northeast region. The reflexive developmental thinking shown by local participants was opposed to and went beyond the official agendas of large-scale neoliberal dam projects in the region. At the same time, the public hearings drew attention to the stratification of indigenous societies where different actors enjoyed different levels of legitimacy and influence. At the

public hearings, local participants made efforts to breakdown old and established hierarchies and elitism in their societies. However, these efforts also created new hierarchies and new exclusions. Those who wielded EIAs and spoke to the content in them had a form of legitimacy different from those who used different environmental knowledges. These varied sets of positions structured the indigenous public spheres and its influence on hydropower policies and politics in the region.

7.5 Conclusion

The public hearings for the Lower Subansiri, Dibang and Lower Demwe dams, in Arunachal Pradesh provide evidence for indigenous politics on resource extraction in Arunachal Pradesh. Their political outcomes can be understood as a reordering of social hierarchies in indigenous societies of the Northeast region and the socio-ecological relationships between indigenous communities and nature in the Northeast. The focus on indigenous communities as the sole focus of development in the region limited the possibilities of equity and justice to non-indigenous communities. However, the public hearings offered even indigenous men and women very limited or no space to demand economic, social, cultural and environmental rights to determine their futures. They articulated their developmental priorities, values and needs within the confines of the government's narrow and mainstream economic frameworks.

I conclude from my analysis that the indigenous public spheres, shaped and mobilized by the discussions in the official public hearings for large dams, provided a crucial window to understand the needs and challenges of development in the region. These public spheres were a creative space that generated reflexive thinking on pathways to environmental sustainability and socio-economic remediation for a border region challenged historically by the lived experiences of developmental unevenness and top-down environmental regulation.

CHAPTER 8

PUBLIC SPHERE OF OPPOSITION IN DOWNSTREAM ASSAM

In the previous chapter, I showed that the indigenous communities who participated in the public hearings for dam projects in Arunachal Pradesh critiqued the scale and impacts of the proposed dam projects as well as extracted greater the financial and developmental benefits from these projects. The public hearings analyzed were related to the Dibang, Lower Demwe and Lower Subansiri projects that were to be located within Arunachal Pradesh. In this chapter, I focus on the mobilizations of popular protests in the Upper Brahmaputra valley of Assam against the national government's neoliberal large dam proposals for Arunachal Pradesh. I discuss the ways by which the rural peasants of the densely populated floodplains of the river Brahmaputra, especially those in the Upper Assam region at the foothills of the Arunachal Himalayas, implicated themselves into the ongoing dams debates and were successful at upsetting the official discourses on large dams in Northeast India. Through this discussion of peasant led protests in the Brahmaputra floodplains, I show how the centralized technopolitics of water development was unsettled by environmental justice mobilizations in the Northeast region.

In the first section of this chapter, I outline the actors in these protests and show why and how the protests by the peasant communities living in Upper Assam grew into a public sphere of resistance in the state of Assam. In the second section, I thematically analyze the resistance narratives generated by the protests. I discuss three resistance discourses that were critical for the mobilizing opposition in Assam against the proposed large dams. The first is the notion of “water grabbing” (Anon, 2014b; Mehta et al., 2012) or the diversion of water from disempowered, “unimagined” communities (Nixon, 2010). The second is the downstreaming of risks such as dam induced floods due to the location of the dam projects in a seismically active zone and the third is the protestors' reframing of the river from a commodified, discrete object to a living entity. I conclude the chapter with a discussion on the generation of transformative developmental possibilities centered on flowing rivers. The government's use of eco-managerial approaches as a form of spatio-temporal fixing for neoliberal capitalist growth, theorized by David Harvey (Harvey, 2001), revealed

the power asymmetries in the region's water management regimes. The public critiques of these approaches unsettled technocratic expert knowledges and generated imaginations of democratic ecological constituencies.

8.1 People of the Shadow Zone

In Chapter 6, I analyzed a set of public hearings that were held in Arunachal Pradesh for three projects, the Dibang, the Lower Subansiri and the Lower Demwe. The Dibang, the Subansiri and the Lohit rivers that were to be dammed by these projects, flowed into the Brahmaputra valley in Assam. Yet, only one official public hearing was held in Assam in 2003. This was for the Lower Subansiri project that was to be situated on the Assam- Arunachal Pradesh state border and this hearing was held before the public hearings in Arunachal Pradesh. It was held at the guest-house of the project proponent, the NHPC, at the site of the Lower Subansiri project in Gerukamukh in Dhemaji district of Upper Assam (P. K. Das, 2001). The newspaper notice for the public hearing invited communities who lived within the project's impact zone, as defined (PCB) by the EIA report. The Tezpur regional office of the Assam Pollution Control Board was delegated the task of making the executive summary of the EIA report available to all members of the public hearing panel a month in advance.

At this public hearing, a large part of the audience was made up of people who lived in villages situated below the dam site and along the Subansiri river banks and its vast flood plains. Yet, the EIA report presented at the Gerukamukh Public Hearing stated that only 38 families in two villages of Arunachal Pradesh would be affected. This impact would be due to the submergence of areas behind the dam. The extent of submergence impact was calculated on the basis of established norms within EIA studies for dams projects. But, the expert planners of the Lower Subansiri project failed to 'see' the downstream populations who would be affected by the project as downstream studies were rare in dam EIAs. This ignored aspect of dam studies is discussed in the next section. The dam project officials who made presentations at the public hearing failed to communicate to those who were invited, how this project on a tributary of the Brahmaputra would change the lives of those who lived in the river's vast and fertile valley in Assam. As a result, the audience at the Gerkamukh hearing

were left to assess for themselves what it meant to live downstream of the Lower Subansiri dam.

Ironically, this one public hearing in Assam for the Lower Subansiri project was used as a forum through which the government campaigned for the project in “public interest”. In comparison to this hearing in Assam, there were four public hearings held for the same project in Arunachal Pradesh, which involved more detailed negotiations and consent-making efforts between the government and landed indigenous community representatives of Arunachal Pradesh. These hearings are discussed in the previous chapter. The indigenous communities’ consent was crucial for the project as their natural resource properties such as land and forests would be submerged by the project’s reservoir. In contrast, the poor, marginal and landless peasants of Upper Assam were merely informed of the Lower Subansiri project. A wildlife biologist who participated in this public hearing in Assam termed the hearing “a sham” (Vagholikar & Ahmed, 2003).

Following the public consultations for the Lower Subansiri project in Assam and Arunachal Pradesh, several more dam projects were brought up for public consultations as part of the EIA project approval system by the central government. The list of such dam projects included the Dibang and Lower Demwe projects. However, the public hearings organized for these projects did not include any consultations in Assam. The dam projects that followed the Lower Subansiri project systematically counted out the residents of Assam from the list of “stakeholders”, a bureaucratic term that is used to lump together the material winners and losers of developmental schemes.

The epistemic practices of official EIA knowledge-making by project proponents and their consultants led to the contradiction of excluding the people of Assam from the public hearings for large dams in the Northeast region. EIAs for dam projects took only a 7 km radius around the project site to be the “study area”. In the case of the Lower Subansiri project, since the location of the dam was at the Assam state border, the residents of Upper Assam came within the study area and were invited to the Gerukamukh public hearing. However, the remaining dam projects that were proposed for Arunachal Pradesh were located much further away from Assam. The

EIA reports largely ignored what lay outside this 7 km radius of projects. Since all of Assam fell outside the circumscribed zone of impacts drawn around the Dibang, Lower Demwe and other projects in Arunachal Pradesh, the EIAs failed to study the flood plain socio-ecologies of the Brahmaputra valley and excluded the people of Assam from the public hearings.

This system of limiting the study area of these large-scale projects underestimated their potential impacts on environments that stretched far beyond the study area. This limitation of impacts served to present these projects as public goods as they seemed to affect only small regions or populations while the project's material and abstract benefits like economic development, progress and modernity accrued to the entire nation. For example, irrigation dams presented the displacement of communities due to the project reservoir as project costs and downstream command regions as beneficiaries even though irrigation canals carrying water from dams damaged soil and water quality due to water logging and salinity as stated in Chapter 2. Similarly storage dams for flood control or drinking water presented the water stocks in reservoirs as project benefits but ignored the loss of water to the downstream parts of the river as project costs.

