The Ecological Consequences of the British Forest Policy in Darjeeling District

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Abstract: *The paper is an attempt to trace the ecological consequences of the colonial forest policy in the Darjeeling district. The British forest management system has negatively affected the social, economic, and cultural life of the indigenous people in the Darjeeling district and, mainly, the environment in this region. On the eve of British occupation, the Darjeeling district was covered with dense forest, and a fragile ecosystem existed. From the beginning of the British occupation, the Physio-cultural setup of the Darjeeling district has been largely disturbed. The rapid heedless deforestation, tea plantations, the construction of railways and roads, illogical slope cultivation, and unscientific and unplanned use of land have led to the degradation of the ecological balance of this region. As a result of the British forest policy, several natural disasters have been seen in the Darjeeling district, such as soil erosion, landslides, floods, and as well as the extinction of various flora and fauna.*

Keywords: *Colonization, Forest Policy, Darjeeling, Ecology, Consequences*

Introduction: The ecological history of British India is of particular interest given the close connections that recent research has established between Western imperialism and environmental degradation (Gadgil and Guha, 1993, p.116). Western capitalism has profoundly altered the world's ecology, whose dynamic expansions have disrupted other ecosystems, first through trade and later through colonialism. At the beginning of the second half of the nineteenth century, Britain had emerged as a world-leading power in deforestation. In this period, by the name of shipbuilding and farming development, Britain had destroyed its own forests and the forests of Ireland and South Africa. Britain had celebrated the destruction of forests as a political victory (Gadgil and Guha,1993, p.118). Continuous deforestation increased the daily shortage of oak forests in Britain, the central useable timber for shipbuilding and wooden walls. As an alternative resource of Oak timber, Britain has focused on the Indian teak tree for shipbuilding purposes. The Indian timber trees, especially the durable teak and Sal tree, helped the British government in the World War and later the maritime and railway expansions.

In the first half of the nineteenth century, Germany emerged as a leading European country in forest management and conservation. With the help of Germany, Britain formed the Imperial Forest Department in India in 1864 (Gadgil and Guha, 1993, pp. 122). Dietrich Brandis, a botanist at Bonn University, was appointed the first inspector general of forest of the Imperial Forest department. The first Indian Forest

Act was passed in 1865. In this act, the government had the right to declare any land covered with trees, jungles, or brushwood as a government or reserved forest. The local government got the right to make any rules or acts in the name of forest preservation, and they also had the power to punish anyone who broke the law. The 1878 forest act was the comprehensive version of the 1865 forest act (Joseph 2010, p.56). This act was the first to classify Indian forests into three categories: reserved forests, protected forests, and unclassed or village forests. The government fully controlled the reserved forest. The local people had no right to collect timber, fuel wood, and the necessary products for their daily livelihoods, and animal husbandry and fishing were also strictly prohibited in the reserved forests. The protected forests were where the government had proprietary rights, and the local government could declare any protected forest area as a reserved forest. The people could enter protected forests, but restrictions were placed on what could be taken from the forests. In the village forest, the forest dwellers had the right to collect the forest resources for their livelihoods, and they had the responsibility to protect and improve the forest ecosystem (Majumdar, 2006, pp.124-25). The 1894 forest policy focused on promoting the country's general well-being through forest management and maintaining sufficient forests to preserve the physical and climatic situation. The reserved forests were also used for commercial purposes, which helped the government earn maximum revenue. It also emphasized the expansion of agricultural land by arbitrary conversion of forest areas (Bhattacharjee, 2016, p.2-3). Although the policy talked about promoting the country's physical and climatic conditions, the main aim was to earn maximum revenue through commercial and agricultural expansion. The 1927 Forest Act did not significantly change the previous forest laws because it was an amendment to the 1878 Forest Act.

