

Colonial Intervention and Hill Ecology: Explaining the Historical Ecology of Darjeeling Hills

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Abstract

Global environmental concerns have of late led some historians to study the environmental aspects of the past human societies. Environmental change is arguably the most pressing and potentially disastrous problem facing the global community. Pollution, global warming, species extinction and massive disruption of critical ecosystems have become commonplace topics. Although recent improvements in the quality and quantity of data documenting environmental change have been dramatic, those who studied the problems or sought solutions to the problems have until recently been physical scientists with little or no training in the social sciences. The present study looks closely at the British colonial policies towards forest management with special reference to Darjeeling region and attempts to gauge its long term impact.

Keywords: Darejeeling, Forest Policy, Biodiversity, Flora and Fauna, Environment

Global environmental concerns have of late led some historians to study the environmental aspects of the past human societies. Environmental change is arguably the most pressing and potentially disastrous problem facing the global community. Pollution, global warming, species extinction and massive disruption of critical ecosystems have become commonplace topics. Although recent improvements in the quality and quantity of data documenting environmental change have been dramatic, those who studied the problems or sought solutions to the problems have until recently been physical scientists with little or no training in the social sciences. Global climate models, fine resolution remotely sensed data and the computer assisted manipulation of special information to name a few, have offered sophisticated means by which environment could be seen to vary through time. Although these developments have enabled researchers to ask complex questions about the relationships among elements and factors affecting the and affected by climate, few efforts have been made to incorporate information either about how human beings have altered the environment or about how environmental change revised human activity. Changes in civilisation and culture through time resulted in both intentional and unintentional modification of the global environment of which biodiversity constitute the most important component. The awareness of human beings dependence upon nature had long ancestry, but the realisation of the significant role of human being as the maker and un-maker of nature has developed only recently.

The impact of British colonial policies and laws on their Indian Empire has always been a fertile ground, providing subjects for academic pursuit. Of late, because of increasing and aggravating environmental problems faced by the country, region and the world at large Academicians have turned back to study the role played by British policies in the long drawn-out process of environmental degradation.

Darjeeling, situated in the north-eastern part of India, has always been known for her natural resources. The hills and forests, besides enhancing the beauty of the land, contain valuable flora and fauna, some of which are rare in the world. In course of its historical development, Darjeeling became part of the British Indian Empire as per the provision of the treaty signed by the British and the raja of Sikkim. Since the passing of Darjeeling into the sphere of British colonial rule, the area like other parts of British India was subjected to fulfilling the imperial interests and need of the British Empire.

The symbiotic relation between man and nature was disrupted first in England since the Enlightenment, which gradually spread to all parts of their Empire and by about 1860, England had emerged as the world leader of deforestation devastating its own wood and those of Ireland, S. Africa and North eastern United States to draw timber for ship building, iron smelting and farming¹. Thereafter the British turned their attention to the virgin resources of India and where meanwhile they consolidated their imperial hold. The basic aim of their policy in this country was commercialisation of natural resources so as to earn optimum revenue though it meant wanton destruction of environment and serious ecological imbalance.

Geology of Darjeeling

Nature has a way of writing her own history in her rocks. Indeed, the geological history of any region is a record of all the ancient changes or events, geographical, climatic and pertaining to its life that it has undergone or witnessed. Geographically, the Sikkim- Darjeeling Himalayas is wedged between central Nepal Himalayas to the west and the Bhutan Himalayas to the east. Geological investigation of this region began as far back in 1854 where Hooker in his famous Himalayan Journal reported regional gneissic domes, the overlying bedded sedimentary rocks and crinodial limestones at the Tso lhamo Lake during his extensive travels in many parts of Sikkim. Also an excellent account of the geology of the Darjeeling district and its foot hills has been made by Mallet (1875). Geologically the Himalayan Mountain has been classed among the younger mountain ranges of the world. The geological formation of Darjeeling Sikkim Himalayas consists of unaltered sedimentary rocks. Morphologically the area is well defined. The-sub Himalayas are made up of Siwalik deposits of the tertiary age. North of the Siwaliks is coal bearing lower Gondwana formation comparable to Damudas of peninsular India. A visit of the site of the land-slide in the Darjeeling district will reveal that the soil is composed of soft and loose sandy earth mixed with boulders of various size and hardness. The boulders are mostly sandstone, mudstone, and metamorphic rock.

