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Environmental History And Historiography Of Forests In Assam

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Abstract
The forests of Assam are not just expanses of greenery; they embody centuries of human interaction with nature, marked by shifting meanings, conflicts, and coexistence. Environmental history allows us to trace how forests have shaped, and been shaped by, communities, states, and global forces. From the traditional practices of indigenous tribes who viewed forests as sacred to the colonial state's extraction-driven forestry policies and the postcolonial struggles over conservation and development, Assam's forests have witnessed layered histories of use, exploitation, and resistance. Historiography further reveals how narratives of forests have often been written from the perspective of powerful colonial administrators, state planners, and conservationists—while voices of forest-dependent communities remained marginalized. By weaving together ecology, economy, and culture, a humanized reading of Assam's environmental history highlights forests as living entities central to identity, survival, and politics.

Keywords - *Environmental history, Forest historiography, Assam Indigenous knowledge, Colonial forestry, conservation.*

INTRODUCTION

Assam is a region characterised by its forests. The documented forest area encompasses around 26,832 square kilometres, constituting roughly 34.21% of the state's overall geographic area. The increasing population has exerted pressure on forest land, resulting in the encroachment of numerous bighas of reserved forest area. The natural environment, including annual precipitation, topography, and soil, differs by area, resulting in many forest types within the state. For generations, Assam has been a focal point of economic interest due to its extensive, unexplored, and untamed natural resources. The colonial era, which extended until the late 19th century, facilitated certain resolutions, including large mammal conservation and several unresolved ecological issues involving human populations, forests, and land tenure systems. A substantial body of literature exists regarding the colonial period and its effects on forestry and governance. The state's forest can be categorised into five distinct categories:

1. Tropical evergreen forest
2. Tropical semi-evergreen forest

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3. Tropical moist deciduous forest
4. Riverine forest
5. Tropical dry deciduous forest

During the colonial era in Assam, there are three primary classifications of forests: (i) Reserve Forests, designated under the Assam Forest Regulation; (ii) Unclassed State Forests, which are government-owned lands that are neither designated as Forest Reserves nor allocated to any tenant for ordinary or special cultivation; and (iii) forests owned by various zemindaries in the province, such as Bijni, Mechpara, Bogribari, Parbatjuar, among others, as well as forests within tea gardens and other nisf-khiraj and lakhiraj grants.

(i) Reserved Forests:- Among the three categories of forests, only the first is intensively maintained by the trained personnel of the Forest Department, and only these are operated under meticulously developed Working Plans aimed at achieving a sustained, permanent yield of timber and minor forest produce.Reserved Forests also have another function as protective forests, that is, no sustained yield is looked for but they are maintained to prevent soil erosion and floods and to conserve water supplies. Assam is very short of this type of Reserved Forests.

(ii) Unclassed State Forests.-The Unclassed State Forests are theoretically under the control of the Forest Department but no intensive system of management with the object of a sustained perpetual supply of timber or other produce from them has been possible although as regards such of these areas as contain a good stocking of sal, some attempt has been made to prevent wholesale destruction by declaring these to be reserved trees which cannot be cut down or damaged and by exploiting them in rotation so that periods of rest are available for recuperation and growth

(iii) Indian State and Zemindari Forests.- The zemindari forests, larger estates such as Bijni, Manipur, and Mechpara have employed trained forest officers for management. Although the circumstances are not optimal, efforts are being made towards effective forest conservation in terms of exploitation; however, financial resources for enhancing the growing stock are typically lacking.

The discovery of indigenous tea plants inspired the British administrators to commercially explore the area, develop its communication systems, and establish British administrative infrastructure over the region. [1]The British Forest Department in Assam was established in 1868 for reservation and commercial exploitation of forests. [2] The Political Officers and District Commissioners managed the hill forests. The Chief Commissioner overall controlled the region and was directly under the Viceroy in Council. [3]With the expansion of tea plantations in the province, the tea planters exercised proprietorship over the region's forests. Till the second half of the nineteenth century, administrative control over Assam's forests was yet to be outlined properly and therefore was placed under the Bengal Forest Department administered under the provisions of the Bengal Forest Rules of 1865. Soon the arrangement was found unmanageable and hence in 1868, a separate Forest Department was established for Assam with Gustav Mann as its first Conservator of Forests (1868-1916).[4] The Revenue and Public Works Department also exercised control over some portions of forests.[5]In the early twentieth century, the tea planters acted as advisors to the British Forest Department in elephant catching expeditions and participated in the *Khedda'* and *'Mela* [6] operations with them. The forest officials consulted the planters on wild game and on situations when wild animals were found to cause damage to humans. A tea planter named Frank Nicholls was appointed as the honorary game warden by the British Forest Department in Assam in the early twentieth century.[7]In return for such support from the tea planters, the forest officials came up with forest reservation policies that encouraged tea plantation industry in Assam. In 1879, Dietrich Brandis suggested for the conservation of forests in Goalpara district at the mouth of the Brahmaputra valley for protection of the Lower Assam tea gardens from the dry westerly winds that swept the valley in the months of February and March.[8]