More significantly, the EIAs that studied the impacts of water regulation through hydraulic infrastructures such as dams, viewed only the active dam construction and engineering locations as "project sites" even though the operations of the dam project influenced the entire river. The EIAs for dam projects suffered a "land" bias and treated only the land area around the construction sites as impact zones. The braided, multi channel flows of the Himalayan rivers that connected entire landscapes together in a riverine ecosystem were reduced to technical hydrological measurements. The effects on river flows caused by the dam were presented as mere alterations by the dam's system of regulated water releases.

The EIA practices of ignoring large scale impacts on riverine ecologies due to dams by excluding them out of impacts zones or masking the river transformations as technical hydrological manipulations were not unique to the EIAs of the Northeast dams. Richter, et al., 2010 state that downstream issues of dams have been ignored systematically all through the history of contestations around dam building (Richter et

al., 2010). While upstream issues of social and environmental impacts such as submergence and deforestation are discussed extensively, the impacts on areas below the dam have been left out. Since displacement is the most politicised of the problems caused by large dams, even the most noted global institution on dams, the World Commission on Dams (WCD), focused mostly on the the victims of submergences caused by dam reservoirs in the world (WCD, 2000). Richter et al., provide a sobering statistic that globally over 472 million people are affected by downstream impacts of dams. The authors conclude that downstream people have been in the ominous “shadow” zone of development (Richter et al., 2010). Nixon describes the downstream people as the “unimagined communities” of modernity (Nixon, 2010).

8.2 Rivers and Resistance

The Upper Brahmaputra valley is a flood- managed fertile landscape dependent on alluvial silt and water flows from the Himalayan rivers. The valley is studded with unique saucer shaped wetlands or “*beels*” into which floodwaters deposit fishlings. Every year during the months of June to October, the upper tributaries of the Brahmaputra swell due to the monsoon and inundate the valley in Assam. The valley is known for its flood resistant rice paddies. The rivers carry with them fine silt that is strewn across the paddy fields, nourishing them for the season that follows. Ideally, the floods flush the valley for a few days and then the waters recede. The river Brahmaputra and its tributaries sustain a multitude of livelihoods. When the winter sets in the high mountains, partly freezing up the rivers upstream, the flood dominated landscape of the Subansiri valley transforms. The freshly silted lands are filled with tall grasses and grazed by the large number of cattle owned by people of these regions. Driftwood that flows down the river is collected and sold in the nearby markets. The fishlings grow in *beels*. Even the expansive riverine sand spits or *chapories*, exposed only during these months, are sown with paddies.

To anyone travelling by boat from Dibrugarh to Bogibeel ghat, the economic importance of this “lean season” is apparent by the bustling activity of people along with their animals and goods. The lives of the Mishing, the second largest ethnic group of the Northeast after the Bodos, are entangled with the ebb and flow of the waters that come down the Eastern Himalaya. Along with other peasant communities

of the Assam plains, they make up the population of Assam's districts of Dhemaji and Lakhimpur. The lean season activities are important for the livelihood of some of the poorest peasant and pastoral communities of Assam. Many of them are migrants and landless communities without any constitutional or legal safeguards. For a decade now, the Krishak Mukti Sangram Samiti (KMSS), a mass-based peasant movement has advocated for their rights. As Nixon notes in his essay, river dependent communities are seen as a "residue of the pre-capitalist era" (Nixon, 2010). They share shifting riverbanks and the flowing waters as a common resource. The lack of clearly recognized individual rights over these "edge ecologies" makes river dependent people vulnerable to being ignored in any forms of decision-making based on consent that are extended to landowners.

The popularity of public participation approaches has made them "a threshold condition for development" across the world (Nederveen Pieterse, 1998). But in the Northeast region, public participation was executed very narrowly based on the descriptions of project impacts in the EIAs for the large dam projects. The EIAs did not account for the river's nature to flow downstream. The EIAs for the Northeast dam projects to be located in Arunachal Pradesh excluded the areas and people of Assam in the Brahmaputra flood plains from the categories of "project affected areas" and "project affected people". This also meant that the riverbank communities of Assam did not have a say in any of the projects that were planned to be located upstream within the territory of Arunachal Pradesh. The public hearings held in Arunachal Pradesh for the Dibang, Lower Subansiri and Lower Demwe projects were among the largest public gatherings to discuss the dam proposals. The measures taken by the state government to conduct the public hearings in Arunachal Pradesh irrespective of bad weather conditions, festivals, conflicts and legal violations, as shown in Chapter 7, was in sharp contrast to the lack of any consultations in Assam after the one public hearing at Gerukamukh for the Lower Subansiri project. The people of Assam were never again invited to participate in public hearings as part of the approval process for the large dams in Arunachal Pradesh. The river dependent communities of Upper Assam were rendered irrelevant by the official EIA and public hearing processes for large dams in the region. The dam proposals cast a cloak of invisibility on the riverine communities that lived in the flood plains of the river. By doing so, the dam proposals revealed the social relations between upstream and

downstream river areas within the Northeast region and the underlying unequal distribution of resources and risks. The participatory processes for environmental decision-making on these projects confirmed to the people of Assam of their marginalization in the water resource governance regime of the region.

This sense of environmental injustice and marginalization felt by downstream communities generated conflict and opposition to the proposed dam projects in the Brahmaputra valley. One of the first groups to protest against the proposed large dams in the Northeast region was the riverbank community of Upper Assam. In 2003, the Takam Mishing Porin Kebang (TMPK), a local student organization of the Mishing indigenous community, called for a large public meeting. The meeting was the first of a series of public actions that put up an insurmountable challenge to the view held by official experts that the dam projects in the Northeast would affect only a small number of families in Arunachal Pradesh. TMPK was supported by various youth-led political and cultural organizations such as the All Assam Students Union (AASU) and the Asom Jatiyatabadi Yuba-Chatra Parishad (AJYCP). They jointly organized a series of public meetings, seminars rallies and blockades in Upper Assam. These programs publicized information about the proposed projects and that the people of Assam were being left out of the public hearings.

As more project public hearings were announced in Arunachal Pradesh, the sense of being robbed of a voice in the matter only grew in Upper Assam. Just further upstream, public hearings were initiated for the 3000 MW Dibang project in January 2008 and the public hearings for the 1750 MW Lower Demwe project on the Lohit river took place in August 2009. As stated in Chapter 7, in 2008, the then Prime Minister Manmohan Singh laid the foundation stone for the Dibang project in a public event in Itanagar even before the public hearings for the project were concluded. Prof. D. C. Goswami, a noted geohydrologist based in Guwahati, Assam, stated to journalists that the Prime Minister who was also nominated to the Upper House of Parliament, the Rajya Sabha, from Assam had hurt the Assamese people by this act (Anon, 2008b). By March 2010, the Arunachal Pradesh government had unilaterally signed 117 MoUs with over 100 private companies (Anon, 2010c). The decisions of the government to continue legitimizing the projects without considering the protests in Upper Assam caused the protests to expand to other parts of Assam.

Akhil Gogoi, heads the *Krishak Mukti Sangram Samiti* (Peasant Liberation Association) a unique farmer's union in Assam that works on a range of socio-economic and political issues that challenge the peasant economy of Assam (D. Das, 2010). Gogoi's feisty speeches against the dam projects in Arunachal Pradesh mobilized the poor peasants of Upper Assam. Due to the street protests and blockades, and at the insistence of the All Assam Students Union (AASU), who supported the agitation in Upper Assam, the Assam government set up its own Expert Committee to look into the Lower Subansiri project reports and reassess its risks for Assam. A Committee comprising technical experts from premier educational institutions in the state, the Gauhati University, Dibrugarh University and Indian Institute of Technology, Guwahati, was instituted. The Committee conducted a study that was funded by the NHPC at a cost of Rs. 47.5 lakhs (4.75 million). The TORs of the study mandated the NHPC to provide all available data on the project to the study team (NHPC, 2008).