Biodiversity

The most remarkable feature of the forests of Darjeeling is the wonderful variety of species that they contain. There are in fact probably few places in the world in which so many different types of forests exist within so small an area². The configuration of the hills and mountains combined with the differences of altitude, temperature, rainfall and soil type in the region greatly determines the nature of different species found in the different parts of the district.

¹ Gadgil Madhav and Ramchandra Guha, *This Fissured Land: An ecological History of India*. (New Delhi: Oxford University Press, 1992), 119

² O' Malley L.S.S, *Bengal Gazetteers: Darjeeling*, (Alipore: Government printing Press, 1907), 87

Floristically the eastern Himalayas are one of the richest regions in the world and are literally considered a botanists paradise and have thus attracted a large number of plant hunters and Botanist during the last two centuries. Phyto-geographically it forms a meeting ground of the Indo- Chinese and Indo Malaysian tropical lowland flora, the Sino-Himalayan east Asiatic flora and the Western Himalayan flora comprising about 9000 plant species with a high percentage of endemic plants. Therefore the Darjeeling- Sikkim Himalaya, an integral part of the eastern Himalayas region, is a storehouse of biodiversity, boasting of a large number of important, rare and endangered species of flora and fauna. The region exhibits a wide range of altitudinal variations that is instrumental in creating climatic variations ranging from tropical humid to the arctic type which consequently lead to vegetation variations. The region, however, shows predominantly temperate vegetation. Its continuity with other Himalayan ranges and with the plains helped it to host an extremely rich flora. However like all Himalayan regions, this region remains fragile and its vegetation remains under threat from both natural calamities and severe exploitation.

So far as any inventory of tree species is concerned, we are somewhat better off as we are in a position to prepare a list of tree species on the basis of account left by several historical sources. Since Darjeeling does not have a pre British history worth name, we don't have any inventory of trees before the British period. The Britishers, after establishing their rule in Darjeeling, took interest in managing the forest resources of Darjeeling; and their inquisitives, combined with their subsequent requirement for forest management led to preparation of inventories listing the various tree species found in the forests of Darjeeling.

Past Floristic Work

The floristically rich Darjeeling Himalayas has attracted plant explorers, botanists and researchers since 18th century. The Indian flora was scientifically and systematically explored since the 1840s. The first two attempts were led by Thomas Thomson who explored the North western Himalayas. It was none other than Sir Joseph Dalton Hooker who introduced the beauty and floristic richness of this region to the outside world for the first time. Sir J.D. Hooker in 1848 took up the third botanical expedition to the eastern Himalayas and in doing so, became the first ever botanical explorer of the eastern Himalayas while writing the Flora of British India as a whole, in all the previous works Darjeeling and Sikkim have been considered together as Darjeeling was then a part of Sikkim.

Since then, explorers from different far and wide have explored the region from time to time and a number of floras included their records and findings contributing outstanding works adding to the knowledge of the vegetation and floristic of the region. The major contributions include J.D Hooker(1849-51, 1854, 1885, 1872 1897, 1907); T. Anderson(1832-1870); C.B. Clarke (1876, 1885); H.J. Elwes (1877); George Watt (1881); R. Pantling with Sir George King. Various works have put forth the classification of the vegetation of this region and it includes works like Gamble (1875) Cown (1929), Champion (1936). These authors have essentially classified the flora and vegetation according to altitudinal ranges, although they differ considerably in details. Apart from these the statistical account of W.W hunter and report on inspection made by forest officers like Dietrich Brandis (1879) and B.Ribbentrop (1889) helps us to a great extent in learning about the forest resources of Darjeeling. Gamble for example in his work Trees

and climbers of Darjeeling mentioned 90 trees and shrubs directly consumed or used by the *Lepchas* an indigenous tribe of Darjeeling.