According to government data, the existing forest area of Assam constitutes 34.21% of the total geographical area. The Forest Survey of India has conducted forest type mapping utilising satellite data in accordance with the Champion and Seth Classification. This study indicates that the state comprises 18 forest types categorised into five groups: Tropical Wet Evergreen, Tropical Semi Evergreen, Tropical Moist Deciduous,

Tropical Dry Deciduous, and Sub Tropical Pine Forests. The estimated tree cover in the state is 1,564 square kilometres, constituting 1.99% of the state's geographical area. The forest cover in the state encompasses 27,673 square kilometres, constituting 35.28% of the state's geographical area. The state's forest and tree cover spans 29,237 square kilometres, constituting 37.27% of its geographical area. Reserved Forests account for 66.58% and Unclassed Forests for 33.42% of the total forest area, based on their legal classification. The protected area network of Assam has 7 National Parks and 18 wildlife sanctuaries, encompassing an area of 0.40 million hectares, which represents 4.98% of the total geographical area. The state possesses three Tiger Reserves: Kaziranga, Manas, and Nameri. Kaziranga National Park and Manas Wildlife Sanctuary are designated as World Heritage sites.

Colonial Forestry, Environmental Change, and the Evolution of Conservation in India

A significant theme of environmental research was forests. While environmental studies are a relatively recent development, the examination of forests in India has been a focus of research since the time of colonial forest conservators. The imperial foresters, such as Berthold Ribbentrop and E.P. Stebbing, aimed to exalt colonial efforts in forest protection while recounting the development of British forestry in India. Following independence, Mahesh Rangarajan, Ramchandra Guha, and Madhab Gadgil were involved in the historiography of forests in India. The primary purpose of the colonial forest department in India was the development of substantial commercial timber and the creation of money. Guha and Gadgil connected the commercialisation of Indian forests to the Industrial Revolution in England. Alongside the economic, political, and social transformations that precipitated the revolution, substantial alterations in resource utilisation were implemented. Wood, initially utilised on a limited scale for home fuel, began to be employed for the manufacture of tools, furniture, and house construction, as well as being processed into paper or combusted as fuel for steam engines and ships. Consequently, the swift expansion of industrialisation rendered trees a commodity for commercial profit generation.

Mahesh Rangarajan, engaged with the Central Provinces, had similar perspective. He believes that although the colonial forest department was founded in India to protect forests from native damage, the pace of destruction has significantly escalated with the establishment of the forest department. A. C. Sinha has demonstrated that the capitalistic endeavours of the colonial authority in Assam significantly disturbed the symbiotic link between the tribes and the forests in several ways. The tribes in pre-colonial Assam existed in complete harmony with their surroundings. There was no excessive resource utilisation and no disruption to the ecological equilibrium of the region. The establishment of colonial administrative systems, facilitated by German foresters, significantly contributed to the exploitation of Assam's resources in the latter half of the nineteenth century, while simultaneously restricting the traditional rights of village communities concerning land, forests, and wildlife.[9] Richard Tucker depicted the large scale deforestation in Assam in the twentieth century due to the combined process of jungle clearing for tea plantation, settlement of indentured labourers and immigrant peasants from the neighbouring districts.[10] He demonstrated that the colonial revenue department was an entity primarily motivated by income generating in its efforts to expand forest lands for cultivation, which therefore led to clashes with the forest department that sought to preserve the forests. This gave rise to the concept of environmental conservation.

In time forest management got intricately connected with conservation. Conservation meant the act of preserving, restoring, guarding, protecting and the official supervision and management of rivers, forests, wild life and other natural resources to prevent injury, decay, waste or loss of the natural resources. Conservation also means the careful utilization of natural resource in order to prevent depletion. The colonialists and white planters noticed that ravaging of forests and dwindling of wildlife prompting them to generate public awareness about the essentiality of conservation.