At the time of British acquisition, the Darjeeling district was covered by dense forests from the top to the bottom. One of the most remarkable features of the forests of Darjeeling district is the beautiful variety of species they contain; there are even few places in the world where various categories of forest exist within a small area (O'Malley, 1907, p. 87). In his book "List of the Trees, Shrubs, and Climbers Found in the Darjeeling District of Bengal," J.S. Gamble mentioned that 988 species belong to 93 plant families. The forest dwellers of the district enjoyed their traditional forest rights without any restriction. However, significant changes occurred in the Darjeeling district under the administration of the colonial government, especially in the environmental section. The 1894 National Forest policy frankly declared that the first priority of this forest policy would be the country's general well-being, and the second objective would be preserving the climate and physical conditions and looking after the needs of the local people. However, the actual motive behind the forest policy was to promote commercialization. The same picture was seen all over India and in the Darjeeling district. In this region, they earned maximum revenue from the destruction of forests. The main factors for the degradation of Darjeeling forests were the

introduction of a permit system, the promotion of tea industries, auctioned the lots of forests, timber extraction for railway sleepers and dockyards, forest-based industries, the world wars, the public works department, and the demographic changes (Joseph 2010, p. 178). The fiscal orientation of the colonial land policy also worked towards deforestation. As their removal added to the class of land assessed for revenue, the forests were considered 'an obstacle to agriculture and consequently to the empire's prosperity.' The main thrust of agrarian policy was to expand cultivation, and the watchword of the time was to destroy forests. During the world wars, there was an increase in the trend of indiscriminate destruction of the Darjeeling forests in the name of war supplies. The Second World War impacted Darjeeling forests more because, at this time, India was the sole timber supplier in this war. Apart from timber, the box shook, and package materials, bamboo, and poles were in early demand. From 1835 to 1947, the so-called scientific forestry cleared approximately 60 percent of the densely covered forests. As a result, the local ecosystems of this region have lost their liveliness and capacity for regeneration.

Table 1, Timber and Firewood Extraction only from Darjeeling Division during the Second World War (1940-1945).

Darjeeling Division	Year	Timber In c.ft	Firewood In c.ft
	1940-41	166000	1369000
	1941-42	159000	1414000
	1942-43	189334	1551889
	1943-44	243000	1872667
	1944-45	287000	2868000
Total	Five Years	1044334	9075556

Source: Annual Progress Reports of Forest Administration of the Respective Years.

In the latter half of the nineteenth century and early decade of the twentieth century, the railway expansion occurred rapidly in North Bengal. The expansion of railways in Darjeeling was the most important indication for developing trade and commerce and consolidating colonial rule in this region. For the rapid expansion of railways, many dense forest areas were cleared. In this period, Darjeeling became an extraction hub of Sal timbers for railway sleepers. The result of indiscriminate timber extraction from this region was felt in every stage of the environment. In the annual progress report for the year 1874-1875, the conservator of forest observed:

> "The broad-gauge sleepers, planks, and scantling have all been cut in former years; they had to be searched for all over the Terai and lower hill forests, and they were partly carried and partly carted to depot. The narrow-gauge

> sleepers have all been cut during the years out of old logs lying about the forests. The Sal logs are all old cut logs, and the Sissu logs were those knocked down by heavy floods. They were dragged and carted from the rivers to the depots. The sleepers have been cut and collected for the Northern Bengal State Railway (Schlich, 1875, p. 31)."

From the above observation, we found that the North Bengal State Railway was mainly dependent on the Darjeeling Forest for the railway sleepers. The Sal timbers were sold partly to the North Bengal State Railway for sleepers and partly to the Public Work Department (PWD). After tea plantations and railways, some other industries were responsible for exploiting the forests in the Darjeeling district. In the last decade of the nineteenth century and the beginning of the twentieth century, the British government permitted companies to use the bamboo of Darjeeling forests on a contract basis. The owners of forest-based industries came from Calcutta and some other metropolitan towns of British India and gradually extracted the wealth of forest from Darjeeling. It was one kind of drain of wealth in the Darjeeling district.