Fauna of Darjeeling

The reports of early colonial foresters and settlers and surveyors tell us that a hundred and seventy five years ago, the Darjeeling district was infested with wild animals like elephants, tigers, leopards, and spotted deer's. Wild boar, bear and wild goats roamed the dense forests of the Terai, the valleys of the Tista, Rangit and Balasan rivers and even frequented the high forests of the Singalila range. It was estimated that there were between 80 and 90 species of mammals in the district.³ The best represented was the cat family of which there were 13 known species.

The Darjeeling district was also rich in birds' life. It contained nearly a quarter of the species of birds found in India Burma and Ceylon that means about 550 species.⁴ Of the approximately 550 species in the district, more than half are passerine group. Of these groups the largest families are the Timalidae with 61 species of birds including laughing thrushes and babblers.

They report that there were about 51 species of snakes in Darjeeling districts. Of the 51 species of snake found in the district, eleven were poisonous; and six were deadly poisonous.⁵ A hundred and twenty five species of fish have been counted in the streams and rivers of the Darjeeling district. The insect fauna is vast, as any collector of beetles and butterflies in Darjeeling will know. Butterflies are found in large numbers mainly in the valleys, along the streams and rivers. The most beautiful specimens belong to the swallow-tail family. Among the moths, the Atlas moth, with its colourful marking attains a span of ten inches or more. There are also two species among the actias that are also very beautiful.

Early British Period and the Policy of Indifference towards Environment

Among British colonies India stood pre-eminent by reason of its vastness, the density of the population and the seemingly immeasurable extent of its natural resources. The newly established British administration in India was not alive to the need for careful husbanding of natural resources and was even under the impression that the natural resources of India were inexhaustible. Up to the middle of the 19th century this policy of indifference continued. The extension of cultivated acreage was an index by which the British evaluated the success or failure of their policies. The needs of forests or the various beneficial effects of the same were pondered upon by several British administrators. Especially the relation of forests to climate change was seriously thought of. The observation of B. Ribbentrop the inspector general of forest to government of India observed:

Now, though it has been admitted in the first part of this introduction that the climate of each country and of each district is prima-facie dependent upon its geographical position, its elevation, the configuration of the ground, and other cosmic causes which

³ Dash A.J, *Bengal District Gazetteers: Darjeeling*, (Calcutta: Bengal government Press, 1947), 28.

⁴ Ray B, *District Handbook: Darjeeling. Deputy Superintendent of census Operation, West Bengal*, (Calcutta: Mudrani Press, 1961), 17-18.

⁵ *Ibid*; 19.

are independent of local circumstances. It can hardly deny that the existence of large well-wooded areas in a country naturally capable of growing forests affects its climate in a very marked degree. History proves this to us in numerous instances where the deterioration of the climate of whole districts, and even of whole countries, has followed the destruction of forests.⁶

Forest officers sent to assess the jungle's value wrote dramatic reports predicting the imminent destruction of forests, soil erosion, land-slide and desiccation of spring if conservation was absent. Dr. Gibson in Bombay presidency compiled around 1850, a list of rivers and creeks that had silted up along the Malabar coast. Thus the idea of conservation, environmental protection, and sustainable development, commonplace in current debate on environment internationally, was being generated in the colonial project. The observation made by surgeon naturalist like Alexander Gibson in Poona, Hugh Cleghorn in Mysore, and Balfour in Madras had created a body of reports and influential opinion that linked deforestation to the disturbance of hydrological regime, desiccation and aridification. With the state committed to agriculture expansion as its major source of revenue, the early decade of British rule witnessed a fierce onslaught on the natural resources of India.