Wildlife conservation and management involves the maintenance of wild creatures and their habitats to ensure their long-term sustainability. Consequently, the focus of environmental efforts shifted from tree conservation to animal preservation. The imperial perspective and the global wildlife conservation movement

resulted in the creation of numerous game reserves and sanctuaries in India. A subset of tea planters, for instance, assumed a pivotal role in the conservation of Assam's diverse biodiversity. The rampant slaughter of rhinos and the peril of poaching had reached alarming levels. The contemplation of establishing a sanctuary for the rhinoceros culminated in the proposal for a wildlife reserve at Kaziranga, Laokhowa, and North-Kamrup in 1905.[11] Therefore, Kaziranga was officially designated as a game reserve in 1908. Laokhowa Wildlife Sanctuary, situated in the northern region of Nagaon District on the southern bank of the Brahmaputra River, west of Silghat, was designated as a game reserve in 1907. The North-Kamrup, or Manas Wildlife Sanctuary, situated in the northwestern section of Barpeta District, beneath the Bhutan foothills on the eastern bank of the Manas River was designated as the North Kamrup Forest Reserve in 1907, having previously served as a royal hunting area. Conservation initiatives were implemented not only in Assam but throughout other regions of India. Following independence, there was initial lethargy regarding conservation; nevertheless, the movement rapidly gained momentum, and by the turn of the century, numerous reserve forests emerged as not just reservoirs of botanical species but also sanctuaries for endangered animals and pristine landscapes. The Government rehabilitated the forest communities reliant on forest products, ensuring that the establishment of reserves did not impact their livelihoods. This succinctly encapsulates the history of Indian forests.

Historiography of Forests in Assam: Colonial Legacies, Scholarly Gaps, and Emerging Narratives

Historically, forests have been the most underexplored aspect of Assam. Following the works of E Pee Gees and Kingdom Ward, the only notable mentions are Rajiv Handique and Arupjyoti Saikia. But this works too does not go beyond the 1950's. But most important development in the study of Assamese forests have taken place only after that period. The corpus of forest history of the region comprises of reports, records, and documentaries by travelers, botanists, forest officers and historians. The earliest and most written about subject on environment in north east India have been its forest. Little doubt it was the impact of environmental history that was being written about in the rest of India where forest had a primacy.

The earliest writings on the forests of Assam were in the form of documentations. The most known and used among them were William Grifith and Joseph Dalton Hooker. [12] Other than that, there are documentations of the forests of the region by F. Kingdon Ward[13] and M C Jacob[14] which are immensely useful in researching the forest history of Northeast India. The three major works that studied forests of the region were by A C Sinha,[15] Rajib Handique[16] and Arup Jyoti Saikia.[17]But the author who pioneered forest history in the region was not a historian but an Anthropologist who produced a marvel of a book entitled '*Beyond the Trees, Tigers and Tribes.*'[18]But the book was hardly noticed and the regional academia remained quite unfazed.[19] The book for the first time illustrated the harmful effects of the British government's exploitative and imperialistic forest policies on the forest-dwelling tribes of Assam. The book outlined the colonial forest policies that resulted in significant effects, particularly evident in the post-colonial era. The book examines the historical administrative and exploitative practices of the Colonial Forest Department in Assam during the 19th and 20th centuries, primarily aimed at revenue generation, and contends that both colonial and post-colonial capitalism have significantly disrupted the symbiotic relationship between the tribes and the forests. The indigenous people existed in complete harmony with the environment during pre-colonial times. Resource utilisation was optimal, and ecological equilibrium was maintained both within and with neighbouring areas. The establishment of British administrative systems, supported by German foresters, in the forests of Assam during the latter half of the 19th century significantly contributed to the exploitation of regional resources and the restriction of traditional rights of village communities concerning land, forests, and wildlife. The introduction of a foreign market economy inspired a sense of deprivation among the forest tribes of Assam, culminating in an inequitable conflict between external imposition and indigenous survival, ultimately resulting in the subjugation of the latter. The book illustrated a correlation between contemporary regional insurgency, demands for autonomy, and regional party movements in Northeast India, alongside the

alienation of indigenous populations due to British colonial forest policies and the encroachments of the market economy on their survival resources in modern times.