Saikia and Vagholikar refer to this study by the Expert Group as the first publically accountable impact assessment on dams in the northeast (Arupjyoti Saikia & Vagholikar, 2010). Done under intense public scrutiny, the process of this study was starkly different from the studies that were part of the approval processes for more than a 100 dams in Arunachal Pradesh. In EIA processes in India, project investors are able to pick willing consultants but, in this case, NHPC had no say. Baruah reports that NHPC was not pleased about the composition of the expert group but they felt 'constrained' to go along with the AASU suggestion (Baruah, 2012a). The preliminary report by the Expert Group was discussed in a meeting in February 2009. The Expert Group recommended newer studies that had to be completed in six months. The Expert Group's report was submitted on June 28, 2010 after which the authors of the report lectured and discussed their findings at public gatherings across the state (Anon, 2011c). Their report fired up the mobilization to greater extremes.

KMSS became the frontline of opposition in Assam to the dam projects. Akhil Gogoi was convinced that there was no point in debating each dam individually since each project posed similar risks and cumulatively increased the risk factor by several orders of magnitude (Anon, 2010d). Gogoi openly criticized the corporatization of the

region's water resources by private dam builders. The KMSS tactics of mass agitations and blockades that went on for days at a stretch brought immense pressure upon the politicians, technical experts and the intellectuals of Assam to envision alternatives. The protestors questioned the central government focus on forms of water development in the region that dependent on corporatized water enclosures (Bakker, 2003, 2010). The Assamese political class engaged with these concerns too. The Asom Gana Parisad (AGP) was the regional party of Assam that was born out of the subnationalist agitation in the state and the historic settlement with the central government called the Assam Accord in 1985. The AGP had been a proponent of large storage dams in the upstream regions to prevent floods in Assam. Now in opposition, the party held a two- day consultation with scientists, technocrats, social scientists and downstream people in Guwahati in January 2010. It passed a resolution demanding that the Central government stop approving any more hydel projects in Arunachal Pradesh. It called for the scrapping of the approved Lower Subansiri and Lower Demwe projects (Arupjyoti Saikia & Vagholikar, 2010).

The Assam Legislative Assembly discussed the impacts of large dams on the river Brahmaputra on July 15 and 16, 2009. The Assembly set up a multi-party committee to investigate the Lower Subansiri project first hand. The House Committee conducted field trips to the project sites and held public meetings. The House Committee submitted its interim report in March 2010. The report sought the suspension of work on the Lower Subansiri project till the House Committee completed its analysis. However, work did not stop (ibid). The final report of the House Committee was presented to the Legislative Assembly on June 17, 2010. It recommended that comprehensive scientific studies had to be undertaken “prior to various clearances for all future mega and small hydroelectric projects in Arunachal Pradesh and that the Government of Assam would play a proactive role in this regard” (Anon, 2010a).

The protestors had more radical demands. Between 2003 and 2010, the protests against one project, the Lower Subansiri, spread from Upper Assam to the entire state. Several civil society groups, student unions, artists, academics, journalists, conservationists and politicians became part of a public sphere of resistance against large dams in the Northeast region. By the close of 2010, the street protests that

began in Upper Assam had transformed from a social movement against any large-scale interventions on the Eastern Himalayan rivers. The “anti-dam movement”, as it came to be called by the media in Assam, then presented its most comprehensive political demand. They demanded that the Assam legislature pass a unanimous resolution that no large dams be constructed on any of the river systems of the Northeast so as to safeguard the interests of the downstream communities of the Brahmaputra and Barak river basins. This demand also presented the political opposition in the state legislature with a timely opportunity to take up this issue just before the Assam state elections in 2011.

The construction of the Lower Subansiri project continued haltingly till 2011 and then stopped. Work on the project did not resume after that. The half-way built structure has been called the “tomb” of the hydropower program (Schneider, 2015). The cost of the project has tripled (Kalita, 2019). Although several more projects in Arunachal Pradesh have been approved since then, none have started construction. Financial insecurity has affected the sector and large sums of money invested in these projects have been stuck.

It is useful to understand the nature of engagement of the locals with the proposed dams in Arunachal Pradesh and in Assam through a comparative lens. The first protests in the downstream areas of the river were similar to the upstream projects as they questioned the redistribution of benefits of the proposed projects. While the communities in Arunachal Pradesh negotiated for greater compensations and other financial benefits, the initial opposition in Assam against the Lower Subansiri project was on the project’s benefit sharing between Assam and Arunachal Pradesh. However, the protests in Assam grew into a collective politicization of dams and development in the region as they were completely left out of the participatory processes of the government. While the Assamese people were largely left to mobilize knowledges on the proposed dams outside the official channels, in Arunachal Pradesh, the state government was engaged in actively campaigning in favour of the dams, conducting public hearings, opening and closing negotiations and attempting to manufacture consent.

In Arunachal Pradesh, the protestors in the Dibang valley reduced over the six years when the public hearings were stalled. As shown in Chapter 7, those in opposition to the project were worn down by the aggressive methods by which government controlled the discourses on large dams. In Upper Assam, the protestors grew stronger as they gained the support of the politicians in government, the opposition parties in the state and the public intellectuals of Assam. The public sphere of resistance in Assam was also more class and gender inclusive than the indigenous public sphere in Arunachal Pradesh. While there were winners and losers among the indigenous communities who negotiated with the project proponents, in Assam, there was hardly anyone who expected to materially benefit from the dams.

The strategies adopted by the protestors in Assam were more varied in nature and scale. The indigenous communities of Arunachal Pradesh largely exercised their rights to resources through negotiations. The protestors in Assam took up roadblocks, strikes and rallies as well as meetings and seminars. The actions of the protestors broke the barriers of participation defined so narrowly by the legal standards governing EIA and created conditions of the greater democratization of the dams discourses in Northeast India. The protestors also turned what was seemingly a technical issue of the unrecognized downstream impacts of hydropower projects into a reflexive politics on energy and environmental security. Their opposition and political participation went beyond the reallocation of costs and benefits of large dams, the economic logic of market value of resources or issues of consent. It was predicated on resistance and reflexivity. This political upheaval in Assam against large dams nearly displaced the official discourses that justified the need for over 150 large hydropower projects in the region.

The implementation of PEG in the Northeast region points to the crisis of developmentalism as practiced by technocratic regulatory agencies and governments. The people of Assam were invited for a public hearing only once although they faced the maximum risks from the upstream projects. Although the “hydropolitical regime” conspired to keep the Assam people out of the debate and allow the privatization of water, the EIA reports allowed everyone to weigh in on the issue. The silences in the EIAs not only made the downstream visible, it made the people of the downstream regions capable of speaking. While participation in project approvals has been termed

as techno-managerial governance (Swyngedouw, 2011), in the case of the Northeast dams, the anti-dams movement became the most visible symbol of public participation in the region. The deferral of resolution of the questions the movement raised through the decade caused the issues of large dams to spill over into Assam's politics.

In the following sections of the chapter, I analyze the narratives of the opposition in Assam to large dams through three themes. These themes highlight the main aspects of contestations between the official discourses of dam building in the region and the local assessments of dam building in the region. Taken together, the debates over large dams in the region can be understood as the contestations over defining nature's intelligibility (Goldman, 2001; Deborah Moore, Dore, & Gyawali, 2010) and making visible its socio-ecological relations.

Water grabbing

National policies that have dammed and diverted flowing water consider rivers as territorial properties of the state, to benefit the powerful in the name of modernization, public interest and development. These projects were built with huge public funds by large water bureaucracies involving central ministries, technical bodies and expert engineers. Waters were enclosed in reservoirs to meet national irrigation and energy needs. However, they sacrificed the requirements of nutrition and livelihoods associated with rivers. On account of river systems being treated like a territorial asset, national water policies have caused several intractable water conflicts between nations and regions (Chellany, 2013; R. R. Iyer, 2003; Verghese, 2007).