The growth of any commercial venture presupposes the existence of a surplus capital. This capital had its source in England during the early and middle part of the 19th century. Due to the slower rate of population growth, the profit had little opportunity for reinvestment in the country and naturally accumulated and awaited investments in the colonial territories of Great Britain. The accumulated capital in Great Britain found the safest investment in commercial agriculture. Probably this explains the idea of introducing tea and Cinchona in Darjeeling. According to E.W Winfield the deputy commissioner on 27th February 1873 said that in 1873 a total of 70395 acres of forest land were in possession of various tea companies. Thus it may be stated that most tea plantations were established by clearing natural forests on lands acquired or purchased from government of India. Whenever market for tea were strong enough to enable expansion of plantation acreage, forest cover correspondingly got reduced.

How and why of Ecological degradation

The colonial period of Darjeeling underwent the industrial colonial mode of resource use which remained in force till independence. In the context of human civilization as a whole, this might be calculated to be only a minor fraction of the time that human being has spent husbanding plants and animals. However, it is very difficult to quantify the environmental impact or harm caused by the colonial policies. Obviously tea and cinchona is different from other means of forest regeneration. The green cover of tea and cinchona plantations is very much different from the diverse species rich natural forests. Therefore these plantations definitely served as a great destroyer to natural forest cover. Many precious floral species became extinct before they were recorded. This was true for the middle-hill region which was highly disturbed due to tea cultivation. Out of 180 species of Liverworts reported from India by the year 1947, about 140 were from Darjeeling district of which 72% were found to be endemic.

⁶ Ribbenthrop Beerthhold, *Forestry in British India*, (New Delhi: Indus Publishing Company, 1900), 65.

During the colonial period British foresters chiefly tried to replace the natural forests of the districts through the plantation of exotic and commercially important species. Monoculture plantations were thus initiated that soon replaced the natural forests throughout the length and breadth of the district that highly affected the flora and fauna of the district.

The fauna of Darjeeling was also drastically affected by the British intervention in the area. The process of their extinction actually began with the clearing of the forests for developmental activities. They enacted the rules for the protection of wild life since 1912 Rules were framed to preserve animals and birds in the reserve and yet at the same time afforded facilities for shooting at reasonable rates.

After a careful study of the British forest policy and its implimentation on the ground level in Darjeeling, the researcher had observed that the unrestricted deforestation of the forest areas in Darjeeling District must have led to significant change in the soil composition of the district. The denudation and weathering of exposed soil was a well known fact. At the same time, landslides in the hills and floods in the plains, which was a common phenomenon in Darjeeling Disrict might have led to more transportation and disposition of soil. Environmental degradation and associated phenomena were the most pervasive of natural problems that undermined the economic and cultural development of the Darjeeling District of Sub- Himalayan West Bengal. Deforestation along with high intensity rainstorm induced accelerated soil erosion, mass movement in the upper catchment and massive flood in the lower parts of the catchment area.⁷ For example, in 1918, the Rakti and Chel rivers broke out a new channel into Ghish and caused immense damage to the cultivation in the plains. Much valuable land was silted over by the rivers Chel and Ghish combined and the Bengal duars railway embarkment swept away close to Udlabari station.⁸ Implementation of various development scheme, construction of human settlemnt and roads to cater the smooth movement of forest produce to the supply line, boosting of tea plantation, quarrying, on the himalayan immature geology triggered the disaster, huge and complex, never encountered before the advent of the British. The situation was different before the advent of the British. The hills were densely covered by natural vegetation with very thin population and the harmonious relation between the upper and lower catchment was well preserved. Extensive heedless deforestation, haphazard construction of roads and settlement, over grazing, in other words unscientific and unplanned usages of land has led to the establishment of vicious cycle of degradation of hill ecology of Darjeeling District. Revenue maximisation being the prime concern of the Forest Department, ecological concern failed to get the necessary attention. It undertook a lot of regenerative works no doubt, but the efficiency of the same was doubtful from the ecological point of view.

The Himalayas compose one of the lofty mountain chains of the world. Darjeeling is a part of the eastern Himalayas. Ecologically, these constitute a fragile and unique terrestrial system. The Darjeeling Himalayas is different from the rest of the Himalayas with regards to its ecological set up. Erosion of soils and sinking of land mass are the two basic causes

⁷ A letter from D.H Lees Esq; Deputy Commissioner of Jalpaiguri to the Commissioner of the Rajshahi Division, No 1232 G; dated Jalpaiguri the 1st August 1911, File 4-W/1-No 1-2.