Sinha in his book had generously borrowed from Richard P Tucker who had dealt with the forests of Assam in his article titled *'The Depletion of India's forests under British imperialism: Planters, Foresters and Peasants in Assam and Kerala'*. It is interesting that it did not occur to regional historians before Tucker that miles and miles of tea plantation must have risen on the devastated forests of Assam. Tucker expressed deep concern over the increasing rate of deforestation in Assam in the 20th century due to the combined interests of tea planters, imported labourers and immigrant peasants in the region. According to him, the greatest danger that had emerged as a result of various commercial interests in Assam was the depletion of her natural resources, Tucker's assumptions in this essay can be challenged on the following grounds. He did not assign any role to the Colonial Forest Department in the deforestation of Assam and portrayed it as an organization whose primary aim was in halting the process of forest destruction and introducing a rational system of forest administration. He has totally ignored the commercial aspect of the Colonial Forest Department in the region. The other aspect was Tucker's assumption regarding the mutual conflict of interests between the Revenue Department and the Colonial Forest Department. He has projected the Revenue Department as an organization whose motive was in opening up more forest lands for cultivation thus resulting into a conflict with the Forest Department whose ambition was to protect the forests. It is true that a silent clash was growing between the two departments on the issue of land but the commercial interests of the Forest Department in those lands cannot be overlooked. It was in favour of protecting those lands, which contained rich Sal trees, the timber having the most commercial significance. Sinha's significant and pioneering work had made little impact on the emergence of environmental historiography in the region. It has a lot to do with Sinha being anthropologists. His work was publicized as a book of Historical Sociology and therefore historians ignored it. More so because there has been a complete absence of environmental consciousness as well as unawareness about the growing discipline of environmental history among the historians of the region. In none of the universities of the region (except Assam University where the present author introduced the subject as a compulsory course) environmental history was either taught or researched. Sinha's endeavour to highlight environmental past of the region therefore had almost no impact on the academia of the region.

Rajib Handique's work closely resembled Sinha's, with the distinction that Handique focused exclusively on the Brahmaputra Valley. Rajib Handique is a pioneer in the study of British forest policy in Assam, contextualising the region's woods within its geographical framework. His book demonstrated that the utilisation of forest resources was restricted, and the state's involvement was confined to the collecting of income from select forest products prior to the advent of British administration. However, following the arrival of the British, forests transformed into a resource for extraction and revenue maximisation. Handique contended that British forest policy was mostly designed to maximise revenue through the indiscriminate exploitation of natural resources. It illustrated that the British forest management prioritised the cultivation of a limited number of commercially valuable tree species, disregarding the ecological context of Assam. He examines the structure and utilisation of forests in ancient and mediaeval India before to British intrusion, concluding that their use and the exploitation of forest products were mostly limited to military purposes before colonisation infiltrated this wooded area. The British reached Assam after having created a systematic forestry department for India and their global empire.Thus, as argued by Handique, "by around 1860 Britain had emerged as the world leader in deforestation, devastating its own woods and forests of Ireland, South Africa and north eastern United States to draw timber for ship-building, iron smelting and farming. The destruction of forests at times was also used by the British to symbolize their political victory."[20] In Assam too they took over forest administration when the they noticed 'inundation and carrying away of top soil by torrents because of destruction of forests have also been observed in Assam where the surface soil in many tea gardens has been washed away and where the yield has dwindled down to next to nothing.'[21] They had even surmised that such deforestation might have had an adverse impact on the climate or the region.[22] However the British required clearing the forests for its tea plantations, and falling trees for its domestic

requirement of Madras and Burma teak. The colonial state noticed the degradation of forests and realized the necessity of conservation in the second half of the nineteenth century and followed it up with the establishment of forest department in 1862 initially under the Public Works Department and then under the Home Department and finally under the Revenue and Agriculture Department. In 1864 the Forest Department was placed under the experienced hand of D. Brandis who was responsible for organizing the forest department earlier in Burma. In Assam the forest department was formed in 1868 when it was still under Bengal Presidency. It functioned as a department of the Chief Commissionerate when the province was separated from Bengal and constituted into a Chief Commissioners province in 1874. The newly established department surveyed the forest cover of the state, classified them and imposed varieties of taxes on them. When a full-fledged forest department was inaugurated in 1874, it arranged greater governmental control over the forests through formulation of sets of regulations and demarcations. It categorized the forests of the state into Reserved Forests, Villages Forests and Protected Forests and created rules and regulations for them. An administrative set up was formalized. Along with forests it took steps for the protection of wild birds and animals too. The book has a chapter on the socio-economic impact of British Forest Policy but the chapter on Environmental Consequence of British Rule is more critical in understanding the environmental transformation of Assam. There is critical discussion on the rising trade in forest products, exploitation of timber for Railways, Oil and Coal, increase in its revenue through imposition of taxes on grazing and the controversial clearing of waste lands for immigrants as well as for tea plantations. The British government drew upon the experience of the German foresters to introduce forestry in India in the second half of the nineteenth century with a view to extract "valuable" timber for the European sponsored industrial enterprise. The traditional rights of the community over land, forests and wild-life, and even water werethus drastically curtailed. The system was described as a "bastard system" of tea cultivation which was neither agriculture, nor an industry which was patronized at the cost of local resources and communities.[23]