The proposal to turn the NE region into a "power hub" by using the region's water resources gave the Indian government the unique opportunity to converge its policies for energy and environmental security. The "abundant" rivers could be used as free fuel to run the turbines that converted the power of the flowing water into electricity. This was seen as valuable renewable energy in the time of climate change. The international negotiations on climate change and global warming led countries to adopt targets to increase the use of non-fossil fuel so as to reduce their carbon emissions. India is the third largest carbon emitting country in the world and 79% of

India's total energy comes from burning coal (Sehgal & Tongia, 2016). Not only is domestic coal use harming India's image in the international fora on climate, it is also a load on the economy. 26% of power plant grade coal is imported at high costs to the exchequer (ibid). The production of cheap, renewable electricity through domestically available, free, non-fossil fuel resources was seen as an imperative to achieve economic growth. Specifically, the power generated would feed the northern grid to supply industrial and commercial development in urban North India. The total energy requirement of Northeast India did not require even a single one of these large projects. It was already a power surplus region. The energy development policies of the central government to build dams in the Northeast region was to turn the region into India's new energy commodity frontier (Baruah, 2012b). Even if India's needs were met through other sources, the government planned to export the power generated in the region to neighbouring South Asian countries through regional power grids (Pillai & Prasai, 2018)

Another reason for the proposals for large dams in the Northeast region was the geopolitical interest in controlling a cross-border resource. The Brahmaputra river is part of the Yarlung Tsangpo-Jamuna river system that flows through three countries, Bangladesh, China and India. The Brahmaputra flows through the cold dry plateau of Southern Tibet before it enters India. China, a prolific global dam builder, plans to build 40 dams on this river system within its territory. By harnessing the potential of over 30000 MW of power before China does, India sought to secure first use rights over this international water resource (Vidal, 2013). This objective to outmaneuver China galvanized project planning in the region and increased the urgency to set up structures to consolidate possession of the resource.

However, protest narratives in downstream Assam criticized these proposals for large dams as water grabbing, described as the takeover of water resources or top down decision-making on water by the powerful. The protestors challenged the EIAs for dam projects and their exclusion from the public hearings. Their critiques of being kept out of the public hearings on large dams generated discourses among the Assamese people on the territorialization and corporatization of river systems. Resource politics was not new to Assam. The violent struggles in Assam during the 1970s and 80s had generated popular discourses of the national take-over of Assam's

natural resources such as timber and oil by “mainland India” while the region remained underdeveloped and got no benefits from these resource exploitation projects. Baruah cites the example of the Assam Accord of 1985 to show how questions over resource extraction and underdevelopment came together to constitute sub-nationalist politics in Assam (Baruah, 2012b).

As Mehta et al, state resource grabbing has gained attention due to land appropriation and conflicts. But the “fluid nature of water” as a resource makes it difficult to understand water grabbing and its impacts (Mehta et al., 2012). Large dam projects were planned for major tributaries of the Brahmaputra such as the Siang and Subansiri since the 1970s. The Brahmaputra Board, a multi sectoral, multi state regional institution, set up on the lines of a river basin authority was meant to design and implement water storage schemes to create public goods such as navigation, flood control and river bank protection (Baruah, 2012b). However, this institution remained a non-starter due to its outlook of rivers as a national economic resource rather than one with multiple socio-ecological values for the people of the region. NHPC and NEEPCO the two public sector companies that had designed and held the blueprint for dam projects in the Siang and Subansiri basins had been unable to attract public, private or international investments.

The hydropower sector as a whole was waning in financial support due to various factors such as environmental and social impacts, high costs and declining benefits. It was only after the privatization of power generation in 2003 as part of India’s neoliberalization policies that the Northeast dam projects attracted private financial investments. The changes in the hydropower policies brought new investments into the Northeast region. Many first time dam builders also got involved (Rajsekhar, 2013). The privatization of energy production helped to move up capital’s frontiers into the Northeast region. Of all the projects planned for the region, only one dam had a flood moderation component that could provide some benefit to downstream areas of Assam. Except for the 3000 MW Dibang multipurpose project, the others were not designed to control floods. The new private power projects were designed to hold sufficient water levels in their reservoirs to create a peak height that would make power generation not just viable but profitable. The reservoirs of these projects would

have little or almost no space to hold floodwaters. The project designs commoditized the river waters to maximize profit making by extracting electricity.

KMSS accused the centre and state governments of “patronizing the capitalists who wanted to secure the right over the state’s water resources” (Anon, 2011a). Akhil Gogoi, the peasant leader stated at public forums that the flood cushion of the Lower Subansiri project was a mere 2% of the greatest flood in Assam (Anon, 2011b). The Upper and Middle Subansiri projects also were to be operated by private companies. So there would be practically no flood moderation in the interest of maximum power generation. Even if the flood cushion was assured, the Assam government would find it impossible to monitor it and would have no control over the operation of the reservoir, he said. How could the lives of so many citizens be placed in the hands of profit making companies? He quoted the 1980 report of the National Commission on Floods, which stated that there was no evidence of flood cushions operating in any of the dams in India (ibid).

As the number of projects mounted, the charges of resource theft made against the central government were also levelled against the Arunachal state government. The state government of Arunachal Pradesh capitalized on the apparent boom in the private hydropower market by signing over 100 agreements with private dam builders. As stated earlier in this chapter, these decisions were taken unilaterally without any consultation with riparian states like Assam. The challenges of resource federalism became very clear due to the contestations on large dams in the Northeast region.

Downstreaming risks

Over 150 large dams were planned for a transborder river system flowing through one of the most geo-physically complex regions of the world. According to experts, hydrological structures on river systems in earthquake prone areas were vulnerable to structural damages and breakage and caused great devastation (Valdiya, 2003). Dams were also implicated in causing earthquakes through reservoir-induced seismicity (RIS) as the water columns may increase stress on existing faultlines of the earth’s crust. This charge has been refuted by dam building agencies (Anon, 2015). Another

disaster associated with dams is their role in floods. Rivers in tropical, mountain regions are subject to intense and unseasonal hydrological events such as glacial melting, cloudbursts and water runoff from catchments upstream. Dam structures on these rivers exacerbate the complex dynamics in such conditions. Reservoirs and embankments meant to contain water may breach due to the discharge of high volumes of water during such events, damaging greater areas with more intensity than a normal river flood. These risks posed to large populations have led scholars to argue that dams are an anathema in South Asia (Baghel, 2014) as shown in Chapter 2.

In the earlier chapters, I have argued that the EIAs concealed the production and distribution of environmental and social harms. The official discourses on the production of green, cheap power in the Northeast glossed over the production and uneven distribution of risk the dams posed to the people of the region. The EIA worked as a framing device to reveal the Northeast region as a frontier of India's energy and environmental security. As pointed out by scholars, ecological modernisation as a form of development concealed the environmental or social injustice implicit in eco-technological projects (Hajer, 1995; Harvey, 1996; Mol & Spaargaren, 2007).

The Northeast dams EIAs informed readers of some negative impacts of the project as well as the measures by which they would be offset. They offered mitigation measures, compensatory packages and economic opportunities in lieu of the ecological losses such as forest degradation and livelihood impacts as shown in Chapter 7. But the project proponents failed to take responsibility for future dam-related disasters on the grounds that these risks were unquantifiable and unverifiable. Dam builders assigned the set of complex geo-environmental factors that affect the operations of dams in a seismically active region such as the Northeast to the category of "geological surprises" (WAPCOS Centre for Environment, n.d.).

The EIA chapters on dam-break analysis and the disaster management plan for the Lower Subansiri project illustrate the intense risk created by dam construction in the region. It states, "in the eventuality of any dam failure the disaster would be catastrophic" (ibid). The chapter does not venture to assess any probability of such a disaster but goes on to compute what the worst-case scenario would be. It concludes

that if a dam breach were to occur, a peak flood of 2,56,402 cumecs would be discharged in half an hour. The waters would breach the riverbanks leaving no possibility of evacuation or rescue. Table 8.1 shows that the height of this flood would be over 15 metres at the dam site and over 9 metres at locations 50 kms. downstream of the dam (ibid).

The EIAs have a disaster management plan, which includes surveillance and monitoring for the safety of the dam, an emergency action plan and preventive action such as timely repairs. The EIA and risk assessments for dam projects state that even though the region is seismically active, the dam would be solid enough to withstand an earthquake. These assurances did not cut ice with the protestors of the dam projects since these arguments did not factor in the numerous effects that seismic events would have upon the landscape, beyond all expert calculations of siltation and hydrology by the dam proponents.