⁸ Farrington H.A, *Annual Progress Report of Forest Administration in Bengal for the year, 1918-19*. Conservator of Forests in Bengal, (Calcutta: Bengal Secretariate Press, 1919), 6.

of landslip in Darjeeling District.⁹ The Mountains of Darjeeling consists of rocks of different stages. Of these the Damuda Stage of lower Gondwana, Nahan Stage of Siwalik system, Daling series and Ddarjeeling Gneisses are important. Major rock types are quartzites, slates, phyllite, foliated rocks composed of flaky minerals and partly sedimentary and partly igneous banded metamorphic rocks. These gneissic and schistose rocks mainly are subjected to severe weathering and erosion Mica-schist are easily carried out by flowing water. Naturally they help vigorous erosion and slip of lands. Soil erosion in Darjeeling Himalayas is unfortunately a man made problem being aggravated by natural erosion.

Natural erosion is mainly pronounced in areas where the land is steep giving run-off a good momentum. High rainfall and steep slopes created favourable conditions for the initiating of run-off. Soils originating from schistose and gneissic rocks do not contain any cementing material to hold them firmly enough. As a result, immediately after rain, wherever the top soil bare enough, it is washed away by rain water. The steepness of the terrain, the tectonic instability of the area, as well as the relatively young age of the mountains all contribute to the erodability of the slopes. Besides, seepage of water within the soil layers makes the schistose parent rock slippery enough and help landslides in all small catchment areas.¹⁰ This is equally true in case of big rivers- the Teesta catchment, the Balasan catchment, the Rangit catchment, the Lish catchment, etc.

Whenever human agency interfered with the system of equilibrium in nature, disasters happened. The colonial intervention and the developmental activities that followed were primarily responsible for this ecological degradation of the Darjeeling Himalayas. Of all factors, deforestation was primarily responsible for rapid erosion of soil. Mass felling of trees as has already been dealt with, has had left the land bare, and prey to run-off along the steep slopes. It was said that deforestation in Darjeeling mountain was always followed by afforestation. But it was not true in all cases. In some places Forest department had planted trees like *Dhupi* (*Cryptomeria japonica*). But these gathered sufficient strength to hold the soil not before fifteen years after the plantation. Within the span of these fifteen years the soil layers were partly or totally carried away. The clear felling of trees and taungya cultivation kept the mountain bare for a substantial period there by accelerating soil erosion.

The people of Darjeeling usually got their supply of water from mountain springs and other water channels. Even before independence they had to fetch water from a greater distance than before. Many springs had dried up and many channels had retreated. Deforestation had a direct bearing on this development. Deforestation fostered runoff as well as restricted infiltration of water into soil layers.

Earthquake-induced landslides were an additional complicating factor when trying to assess land degradation. A number of earthquakes have occurred over the last 114 years, such as the Bengal earthquakes (14 July 1885), Assam earthquakes (12 June 1897; 8 July 1918), North Bihar earthquakes (15 January 1934). Earthquakes such as these led to severe flooding and landslide damages in Darjeeling. Although landslides prior to 1899 were not recorded in details it is clear from travellers accounts that landslide scars have always been prominent

⁹ Gerrard J, *Mountain Environment*, (Cambridge, MA: The MIT Press 1990), 257

¹⁰ *Ibid*, 62.

features. Indeed Joseph Hooker mentioned such scars in his memoirs for 1854. All except the landslips associated with the 1934 Bihar earthquake were caused by rainfall of above average intensities. The landslide of 24 and 25 September 1899 were caused by 60.96 cm of rain. The town of Darjeeling was badly damaged and nearly 219 persons perished under the falling debris or land slip.¹¹ On the subject of soil erosion the Divisional Forest Officer of Darjeeling made the following observation.