The trend of trying to chronicle forest history continued with Arup Jyoti Saikia who shifted from his interest from peasant history[24] to forests. Arup Jyoti Saikia's '*Jungles, Reserve and Wildlife: A History of Forests in Assam*'[25] was the most well researched publication on the forest history of Assam after RajibHandique. While Handique's work suffers from the limitation of a Doctoral work, Saikia's been more organized, rigorous and had wider coverage that a forest history required. It does not have any reference to the pre-British description of forest and forest use, but begins with the exploration, narrative and description of early British officials and adventurers in Assam. The narration of the forests and wildlife by colonial officials was not just clinically geographic but representing the fearful journey in the wild highlands of Assam. There was contemplation regarding the need of conservation of Assam forests that had started quite early in the British camp the restriction of felling of trees was the first step in this direction. It shows how the experimentation with conservation of forests started with Nambor more due to the requirement of the Public Work Department of the colonial government in Assam which was the largest consumer of forest products of Nambor. Eventually Nambor was declared a protected forest in 1862. The commercial needs of the colonial government also led to the mapping of Assam forests subsequently. Its mapping had an institutional support when the forest department was established in Assam. The report of W. Schlich in 1873 and the memorandum of Brandis paved the way for a more organized operation on the forests of Assam. The selection and reservation of forests had started with Gustav Mann in 1870-71. By the 1873-74, around 269.58 square miles had already been declared as reserved forest. But creation of reserve forests was not easy as was seen during the Langting-Mahur experience. A lot of complexities had to be taken into consideration. Apart from the local issues the most serious challenge came from the tea planters who fiercely opposed all attempts at reservation of forests. There were also the interests of the Nepali grazers which had to be accommodated. There were issues of unclassed forests and the question of extension of agrarian frontier, and farmers' immigration from the Eastern Bengal districts and their settlement also had to be taken into consideration. All these required an effective and coercive forest administration which became possible only with the establishment of a full-fledged forest governance in Assam. Among many tasks, the forest department also

had to look after various forest crimes that occurred in the domain and definition of the rights of the peasants on forest lands. Thus, a most important issue that was to be resolved was about the demand of the tribal shifting cultivators who required unlimited access to forest land for their agricultural practices. There were many protests from peasants regarding forest laws that curtailed the rights of peasants on forests and forest products. After independence there was clamour on reserved forests from landless peasants which was a critical issue for the new government in Assam. The book has an important discussion on the development on what the author called forest economy. From making tea boxes to railway sleepers to saw mill industry and a hugely revenue earning sector the colonial government was able to convert the Assam Forest into a thriving and viable economic sector. It was only subsequently that the government moved to a more scientific conservation of forests protecting it from wild animals, fire and insects, introducing sylviculture, regeneration through natural as well as artificial stimulus, and introducing *taungya* system of agriculture, an attempt to ban shifting cultivation. The book has an important chapter on wildlife. It discusses the mapping of wildlife in Assam, the confrontation between agriculturists, wasteland settlers and wildlife, the prevalence of game, sports and hunting culture the debate over the need to prevent wanton destruction of wildlife and the creation of game reserves and national parks. It has a moving description of the creation of famed Kaziranga, the preservation of elephants, and post independent project of saving the tigers in Assam.[26] According to him the Indian Forest programme undermined the livelihood practices of forest depended communities. Even the peasants lost their cultural rights over land and they were pushed away for their inability to become cash-crop producer. [27] British government made policies to have full control over forest to use the forest products for industrial and business purpose and game for hunting purpose. Peasant claimed a share in forest land for agriculture and the rights of the forest dwellers and other forest communities were ignored.[28] In this way the struggle for the control over forest started. The colonial state debarred the local inhabitants from their traditional rights over forest and land and forest was converted into a commercial commodity.

Undeterred by the cold reception his earlier work got, A C Sinha followed up his earlier work with another work entitled "*Colonial Legacy and Environmental Crisis in North East India* (EBH Publishers, Guwahati, 2012). Unlike Handique whose book covers only Brahmaputra Valley, this book includes hills areas of the province too. It starts with a critical analysis of Colonial Forest Policy in North East India. It has important recounting of merchant- adventurer Robert Lindsay's exploitation of timber from the Sylhet-Khasi frontier for building massive vessels. It also referred the visit of Botanist Joseph Dalton Hooker in discovering the diversity of vegetation in Assam. The chapter then studies the development of forest department and forest administration in Assam. An important chapter of the book is on the widespread destruction of forests in Assam to facilitate tea plantation which is an extension of Richard Tucker's earlier work on the same theme. An important chapter of the book is on the timber trade of the province. Timber was required for packaging tea leaves. The colonial endeavour to reserve *Sal* forest had brought the Garo tribe into conflict with the British.