The Eastern Himalayas that cap the northern edge of India's Northeast region is a geologically fragile area of young mountains. It sits on the active fault lines of the "E-W Arunachal Himalaya, the NW-SE Mishmi mountains and the NNE-SSW Patkai-Naga ranges" (Valdiya, 2003). The Indian tectonic plate has been moving northeastwards, colliding against the Asian continental plate, and pushing the mountains upwards. The interaction between this seismically active foundation and the geological superstructure makes this a uniquely risky landscape. The people of the valley know the hazards through their past experiences. The last two major earthquakes in the region, in 1897 and 1950, are still alive in the memories and folklore of the residents of Upper Assam. They are remembered as catastrophes that displaced entire hills into the valleys. The earth moved so violently that the topographical relationships between land and water, plains and hills were permanently altered. The sediments and debris generated by the landslides caused by the earthquakes raised the Brahmaputra riverbed significantly (D. Goswami & Das, 2003). Those who survived the 1950 earthquake speak of the multiple landslides that blocked the river Subansiri (Baruah, 2012b). These formed natural dams across the river. When they breached after several days of holding back the waters, the downstream areas experienced devastating flash floods. The Subansiri and several of

its tributaries broke their banks and changed course at several places, forming new channels (D. Goswami & Das, 2003).

How would this scenario play out if there were one or more large dams built across these rivers? How could one predict, with reasonable accuracy, the effects of large dams placed in the midst of such a complex set of factors, the interactions between the geological, seismic and hydrological characteristics of this region. What was the statistical probability of such a catastrophe re-occurring? And if it did, to what order of magnitude would the dams contribute to the increase in devastation? Prof. D. C. Goswami who teaches Environmental Science at the Gauhati University, introduced the notion of risk into the public debate on large dams in the region. He stated emphatically, in every forum on dams and development in which he spoke from 2001, that,

“...given the inadequate knowledge base, lack of systematic temporal and topographical data and across diverse terrains and considering the intense dynamism and immense scale of geophysical processes of the Himalayas... this (large dams) is fraught with uncertainties that may lead to grave consequences” (D. Goswami & Das, 2003).

A series of floods drowned parts of Assam between 2004 and 2008. These floods were caused by water releases from the operational dams on the Kopili in Assam, Ranganadi in Arunachal Pradesh and the Kurichu in Bhutan. Himanshu Thakkar, the editor of the journal *Dams, Rivers and People*, noted that on 10 July, 2004, a dam that had formed naturally on the Tsatichu river in Bhutan due to landslides and created a pool of water, had burst. This caused flash floods in the Manas and Beki rivers downstream and submerged parts of Barpeta and Nalbari districts in Assam. The water released from the Kopili Hydro Electric Project also caused floods in these areas on 21 and 22 July, 2004 and displaced close to hundred thousand people from their homes. The floods in Lakhimpur town and nearby areas on June 28, 2008 were caused due to water releases from the upstream Ranganadi hydropower project in neighbouring Arunachal Pradesh (P. J. Saikia, 2013). Several districts of Assam experienced the devastating effects of such man-made disasters in this region. These events stretched the funds and other resources available for disaster rescue and relief in the state. Researchers and journalists published case studies of dam water release

disasters caused by smaller existing dams in the region. It became widely known that dam operators were willingly subjecting the Assamese people to environmental risks. An organization called the Beki Noi Niyran Aru Baan Sahajya Samiti (BNNABSS), formed after the floods due to the Kurichu dam water releases protested against the operation of any dams on the rivers that flow from Bhutan into Indian territory (Talukdar, 2014). As political scientist Sanjib Baruah noted in the context of dams and floods, “Solidarity from anxiety has become a potent social force” (Baruah, 2012a).

Conde and Martinez-Alier describe environmental justice movements as aiming for the transformation of the ecological mal-distribution caused by development schemes (Conde & Martinez-Alier, n.d.). While official discourses presented large dams as a means to address the region’s economic inequality, the protests in downstream areas made visible the risks of dams displaced onto them. The communities of Upper Assam, who were made vulnerable by corporatized water governance to the risks of floods and other natural disasters, adopted the powerful narratives of environmental injustice. These discourses further amplified the sense of trivialization of downstream impacts in the EIAs.

River as living entity

Water conflicts are not new to India. With freshwater becoming a scarce commodity due to privatization and water grabs, vocal and violent water conflicts play out within and between state units. Institutions such as river tribunals for water cooperation and sharing are unable to find ways to resolve them. River sharing agreements have been particularly difficult because of entrenched political and private interests (Chokkakula, 2012) and because attachments to water are crucial to religious and cultural identity (Drew, 2016). The conflicts over dams in the Northeast is unique. The case of the Northeast dams is the first collective social mobilization on downstream river flows prior to dams being built. This is the largest public sphere on downstream water issues and it stands out among the several examples of geo-politicization of riparian water rights in South Asia between the national governments of India, Nepal, Bhutan, Bangladesh, China and Pakistan (Chellany, 2013; Verghese, 2007). The

participants of these distinct forms of politicization adopted the narratives of rivers as living biological entities.

The project proponents of the large dams in the Northeast claimed that the projects would be Run of the River (RoR) projects. In strictly technical terms, RoR refers to small-scale energy projects that do not involve any water containment. They are seen as benign projects that can produce renewable energy without altering the “wild” or free flowing nature of rivers. Proponents of the large dams in the region captured the term to present their dam projects as environmentally friendly. But their RoR projects are contrary to the above understanding of the term. In fact, the RoR projects designed for the Northeast region were hydropower production factories (N. K. P. Kumar, 2010). These RoR projects were designed to store river water for up to 24 hours. A dam would hold the river water behind a large dam for a few hours in the day and in the evenings. The stored water would be released whenever electricity is needed or when electricity needs are at a peak such as after sunset. The released water is made to flow through diversion tunnels and “dropped” over to the turbines in the power-house located below the dam. Another set of tunnels would then redirect the water back into the river channel a few kilometres downstream. Dam builders claimed that this system of power generation would submerge lesser areas, as such projects required a smaller pondage of water. They also stated that the river water is restored back to the river channel after power production unlike in storage dams when the water is held back from the river for long periods of time. These two aspects of RoR projects allowed dam builders to claim that their dam projects were benign.

While this was the official view of the experts who were involved in the environmental impact studies for the project as well as the project developers, the people who lived in the downstream Brahmaputra plains whose lives revolved around the seasonality of the Brahmaputra river found this argument lacking in a basic understanding of river ecology. The downstream protestors argued at various forums that if the dam projects became operational, their daily cycles of storage and release would be very different from the normal flows of the rivers. The trade-off between river flows and power production would always be tipped in favour of the dam builders as their profits depended on controlling water releases.

Vagholikar, who worked with an environmental research group and supported the campaign in Assam described the result of these dam operations on the rivers as the flooding and starvation of the river (Vagholikar, 2011). During the lean months rivers turned in to land and the downstream people engaged in post flood agriculture and other productive activities on and around the river beds. For power production, the power companies would have to release dam waters at quantities much higher than what flowed in the rivers naturally during the summers. According to the project's water release data presented in the EIAs, in the winter months, the river would be nearly dry during the day and for the hours in the evening when power had to be generated, the "total discharge" in the river would be enough to inundate all the sand spits, pastures, and beaches. The river's benefits of the lean season to the landscape and to the people would be lost once the dams were operational. This would destroy, not merely disrupt, all their seasonal life arrangements with the river.

Dharmadhikary describes the impacts of the water released by the routine operations of the Ranganadi project that was built in the later 1990s and became operational in 2004. On a sunny day, when the river was a thin string of water as most of it was dammed, people and cattle strayed into the riverbed. When the project opened its gates for power generation, they were caught unawares and washed away in the flash flood. He reports that when NEEPCO, the power company received complaints about these sudden water releases, they simply issued a circular that stated that the project "may require opening from time to time". The circular warned the public not to stray near the river. The Company stated that it would not be responsible for any losses or damage (Dharmadhikary, 2008).

The Assamese intellectual community shared the sentiment that the security of the people of the Brahmaputra valley had been severely compromised by the dam projects. Several noted writers, scholars, journalists, professors and the students unions wrote to the Prime Minister to do justice to the constituency he represented in Parliament. Their letter stated " ...downstream issue has become a major conflict in the region in recent years and the MoEF and its expert appraisal committee (EAC) on River Valley and Hydroelectric projects have been repeatedly requested to address downstream impacts and risks.." (Letter from Assamese intellectuals to the Prime Minister dated September 7, 2009). The letter accused the government of perpetuating

an “ecological lie”. It stated “The government has tried to convince us that there will be no downstream impact and that we have nothing to worry about as the total daily flow in a day will remain the same after the coming up of the dam. But what the government “forgot” to tell us was that for 20 hours in a day in the lean season the flow will only be 6 cumecs! Then for a period of only four hours the flow will increase 400 times in volume to 2400 cumecs...” (ibid).