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 land slip occurring to a greater or smaller extent in these hills.... Though the wood-cutter on the hills hardly realises the effect of felling trees and laying bare the hill slopes, the 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 olden days and instead of creating reserves on the hills tops 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 water supply to the springs and on their prevention of soils erosion.¹²

From the above observation of the Divisional Forest Officer it was obvious that the British forest officers were aware of the evil effect of the deforestation of the hill area. Wherever the forest had been cleared away, the protective covering of the deep soil which was the legacy of the primeval forest had now all been washed away. Sheet erosion, gullies and landslide had started across the Darjeeling Himalayas. Thus the wanton destruction of Darjeeling forest in the early years by the tea planters, contractors, and lately by the industrial class posed a great threat to the station of Darjeeling. The question of the denudation of the hills of Darjeeling district attracted the attention of government as early as 1911.¹³ This point had been expressed to the deputy commissioner of Jalpaiguri by a tea planter with long experience in the district. According to him the flood of Rehti River became worse than what it was 20 years ago, and the bed of the river near the hills had widened considerably. This particular river often changed its course and the change of the course of the river had much more serious consequence than in the past. As a result of the agitation started by the Indian Tea Association in the year 1905 and of the enquiries made by an officer of the Forest department deputed in the year 1908, a committee was appointed in the year 1910 to investigate into the mischief caused by deforestation in the District of Darjeeling and to suggest remedial measures.¹⁴

In a letter No 1281 dated the 19th march 1912 the Commissioner of Bhagalpur Division was asked to furnish his opinion on the recommendation made by the Darjeeling Safety Committee.¹⁵ The Commissioner of the Bhagalpur Division was requested to consider, when

¹¹ E.C Dozey, *A Concise History of the Darjeeling District Since 1835*, (Varanasi: Deepak Press, 1922), 140.

¹² Arthur Jules Dash, *Op. cit.*, 136.

¹³ A letter from D.H. Lees Esq; Deputy Commissioner of Jalpaiguri to the Commissioner of the Rajshahi Division, No 1232 G; dated Jalpaiguri the 1st August 1911, File 4-W/1-No 1-2

¹⁴ The Proceeding (A) of the Hon'ble L.t. Governor of Bengal Revenue Department, Forest Branch on the Darjeeling Hill Side and River Conservation Bill 1917, Proceeding Volume of July 1917, No. 1-8

¹⁵ A Letter from R.N. Reid Esq, Under Secretary to the Government of Bengal, Revenue Department to the Commis-

submitting the report of the committee to Government, how far the remedies proposed were politically and economically possible and by what means the necessary regulation could be imposed upon the holders of different classes of property in the District of Darjeeling.

Inquiries made by various officers showed that there were certain definite evils to be dealt with, and that in particular the rough cultivation of clearing without precaution and deforestation of slopes too steep for any kind of cultivation and their exposure to unrestricted grazing were causing serious landslips likely to be detrimental to the drainage of the district and to its general welfare. There were also evidence that not only were the hill- sides eroded and the river banks destroyed in this manner, but also that violent floods were causing considerable havoc in the plains.¹⁶ The necessity of dealing with the question thoroughly and effectvely was, therefore, apparent. The report of the Committee was submitted by the Commissioner in June 1911.¹⁷

The Committee recommended the following measures.

1. To reafforest and close to grazing those portions of the hill-side which have slipped or are likely to slip.
2. To prohibit rice cultivation on any but the easiest slopes
3. To prohibit cardomom growing as much as possible practically everywhere
4. To restrict grazing on steep and unprotected slopes.
5. To reserve a protective belt of land along the banks of all main streams to a width varaying with the size of the stream.

The Deputy Commissioner and the Commissioner were of the opinion that the general adoption of the remedial measures 1to 4 suggested by the committee would entail ruin on many raiyats and hardship to nearly all. Any practical scheme for applying remedies for deforestation, etc. must be necessarily be framed with reference to the conditions and of the ownership and tenure of land prevailing in the area concerned. In this view the Deputy Commissiner classified the area of district into two groups. Group one consisted of land not under the direct management of Government .They constituted about 303 square miles. Group two constituted of land under direct management of Government like reserved forest, Cinchona reserve Bazar and waste land and Khas mahal land. They were about 861 sq miles. The Deputy Commissioner suggested that legislation should be undertaken to take the necessary power. In paragraph 41 of his report the Deputy Commissioner gave the outline of the proposed legislation. In the order in council, dated 8th August 1911, it was directed that the outline Bill be circulated for public opinion in Darjeeling District.

sioner of Bhagalpur Division, No. 1281, dated Calcutta, the 19th March 1912, File 10R/ 1-2 of 1912.