The colonial forest management system in the Darjeeling district had various environmental, Social, and economic consequences. The British forest laws deeply impacted the environment and the lives of the local people who mainly depended on the forests. The colonial forest management system in the Eastern Himalayan region considerably changed the local ecosystem. Rampant careless deforestation, construction of roads and settlements, overgrazing, and unscientific and unplanned land use have led to the establishment of a vicious cycle of environmental degradation in the Darjeeling district, especially in the hilly region. Like all Himalayan regions, the Darjeeling district was fragile, and natural disasters and severe exploitation threatened its vegetation. We found most of the names of trees, shrubs, herbs, and other fauna elements influenced by the British forest policy in the forests of Darjeeling district (Joshep, 2010, p. 194). As a result of widespread deforestation by the British forest policy in the Darjeeling district, soil erosion, infinite landslides in the hilly area, and devastating floods occurred in this region. The annual temperature of this region has increased as a result of deforestation. Environmental degradation and related phenomena were the most widespread among the natural problems undermining the economic and cultural development of the Darjeeling district in sub-Himalayan West Bengal. Soil is considered one of the most important ecological factors. The Plants depend on their nutrients for water supply and refuge in the ground. Due to environmental degradation, the flora and fauna of the Darjeeling Himalayas have undergone drastic changes due to the physical and chemical conditions of the soil. As deforestation adversely affects atmospheric humidity, and in the case of the Darjeeling hills, it has decreased by up to 7% in the last hundred years, apparent soil desiccation is evident (Sarkar, 2012). In this region, deforestation coupled with high-intensity rainfall causes

accelerated soil erosion and widespread flooding of lower wetlands. In 1918, the Rakti and Chel rivers broke out a new channel at Ghish and caused extensive damage to cultivation in the plains. The confluence of the Chel and Ghish rivers has silted up much valuable land, and the Bengal Duars railway embarkment has swept away near Udlabari station (Farrington, 1919, p. 6). The two leading causes of landslides in the Darjeeling district were soil erosion and land mass sinking (Gerrard, 1990, p.257). The main rock types of Darjeeling were quartzite, slates, phyllite, flaky minerals, and partly sedimentary and metaphoric rocks. Naturally, such rocks contributed to vigorous erosion and landslides in the region. Taungya cultivation was also one of the indirect causes of soil erosion. In the colonial period, several earthquakes were found in the Northeastern region, such as the Bengal earthquake in 1885, the Assam earthquake in 1897, the Bihar earthquake in 1934, etc. (Joshep,2010, p. 202). Such earthquakes have caused severe flooding and landslide damage in the Darjeeling district. On the 24th and 25th of September in 1899, due to unprecedented rains, a large landslide was found in the Darjeeling district. And Darjeeling town was mainly damaged, and approximately 219 people died from this landslide (Dozey, 1922, p.140). Another major landslide occurred in the Darjeeling district on 15th January 1934 due to the Bihar earthquake. The divisional forest officer of Darjeeling made the following observations regarding soil erosions:

> "Apart from Supplying local needs for forest produce, the forests in the Darjeeling hills have a very great indirect effect on the people of lower Bengal. No year passes without landslips occurring to a greater or smaller extent in these hills…. The surface soil from the cultivated slopes and from the landslips is carried down by rainwater and deposited as a fine paste choking all the pores in the bed of the river……Though the woodcutter on the hill hardly realizes the effect of felling trees and laying bare the hill slopes, people hundreds of miles below suffer hardship. It is a great pity that the indirect effect of the existence of forests was not appreciated in the olden days, and instead of creating reserve on the hilltops and laying bare the whole hill down below, a more even distribution of the forest was not aimed at to prevent soil erosion and its deleterious effect on the Rivers of Bengal. The real measure of the importance of the hill forests should always be in terms of their effect on the water supply to the springs and on their preservation of soil erosion" (Dash, 1947, p. 136).

It is clear from the above observations of the Divisional Forest officer that some British forest officers were aware of the harmful effects of deforestation on the hilly areas. But on the ground, an opposite scenario was seen in this region. The landslides increased day by day as a result of deforestation by the British government, tea planters, contractors, and, later, by industrial classes. The landslides and related phenomena were among the most widespread natural

problems that have been accelerated by indiscriminate human intervention and environmental degradation, undermining the region's socio-economic development (Sharma, 2012, p. 93-94).