In Assam, the public sphere of opposition to dams critiqued the financialization of the region’s hydroscaapes by highlighting the complex and nuanced socio-ecological arrangements of the riverine communities with the Brahmaputra. The protest narratives established the centrality of the river flows in sustaining life in the valley. The discourses adopted the concept of the “river pulse” (Junk, Bayley, & Sparks, 1989) to emphasize the importance of the ebb and flows of the living river and displace the EIA discourses that framed the river as a commoditized object.

These values generated by the public sphere of dam opposition included the importance of the river to human and non-human communities. The narratives of the living river included the forest tracts of medicinal plants, timber, cane and rattan through which the river and its distributaries flowed. The narratives included the wide network of sand bars and small islands called *chapories* that were the breeding grounds of fish, birds and small mammals. The narratives embraced the lush grasslands of D’Ering and Kaziranga National Parks that house the charismatic species of the rhino, tiger and elephant and the only remaining small population of the Gangetic Dolphin downstream. The living river discourses bound them together as an ecological community.

8.3 Ecological Communities

Scholarly work on environmentality and ecomodernisation point out to how governments exercise control over populations to access natural resources. The EIAs for large dams had spatialized the entire region into upstream and downstream areas and illustrated the uneven impacts of water grabbing in the region (Mehta et al., 2012). The project EIAs clearly identified winners and losers. As shown in chapter 7, the project proponents offered financial benefits and offsets for some impacts that

would be caused by the dams in the upstream regions. Compensations were narrowly framed for the people who would be affected by the reservoirs of the project. The public hearings revealed that the downstream communities were derecognized in the scalar distribution of benefits from the hydropower dams.

This rendered the project narratives unstable and incomplete. The risks perceived by the downstream communities in Assam threatened the conditional consents that were engineered by the dam proponents in Arunachal Pradesh. As Dr. Mite Lingi, representative of an Idu-Mishmi cultural organization in the Dibang valley, Kera-a-Initiate for Cultural and Ecological Security, noted,

“ Public consultation in Assam is not only necessary to address the concern of the people, but it is a pre-requisite for the people of Dibang Valley in the upstream to get benefits from this project ” (Miso & Tam, 2013).

Lingi's words were only one example of the interdependencies of water users along the river that the EIAs had systematically failed to acknowledge. The consent making efforts of the dam builders and governments actively propagated a fragmented approach to public participation through separate public hearings. The government officials on the public hearing panels heard and framed the issues of concern raised by participants as “interests”. These strategies prevented the locals from expressing, within the public hearings, their local knowledges of the Northeast region's river networks that are one interconnected web that holds the landscape together. Dam building would create an “interrupted geography” (D'Souza, 2013) cutting off the nourishing water flows and the livelihoods sustained by the river.

As more EIAs became available for the official public hearings in the neighbouring upstream regions, the protestors in Assam generated and circulated more information about downstream areas through the Assamese and English media in Assam. The non-participation of downstream affected communities in the decision-making processes cast a shadow on the official outcomes of the Arunachal Pradesh public hearings. The protesting groups of Assam were unencumbered by the government's regimented forms of public participation. The protestors were free to reshape the public discourses within broader and more meaningful framings than in the EIA and public

hearings. Their questions related not only to dam projects and project impacts. The protestors pushed the public discourses on water management and sustainable development in the Northeast region.

How did the narrow and divisive public hearings, initiated by the government, lead to such broad and significant public discourses? Are the outcomes of resource-based contestations better and inclusive governance or does it merely bring about redistributive changes while sustaining divisive social categories? I specifically raise these questions in the context of scholarly attention to resource politics in recently formed smaller Indian hill states. Karlsson's work on the artisanal coal mining in neighbouring Meghalaya shows that the traditional land owning Khasi communities engage in dangerous and exploitative forms of extraction (Karlsson, 2011). In the neighbouring Northeastern state of Sikkim, the indigenous Lepcha and Bhutia communities protected their traditional homeland, Dzongu, from submergence by proposed large dams. They deployed the narratives of the "cultural landscape" to show that the government's proposals to build dams in their indigenous territories would harm the gods they worship in the form of trees, rocks and rivers. While these narratives did stop the construction of projects in Dzongu, the land-based strategies ring-fenced the communities and displaced the dams further downstream on the river Teesta outside their territory. Sharma's work on the cultural contestations over the Tehri dam on the Ganga in Uttarakhand critiqued the protestors' instrumental alliance with the BJP, the Hindu nationalist political party, to stop the dam. This alliance framed the river in majoritarian religious terms and in exclusion to other forms of valuing the river (M. Sharma, 2011). The above examples of resource contestations instrumentally used and reinforced existing social identities such as the tribal, the Hindu to build narratives on resource politics.

The case of downstream mobilizations against large dams in Assam seem unique from this perspective. The downstream protestors in Assam used river flows rather than a territorial asset as their mobilizing metaphor. The anti-dam movement that began with questions over the cost benefit calculations of dam projects moved beyond the narratives that reified water flows as a developmental resource. The movement expanded to increasing the zone of impact of the proposed projects to the entire Brahmaputra valley of Assam. The movement also included the activists of Arunachal

Pradesh who rejected the results of the hearings in which they participated or felt that their consent was extracted unfairly by the government. These narratives also included the river communities in Bangladesh and tried to create a broad regional alliance of river peoples across the international borders. These narratives and public actions like protests held on the same day in different locations on both sides of the borders, generated solidarities at a truly regional scale. The anti-dam movement generated an emergent consciousness of being one ecological community dependent on the wellbeing of the region's rivers.

These solidarity based outcomes of the anti-dam movement in the region contrasted with the conventional resource planning of national governments that territorialized water and in effect co-produced narrowly defined political communities. The huge populations of Pakistan, Bangladesh, Myanmar, Bhutan, Nepal and China share South Asia's waters. The national requirements of water intensive capitalist growth in these countries has pushed the countries sharing these resources into engaging in proxy wars in the name of rivers. Internally too water conflicts within countries like India are on the edge of escalating into more violent battles. National policies have fostered uneven development and as a result the redistribution of resources is fraught with questions of ownership, use rights and identity.

David Harvey's theorization of the production of capitalist space through spatio-temporal fixing shows that federal units are continually rearranged to facilitate privatized control of resources (Harvey, 2001). Resource based populations are targeted in the name of improvement (Goldman, 2001). Expert, technical discourses of abundance, deficit or poverty deployed by neoliberal agencies reveal nature within trapped territorial spaces. As shown in Chapter 4 and in the earlier sections in this chapter, in the scalar contestation for control over shared regional resources, the central government set up the dam projects as a means of development in the Northeast region. The proposed dam projects got the approval of the small mountain states in this border region that were interested in structural adjustment with the Centre. The Arunachal state and central governments also to manufactured public consent through managed participatory processes. These maneuvers can be understood as a form of spatial fixing by the central government for neoliberal

hydropower projects. This “fixing” is broken by the grand alliances of anti-dam movements across the region.

The global discourses on climate change have added another dimension to these national and local frames of resource-based development. Climate narratives have classified regions and resources by determining who can pollute, who must forego development, and what kinds of development can be considered climate friendly. The intersection of global climate change concerns and national energy and economic development policies in India has resulted in changes not only to energy technologies such as Run of the River hydro projects. It has also expanded the geographies for energy production such as into the Himalayan region. Large dam projects that have been critiqued for several decades have come back as renewable energy saviours (CEA, 2018). The need for providing equitable energy access is imperative in large developing countries like India (Pittock, 2010). Due to climate change concerns, emissions from energy production have to be kept low. As a result, global or national environmental groups may find it impossible to critique dams as a solution (Fletcher, 2010; Pittock, 2010). As Fletcher notes, national and international climate policy makers and environmental organizations may be “joined at the hip” in their efforts to solve the twin climate and energy challenges. Moreover, global and national environmental organizations are dependent on government recognition and validation (Fletcher, 2010). So, resistance to dams may be beyond the task of environmental organizations alone. This context of the limitations of the climate civil society makes the anti-dam movement in downstream regions of the Northeast very significant.