¹⁶ The Proceeding (A) of the Hon'ble L.t. Governor of Bengal Revenue Department, Forest Branch on the Darjeeling Hill Side and River Conservation Bill 1917, Proceeding Volume of July 1917, No. 1-8

¹⁷ Proceeding (A) of the Hon'ble Lt. Governor of Bengal Revenue Department Forest Branch, On deforestation in the district of Darjeeling, dated 30th March 1912 from the Commissioner of Bhagalpur Division to the Secretary to the Government of Bengal, File 10R/ 1-8 .

Similarly in a P.W.D Resolution No 483J , dated 25th September 1911, a committee was duly appointed to consider the safety of Darjeeling station and the steps to be taken for the afforestation of the lower slopes and the more efficient control of the drainage from the Municipal area and of the cultivation and quarrying within this area and on the lower slopes.¹⁸ On the recommendations of these committees a Draft Bill was presented in the Bengal Legislative Assembly. In accordance with the orders contained in paragraph 3 of government letter No 2622 dated 24th August 1911, a copy of the proposed Act, together with a request for the expression of opinion on its provisions was sent to prominent citizens of Darjeeling.¹⁹ Their names includes the Secretary of Darjeeling Planters Association, Maharaja of Cooch Behar, Maharaja of Burdwan, Colone G.Grant Gorden Manager of Teesta Valley Tea Company, Mr C.Bald, Manager Takvar Tea Company, Mr, W. Christon, Chairman, Lebong Tea Company, Mr J.S. Hewitt, Manager, Darjeeling Tea and Cinchona Association, Mr. Lister, Manager, Peshok Tea Company etc.. Except Maharaja of Burdwan and Mr. Lister all were in favour of the Act. The Maharaja opposed the Act on the ground that it would prove oppressive to the landlords generally and specially to the small land owners with limited means. Mr Lister was of the opinion that the government would become unpopular with the owners of the tea gardens or other estates in which they were situated.. Ultimately the Darjeeling Hill-Sides and Rivers Conservation Bill got the sanction of the Government of India for its introduction in 1917 to provide for the Conservation and protection of Hill sides and rivers in the District and to that end to provide facilities, where necessary, for the afforestation of land situated within the District of Darjeeling. The Bill had 21 provisions. In spite of this alarming warning the Forest Department continued the previous mode of operations, which intensified during the First World War and the period after.

Hence, in a nutshell, it is seen that the 'scientific' British Forest Policy in Colonial India in general and Darjeeling in particular was not at all scientific in terms of ecological conservation. The commercial use of forest, desperate attempts at revenue generation, increased demographic change owing to settlements for tea and cinchona workers, extension of agriculture and mono-cultural plantations of commercially viable tree species, coupled with expansion of roadways and railways – all contributed to the loss of forests and consequent ecological catastrophe, the impact of which is still felt in the region. Despite several odd attempts at regeneration of forests and ecological conservation since the British days, the negative externalities produced by the colonial forest policy in Darjeeling has always remained producing frequent environmental hazards even today.

¹⁸ Memo by B.K.Finnimore *Esq*, Secretary to the Government of Bengal, Public Work Department, No 250 M.P.I., dated Calcutta the 19th February 1912.

¹⁹ Proceeding (A) of the Hon'ble Lt. Governor of Bengal, Revenue Department Forest Branch, dated 30th March 1912 from E.H.C. Walsh *Esq*; Commissioner of Bhgalpur Division to the Secretary to the Government of Bengal, Revenue Department, File 10R/1-No 3-4.