The Forest Movement

The pivotal chapter focused on the inaugural environmental movement in the region, spearheaded by Sonaram Sangma. Sonaram Sangma was an alumnus of the American Baptist Missionary School, subsequently engaged in the Public Works Department under British administration, but was sacked after declining a transfer. Sangma was troubled by the imposition of compulsory labour service on his Garo tribe by government officials. The colonial boundary delineation between Garo territory and Habraghat pargana, which infringed upon the Garos' traditional land rights, precipitated strife between the two parties..The reservation of 18 Sal forests exacerbated the conflict. Sangma collected one lakh signatures of the Garos to demand i) removal of encroachment on Nazarana land in Habraghat ii) Restoration of Reserved Forests back to the Garos and iii) Abolition of Begar system of imprestlabour on the Garos. The commission set up to enquire into the grievance of the Garos concluded that Habraghat is a zamindari land whereas Nazrana land is purely government land which could be surveyed and demarcated. Secondly it concluded that the

Government was within its right to declare certain areas as reserved forest provided it adequately compensated the houses and villages inside the forest. It recommended that the forest officers could examine the claims of the tribe and return the land to the Garos which were unfit to be included in the reserved forest or adequately compensated. Lastly the complaint regarding *beggar* could be replaced by contract labour. The forest officials however did not agree with the recommendations of the Commission.Though the recommendations were not implemented, reservation of Sal forests was halted. Sangam and his group filed a civil suit in the court for recovery of their possession against the zamindar of Bijni estate in 1910. The struggle continued deep unto the 1930's.

A young scholar published a small monograph on the environmental history of Naga Hills with important results.[29] The book opens with a geographical narration of the mountains, forests and rivers of Naga hills followed by a discussion on the status of forests in Naga life. Nagas had a symbiotic relationship with their forests depending on their forests for fuels, housing, fishing, hunting and so on. Since most of them practiced *jhum* cultivation, forest was indispensable for them. Forest not only was a source of income for them, there were also a deep supernatural connotation to it. With the advent of colonialism, the policy of the state was mainly directed towards exploitation and conservation, while debating and discouraging shifting cultivation. The exploitation of forests led to a gradual decline of forest cover, which compelled the administration to go for conservation of forests. When Meikhejohn of the Imperial Forest Service was appointed as the deputy conservator of forests from 1922, valuable work was done for conservation of forest in Naga hills district. He saved the Tizu villages from famine when productivity failed in 1922 by showing the value of conservation of trees and water. The tenure of Bor during 1924-25 was also known for conservation endeavour. The colonial administration was convinced of the destructive impact of shifting cultivation on forests and did everything to discourage the practice. Some tribes the like the Angamis practiced terrace cultivation which the colonial administration tried to popularize and spread to other tribes and areas as well. There are other sporadic attempts to study the forests and forest policies of the state in contemporary times. among these were TiplutNongbri's 'Forest Policy in North-East India,'*Indian Anthropologist*, December, 1999, Vol. 29, No. 2 (December, 1999) and 'Timber Ban in North-East India: Effects on Livelihood and Gender' in *Economic and Political Weekly*, May 26 - Jun. 1, 2001, Vol. 36, No. 21 (May 26 - Jun. 1, 2001),which are the critiques of current forest policy of the state governments. Though these articles do not deal with the forests policies of the past, the two articles are important contribution to the understanding of the continuity in forest policies of the states.