Downstream communities who lived in the ignored shadow zone of global and national discourses of energy and environmental planning had, by 2010, generated a movement based on socio-ecological and biophysical relations that showed the potential to recast democracy. The movement mobilized the contingent emergence of an ecological community. The downstream protests transformed the Assamese thinking on water governance. The politicization of the downstream issues saw a paradigm shift in the public discourse from flood control to flood management as a new developmental policy for Assam. In a little more than a decade, dams had been displaced from the Assamese public imagination as the panacea for development. This generative and reflexive process of collective mobilization against the

monopolization of resource use is often what slips into the background when the media and government use shorthand classifications of pro or anti-development to describe resource conflicts. The anti-dam movement showed reflexivity in reassessing dams in the context of climate and environmental justice. They demonstrated that large communities dependent on the ecological services of rivers, land and forests can form alliances and generate discourses and identities that supersede narrow, existing ones.

This downstream anti-dam protests against large dams in the Northeast region also shows the need for a reflexive climate policy that acknowledges socio-ecological relations and the underlying conditions for unequal access to energy sources. The yoking of climate policy to national development has in effect delegitimized top down climate solutions. Clean Development Mechanism (CDM) credits extended to dam projects have been opposed in several countries. One of the first, most ambitious Indian climate targets of 50000 MW of hydropower has crashed.

The protests against large dams in Northeast India show that reflexivity may not always come up with solutions, but it expands the range of possibilities to work with. The Assam Accord of 1985 had demanded large upstream dams to control floods. The recurrent floods and the lack of any water projects at scale till the early 2000s had been an emotive issue in Assam. The Assamese people perceived the stated lack of resources by the central government to build these projects as the nation's abandonment of these border areas. But the shift in public perception from flood control to flood management through these protests opened a unique opportunity for non-capitalistic relations between the Centre and the NE region. It showed that ecological communities could push for a new understanding of space that challenges the political control of regions and resources.

8.4 Conclusion

In this chapter, I show the generative nature of PEG by showing how and why the techno-politics of water by dam proponents generated conflict and opposition against the official discourses of dam building in the Northeast region. I analyze the protest narratives through three themes, water grabbing, downstream risks and living rivers.

The protest narratives generated along these themes mobilized and politicized the “forced disappearances” of downstream communities, to use Rob Nixon’s metaphor, by the official dam proposals. The anti-dam narratives deployed these themes to illustrate the hierarchical relations in water management in the Northeast region. These anti dam discourses allowed the river dependent communities, both within and across the borders of the Northeast region to articulate alternate values and visions of sustainable water management. I argue that the failure of the government’s PEG efforts was generative of a fragile and contingent emergence of an ecological community.

APPENDICES

APPENDIX 1: NORTHEAST STATES AND THEIR GOVERNANCE ARRANGEMENTS

State	UT Status	State-hood	Presence of STs	Presence of Autonomous District Councils (ADCs) under state or central laws	Presence of Scheduled Areas under Sixth Schedule
Assam ²⁷	-	1950	Not Majority	Yes	Yes
Arunachal Pradesh ²⁸	1972	1987	Majority	No	No
Manipur	1956 ²⁹	1972	Not Majority	Yes	No
Meghalaya	1970	1972	Majority	Yes	Yes
Mizoram	1972	1987	Majority	Yes	Yes
Nagaland	1957 ³⁰	1963	Majority	The state is governed through special local institutions based on its constitutional arrangements under Article 371A and state laws ³¹	
Tripura	1956	1972	Not Majority	Yes	No
Sikkim ³²	-	1975	Not Majority	No	No

²⁷ Arunachal Pradesh, Meghalaya, Mizoram and Nagaland were carved out of colonial Assam.

²⁸ Arunachal Pradesh is the only tribal majority state in the Northeast with local panchayats for village administration

²⁹ Manipur and Tripura were Part C states after 1947 and became UTs in 1956.

³⁰ The regions of Naga Hills and Tuensang were brought together by the Naga Hills Tuensang Areas Act of 1957. This region was governed by the Indian government through the Governor of Assam.

³¹ According to Sangma, 2001: "... the Nagaland Tribe, Area and Village Council Act of 1966 which provides for the creation of such Councils-a tribal council for each tribe, an Area Council of Kohima and Dimapur, a Range Council where there is a recognized range in the Mokukchung and Kohima Districts and Village Councils for one or more villages in Kohima and Mokukchung."

³² Sikkim was added as the eighth state to the Northeast region in 2001

APPENDIX 2: DETAILS OF PROJECTS ANALYSED IN THIS THESIS

	Lower Subansiri	Dibang	Lower Demwe
Location	2.3 km upstream of Gerukamukh village Dhemaji District & Lower Subansiri District on the border of Assam & Arunachal Pradesh	Lower Dibang Valley District, Arunachal Pradesh	1 km upstream of Brahmakund bridge on NH 52, Lohit District, Arunachal Pradesh
Project developer	NHPC	NHPC	Athena Demwe Power Limited.
Size	2000 MW; 116 m	3000 MW; 288 m	1750 MW; 163.12 m
Total Land Requirement	4111 ha (4039 mixed forest land)	5349 ha (4577.84 ha unclassified state forest)	1589.97 ha (502 ha river bed forest; 720 ha community forest, state forest land)
EIA Consultant	WAPCOS	National Productivity Council	CISMHE
Officially Recorded PHs	5 (2001)	2 (2013)	2 (2009)
Participants	600~	718 ³³	700+
Environment Clearance status	2003	2015	2010

³³ At the Roing Public Hearing in January 2008, 1200 people participated.