From the establishment of the forest department, the British foresters realized the need to maintain a sufficient supply of commercial trees, and they took the initiative to regenerate the trees by artificial cultivation. Monocultural plantations were started, which soon replaced the natural forests of the district, significantly affecting the flora and fauna of the district. So many commercially valuable trees, such as Teak, Toon, Oaks, Rungbul, India Rubber, etc., were planted by the foresters in this region. The rapid growth of Dhupi trees in Darjeeling caused it to become a commercial forest (Meikle John, 1938, p. 17). At certain times of the year, there was a dense litter of fallen branches under the Dhupi trees and as a result, changed the PH of the soil and also, during the monsoon session, the top of the soil washed, and gradually, the land became barren (Palit, 1979, p. 32). The wildlife of this region was negatively affected by the steps taken by the British foresters because they lost their shelter and plants on which they feed. The British forest policy had begun to prioritize some tree species over others, affecting the forest diversity in this region. The process of wildlife extinction actually started with deforestation for developmental activities by the British government. In Darjeeling district, several deforestations have changed the habitats of various forest animals and birds. The Forest Act and Wildlife Protection Act declared that the protection of animals and birds would be the sole object of their policy. But in the actual scenario, it was seen that the shooting facilities were provided at reasonable rates. The rights to catch elephants were also leased to individuals on fixed payment.

Tea and Cinchona plantations were among the primary causes of the depletion of the forests. For the tea and cinchona plantation, the vast land had been converted into tea gardens and a cinchona tree area, the mostly converted land previously covered by the forests. The tea companies consumed fuel, wood, and charcoal for labor and factory purposes. The charcoal was used to dry the tea, and the soft wood was used to make the tea boxes. In the initial period, the tea companies used the wood from their own possession wastelands, but gradually, they collected wood from the nearby forests. Initially, cinchona was planted for experimental purposes, and gradually, it became a primarily commercial product due to extensive cinchona plantations. The private enterprises also started the Cinchona plantation with the government's direct encouragement by supplying seeds and seedlings at nominal rates (Dash, 1947, p. 140). As a result of clearing the dense forests for the Cinchona plantation, the various trees, bushes, and precious wild animals were destroyed. The Cinchona plantation also contributed to the alienation of forest lands in the hilly region. Tea plantations helped extend and consolidate the British empire in the Darjeeling district. The tea plantation had started in Darjeeling under Dr. Campbell, who was the superintendent of the Darjeeling district (O'Malley, 1907, pp.72-73).

The tea companies extended the number of tea gardens and the area with the British government's backing.

Table 2, Increasing Number of Tea Gardens from 1874-1905.s in Darjeeling District.

Year	Number tea of gardens	The area under tea is acres.	The outturn of tea in lbs
1874	113	18,888	3,927,911
1885	175	38,499	9,090,298
1895	186	48,692	11,714,551
1905	148	50,618	12,447,471

Source: O'Malley, L.S.S. 1907. Bengal District Gazetteers: Darjeeling, p. 74.

The British government decided to make the Darjeeling a resort and sanitorium. For this purpose, the construction of roads and railways and the rapid expansion of tea gardens brought the needed laborers from Nepal. The arrival of large numbers of migrant laborers from Nepal and various restrictions on local communities' activity by the forest policy, such as shifting cultivation, cattle grazing, and fishing in the reserved forests, had led to local indigenous people like Lepchas losing their identity. Gradually, they became refugees from their own land and were resettled forcefully in different places. On the other hand, the increased alarming population in the Darjeeling district has negatively impacted the forest resources. Rapid population growth led to the conversation of agricultural land as well as barren lands into homesteads. Darjeeling witnessed haphazard growth with high-rise concrete structures, which not only spoiled the aesthetic and picturesque view but also created risk with an increased probability of landslides. Rapid urbanization and industrialization have polluted air and water, which are inexhaustible livelihood resources, in the Darjeeling district. Spring water sources in hilly areas were dried up due to deforestation and overgrazing in catchment areas. At the beginning of the 21st century, the British administration cleared the Lava virgin forest, Rachela range, where the source of water was located.

After analyzing the ecological impact of the British forest policy in the Darjeeling district, it can be said that in the actual scenario, the so-called scientific forestry did not favor environmental conservation in this region. The commercial exploitation of forests, desperate efforts to generate revenue, demographic changes due to tea and chinchona plantations, monoculture plantations of commercially viable tree species, combined with the expansion of roads and railways- all were responsible for the loss of forests and, as a result, the ecological disaster has happened and the effects of which are still felt in the Darjeeling district. The negative externalities

produced by the British forest policy in the Darjeeling district continue to cause frequent environmental hazards even today.

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