Some more volumes of collection of essays in the contemporary period have made important interventions in the environmental history of the region. Among them Sajal Nag (ed) *Playing with Nature: Essays in the History and Politics of North East India* (Manohar/Routledge, Delhi, 2016) has pioneering research articles on the environmental history of the region. Malabika Das Gupta, Arun Kuma Gangopadhyay, Tanmay Bhattacharya, MahadebChakraborti, *Forestry Development in North East India*. Omson, Guwahati,1986has important articles on forest history in Tripura (M Chakraborti) and Darjeeling (Malabika Dasgupta and B N Goswami (ed) *North East India: Deforestation and Its impac*t Purbanchal Prakash, Guwahati 2012 though essentially geographers and document the current times it has important articles on deforestation and its impact on different parts of the Northeast. The data provided by this important scholarly work is going to be important empirical evidence of the phenomenon.Besides these published works, there are a number of unpublished doctoral theses which also explored the environmental history of North East India. Of these Alka Francisca Michaels' Environment and History: A Study of the Interface of Ecology and Culture in the Brahmaputra Valley during the Pre-Ahom Period is one of the earliest and most significant study.[30] The thesis established the intricate connection between the ecology and formation of culture in the Brahmaputra valley that emerges as a unique space with three micro regions, namely the Western, Central and Eastern regions. The Brahmaputra valley is an environmentally rich space due to its location on the trijunction of three other regions such as the Himalayan ranges on the North; forest clad and highly dissected ranges of the Indo-Burmese border on the east and south, and vast plains of the Bengal delta to the west which lead to

environmental abundance and diversity in these three micro-regions. This diversity is manifested in the variations in soil type, forest products, climate, etc. The three regions are not just diverse environmentally but it also results in diversity in terms of settlements, agricultural pattern, craft activities, architectural patterns and administrative system. Another unpublished work on the environmental history was by Srijani Bhattacharjee entitled 'Colonial Forestry in Assam in the First half of the 20th Century: Forest Policies, Commercialization and Indigenous Impact.'[31]The study explores the evolution of colonial forest policies in Assam from 1912 to 1945 during which Assam was a vast province comprising of all the states of NEI except the princely kingdoms of Manipur and Tripura. The study focused on the system of colonial forest management in Assam dealing with the aspects of conservation, exploitation and forest revenue which had led to the commercialization of the virgin forests inhabiting the region. It enabled readers to understand the various problems and changes, which the tribes had undergone due the imposition of an alien economy in the region. The study included the impact created by the imperial forest policies on the natives of Assam, various developments in terms of trade in forest products during the World Wars and the Great Depression of 1930's. The study traced the processes of colonial intervention in the region leading to ecological changes. On Mizoram there are two more important works 'Water use Pattern, Water harvesting and the Colonial Management of Water Resources in Mizoram' by C Remruatkimi,[32] and 'Water, Woods and Wildlife: An Environmental History of Mizoram 1847-1947' by Esther Laltlankimi. [33]

CONCLUSION

The expanding literature on the environmental history of Northeast India in recent decades has highlighted the complex interactions among ecology, politics, culture, and economy in this geographically and ethnically varied area. Previous historiography of the Northeast was generally integrated into broader histories of colonial exploitation, nationalist movements, or ethnographic research, frequently neglecting the particularities of ecological change. The latest works under examination have addressed this oversight, affirming environmental history as an essential topic in the region's historiography.Edited volumes like *Playing with Nature: Essays in the History and Politics of North East India* (2016) have been significant in this context, assembling scholarship that highlights the distinctive environmental dynamics of the Northeast. This collection represents a groundbreaking intervention by positioning the environment as an active force in influencing social, political, and economic life rather than merely a passive backdrop. *Forestry Development in North East India* (1986) and *North East India: Deforestation and Its Impact* (2012) have significantly contributed by offering comprehensive empirical data on forest depletion, resource utilisation, and policy effects in particular states, including Tripura and Darjeeling. Although several of these publications are written by geographers and focus on current environmental issues, they remain significantly valuable to historians. The statistical and spatial data they offer—regarding forest cover change, biodiversity decline, and the proliferation of commercial crops—constitute an essential empirical foundation for historical research.
In addition to these published works, some significant yet less accessible unpublished doctorate theses have pioneered advancements in environmental history. Alka Francisca Michaels' Environment and History: A Study of the Interface of Ecology and Culture in the Brahmaputra Valley during the Pre-Ahom Period is notable as one of the earliest systematic endeavours to conceptualise the Brahmaputra Valley as an ecologically rich and culturally unique region. Michaels' delineation of three micro-regions—Western, Central, and Eastern—associated with distinct environmental and cultural trends highlights the valley's variety. Her research convincingly contends that the environmental richness, stemming from the valley's location at the convergence of the Himalayan ranges, Indo-Burmese hills, and Bengal plains, significantly influenced settlement patterns, agricultural practices, artisanal production, architecture, and governance frameworks. This thesis offers a long-term ecological viewpoint, highlighting that environmental diversity not only impacted subsistence and economy but also shaped the political and cultural trajectories of the region.Michaels' work exemplifies a pre-colonial ecological framework, while Srijani Bhattacharjee's *Colonial Forestry in Assam in the First Half of the 20th Century: Forest Policies, Commercialisation and Indigenous Impact*