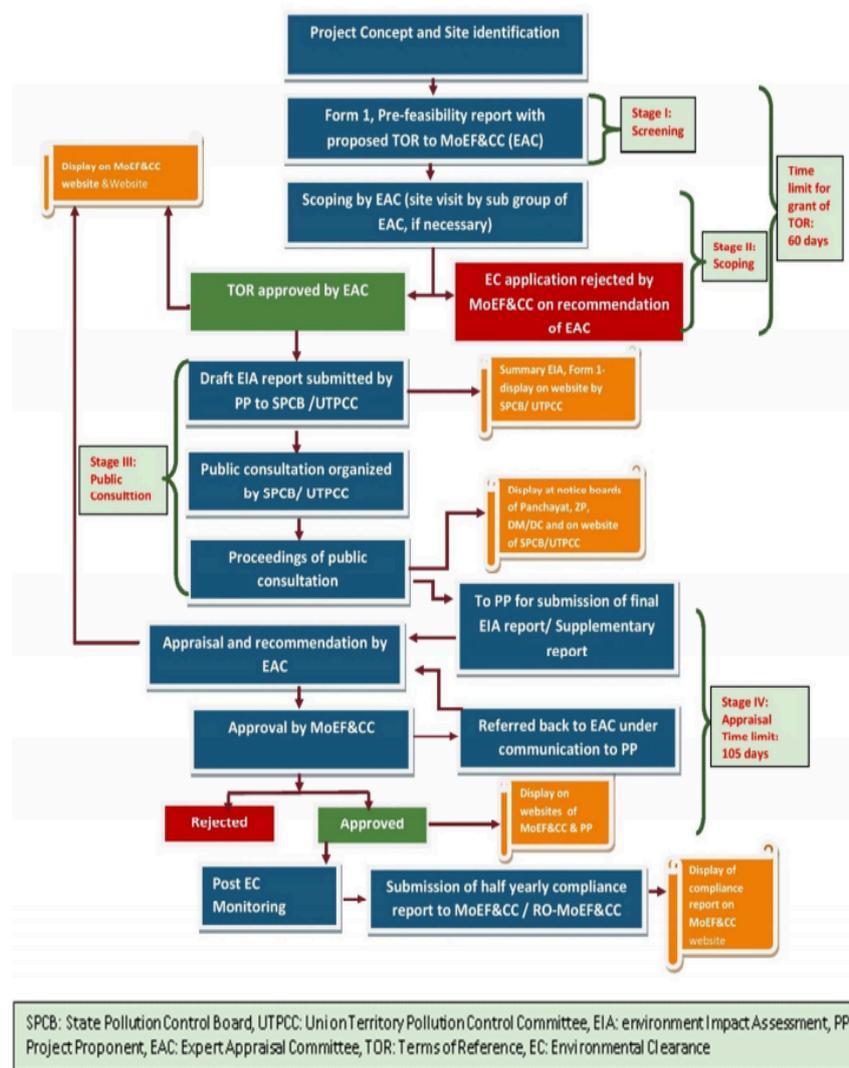
APPENDIX 3: BASIN-WISE AND STATE-WISE SUMMARIES OF HIGH RANKING PROJECTS OF CEA

Basin	Luhit	Dihang/ Dibang	Subansiri	Kameng	Upper Brahma putra	Lower Brahmap utra	Kalang	Barak and other rivers	Tista	Total
Arunachal Pradesh	7	29	22	29	2	0	0	0	0	89
Assam	0	0	0	0	1	0	6	0	0	7
Meghalaya	0	0	0	0	0	0	3	19	0	22
Manipur	0	0	0	0	0	0	0	11	0	11
Mizoram	0	0	0	0	0	0	0	6	0	6
Tripura	0	0	0	0	0	0	0	0	0	0
Nagaland	0	0	0	0	4	0	0	6	0	10
W. Bengal	0	0	0	0	0	0	0	0	2	2
Sikkim	0	0	0	0	0	0	0	0	21	21
Total	7	29	22	29	7	0	9	42	23	168

Source: Preliminary Ranking Study of Hydro-electric Schemes. Volume- IV, Brahmaputra Basin, Central Electricity Authority. October 2001

APPENDIX 4: ENVIRONMENT CLEARANCE FLOWCHART

Chart 2.1: Process of grant of EC



Source: Report of the Comptroller and Auditor General of India on Environmental Clearance and Post Clearance Monitoring (Report No. 39 of 2016), Government of India.

APPENDIX 5: REPRESENTATIONS OF THE “PROJECT SITE” IN THE LOWER DEMWE DAM EIA REPORT



CENTRE FOR INTER-DISCIPLINARY STUDIES OF
MOUNTAIN & HILL ENVIRONMENT
University of Delhi, Delhi

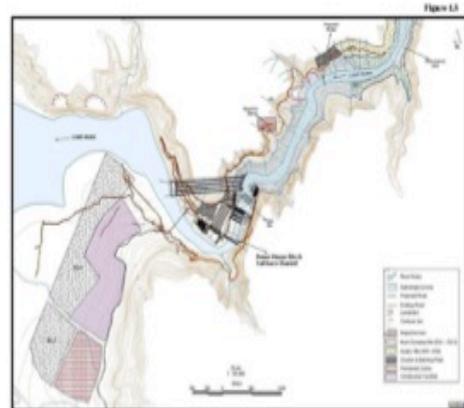
**Environmental Impact Assessment for
1750 MW Demwe Lower HE Project,
Arunachal Pradesh**



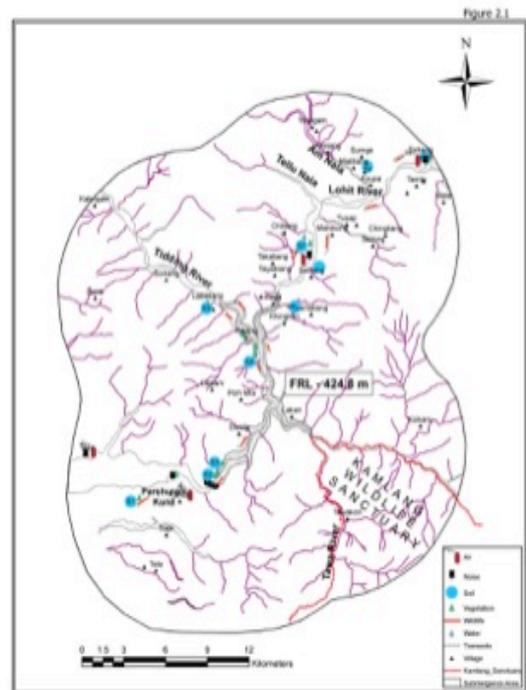
Prepared for:

ATHENA Athena Demwe Power Private Limited, New Delhi

JULY, 2009



Layout plan showing project features of the proposed Demwe Lower H.E. project



Sampling Sites at different locations within 10 km radius from Demwe Lower H.E. project

APPENDIX 6: PUBLIC HEARING NOTICES FOR DIBANG PROJECT

**GOVERNMENT OF ARUNACHAL PRADESH
ARUNACHAL PRADESH STATE POLLUTION CONTROL BOARD
PCCF's OFFICE COMPLEX, P-SECTOR, ZIRO POINT TINALI,
ITANAGAR – 791111.**

No.APSPCB-23(3)/2007/NHPC/DMP/209 Dated 19/06/2008

NOTICE OF PUBLIC HEARING

It is for general information to all concerned that the Public Hearing relating to Environmental Clearance under Environmental (Protection) Act, 1986 in respect of Dibang Multipurpose Project (3000MW), Lower Dibang valley, Arunachal Pradesh will be held as per details given below:-

Name of District	Venue	Date of Public Hearing	Time
Dibang Valley,	New Anaya	30/07/2008	1000 Hrs.

Suggestions, views, comments and objections of the proposed project, if any, are invited within thirty days (30) from the date of publication of this notification.

All persons including bonafide residents, environmental groups and others located at the projects site/sites of displacement/sites likely to be affected can participate in the Public Hearing. They can also make oral/written suggestions to the Arunachal Pradesh State Pollution Control Board (APSPCB), Itanagar or Deputy Commissioner, Dibang Valley (ANINI).

Copies of the draft Environmental Impact Assessment (draft EIA) and the summary Environmental Impact Assessment (Summary EIA) along with soft copies have been submitted to the following Offices for the Public Hearing Process pertaining to Dibang Multipurpose Project (3000MW), Roing, Arunachal Pradesh.

Interested persons can access the above mentioned documents from the following places:-

Sl.No.	Name of the Office/Place	Location	District
01.	O/o of the Deputy Commissioner Lower Dibang valley	Roing	Lower Dibang Valley
02.	O/o of the Deputy Commissioner Dibang valley	Anini	Dibang Valley
03.	O/o the District Industries Officer Lower Dibang valley	Roing	Lower Dibang Valley
04.	O/o the District Industries Officer Dibang valley	Anini	Dibang Valley
05.	O/o The Zilla Parisad Lower Dibang valley	Roing	Lower Dibang Valley
06.	O/o The Zilla Parisad, Dibang valley	Anini	Dibang Valley
07.	Ministry of Environment & Forests, Govt. of India, Parvavaran Bhawan	New Delhi (CGO Complex)	--
08.	O/o the RCCF, Ministry of Env. & Forests, Regional office, Shillong, Meghalaya, Govt. of India.	Shillong (Meghalaya)	--
09.	Arunachal Pradesh State Pollution Control Board, Itanagar, Deptt. of Env. & Forests.	PCCF's Office complex, Itanagar	Papumpare
10.	O/o the Chief Engineer, Deptt. of Hydro Power Govt. of A.P., Itanagar	Itanagar	Papumpare

The above mentioned information/documents can be accessed on www.apspcb.org.in

Sd/-
(R.K. Deori) IFS
Member Secretary

**Govt. of Arunachal Pradesh
ARUNACHAL PRADESH STATE
POLLUTION CONTROL BOARD
PCCF office complex, O-point Tinali,
Itanagar (A.P)**

No.APSPCB-23(3)/2007/NHPC/DMP/235
Dtd. 09.07.2008

CORRIGENDUM

A Corrigendum is hereby issued to Notice No.APSPCB-23(3)/2007/NHPC/DMP/211-13 dated 19.06.2007. Now the **new venue** for the **Public Hearing of Dibang Multipurpose project** will be at **ANINI** (District HQ, Dibang Valley) instead of **New Anaya**.

All other terms and conditions issued in the earlier notice will remain intact.

Sd/- (Chairman)
Ar. P. State Pollution Control Board
Itanagar

APPENDIX 7: POLITICAL MAP OF NORTHEAST INDIA



Source: (Ministry of Development of North Eastern Region & North Eastern Council, 2008)

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