provides a comprehensive analysis of colonial influence on forest management. Examining the timeframe from 1912 to 1945, during which Assam included all Northeast states save the princely kingdoms of Manipur and Tripura, Bhattacharjee delineates the shift from traditional forest utilisation to a system characterised by bureaucratic oversight, resource commercialisation, and scientific forestry. The research illustrates how the colonial government's conservation and revenue strategies enabled extensive commercialisation of untouched woods, and how these transformations impacted indigenous populations. The work contextualises Assam's environmental shifts within a broader world-historical framework by incorporating studies of global economic crises, such as the Great Depression of the 1930s, and geopolitical upheavals like the two World Wars. This theory is significant in demonstrating that colonial forest policies were not merely exploitative, but also reconfigured local economies, transformed settlement and livelihood patterns, and had lasting ecological impacts.Recent years have seen a heightened focus on the environmental history of Mizoram. C. Remruatkimi's research on water utilisation patterns, water harvesting, and colonial water governance underscores the essential function of hydrology in the socio-economic fabric of Mizo communities, as well as the changes induced by colonial administration. Esther Laltlankimi's Water, Woods and Wildlife: An Environmental History of Mizoram 1847–1947 broadens this focus to encompass the interaction between forest resources, wildlife, and human habitation during the colonial era. Collectively, these works underscore the necessity for a cohesive comprehension of environmental history in the hills, where topography, precipitation patterns, and biodiversity establish unique ecological contexts that diverge from the plains-centric histories of the Brahmaputra and Barak basins.Collectively, these contributions have greatly enhanced our comprehension of Northeast India's environmental history. Initially, they emphasise that the environment is not only a passive backdrop for human activity but an active agent in influencing historical developments. The abundance or scarcity of ecosystems, the diversity of plant and animal life, the seasonal dynamics of rivers, and the availability of forest resources have all shaped human settlement patterns, economic specialisation, and political structures. Secondly, these studies illustrate that environmental change is seldom attributable to a singular reason. It arises from the interplay of natural processes, human actions, and external influences—such as colonial policies, market integration, or technology advancements. Third, they emphasise the diversity of the Northeast.

The examined scholarship simultaneously uncovers specific gaps and shortcomings that subsequent study must rectify. The environmental history of the post-colonial Northeast is still inadequately explored, despite some focus on colonial and pre-colonial times. This is a notable oversight, as the decades after 1950 have experienced substantial ecological changes associated with state-sponsored development initiatives, hydroelectric dams, oil and coal exploitation, population expansion, urbanisation, controversies surrounding shifting cultivation, and displacements due to insurgencies. Failing to incorporate these post-colonial processes will render our comprehension of the region's environmental history insufficient and may perpetuate an artificial temporal divide between "colonial" and "modern" eras. Moreover, while there is some acknowledgement of indigenous ecological knowledge and resource management systems, a significant portion of the literature still examines environmental history predominantly from the perspectives of state policy and economic transformation. This may unintentionally replicate the hierarchical viewpoint of colonial archives. A more grassroots approach—utilizing oral histories, community archives, and ethnographic methods—could enhance historiography by emphasising how local groups saw, negotiated, and resisted ecological transformations. Collaboration among historians, anthropologists, geographers, and environmental scientists would facilitate the reconstruction of a more comprehensive understanding of environmental shifts in the Northeast.The importance of these works transcends the confines of regional history.

The environmental history of Northeast India directly addresses wider discussions in South Asian and global environmental historiography, including the ecological impacts of imperialism, the commodification of natural resources, conservation politics, the interplay between environment and identity, and the significance of peripheral regions within world-systems. By incorporating the Northeast into broader

discussions, historians can contest the region's marginalisation in dominant narratives and illustrate its significance as a locus where local ecologies and global dynamics intricately converge. In conclusion, the examined literature has established a robust foundation for the environmental history of Northeast India, elucidating the complexity and variety of human-environment interactions throughout centuries. The ecological and cultural formations preceding the Ahom dynasty in the Brahmaputra Valley, alongside the commercial forestry practices of the colonial government and the resource politics of the hill areas, collectively emphasise that the environment is fundamental to comprehending the region's history. Nevertheless, the voyage remains unfinished. Addressing the temporal, spatial, and thematic deficiencies—particularly through the integration of post-colonial advancements, indigenous viewpoints, and interdisciplinary perspectives—will enhance our understanding of Northeast India's history and clarify urgent contemporary discussions regarding sustainability, resilience, and justice in one of South Asia's most ecologically and culturally varied regions.

END NOTES

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