

## **“Colonial Modernity and British Capitalism: Re Reading the History of the Colonial Indian Railway and its Role in the Destruction of Indian Environment and Ecology”**

*Sumitha S. S.  
Research Scholar,  
Department of History,  
University of Kerala*

The life of Mahathma Gandhi have had a considerable influence in contemporary environmental issues in India. He believed villages are the souls of India. Mahathama Gandhi never used the word environmental protection. He did not want India to follow the colonial modernity. He argued even in 1909 that industrialization and machines have an adverse effect on the health of people.<sup>1</sup> He was not opposed to machines as such; he definitely opposed the large scale use of machinery.<sup>2</sup> Deforestations and increasing emission of smokes and injurious gas are not only polluting the atmosphere, but also affecting adversely climatic conditions to the awful disadvantages of living being, Mushrooming of the slum area as an unavoidable byproduct of urbanization the syndrome of our cherished mode of development is fatal to the physical atmosphere required for proper living.<sup>3</sup> In the writings of Gandhi never appeared the word ecology, and the philosopher has never explicitly pursued an environmental movement but can be considered an early environmentalist. Given his enormous awareness and desire for a more balanced relationship between man and nature. Gandhiji realized the importance of living close to earth as part of ecosystem. The philosophy of life and his own experience or our culture and social system. Human being have become dominant organism over most of the earth, damaging or disturbing more than half of the world’s earthbound ecosystem.

The goal of colonialism is to enrich the colonial empire in trade and resources. This was accomplished with the mechanisms of natural resource extraction and cash crop production. The economic pressure of running and maintaining a foreign colony can be best illustrated by the rise and fall of the Dutch East India company. Ecological isolation can produce incredibly unique ecosystems with species of flora and fauna that simply could not exist anywhere else on the planet. The Industrialization of Europe led also a major changes in the rural economy. The environmental consequences of railway construction and operation have been little studied despite a clear recognition by contemporary observers from the 1850’s onwards that the railways had significant, negative environmental impacts. Railways were first introduced to India in the year 1853 from Bombay to Thane.

In the past few decades, the Himalayas in India have seen widespread of deforestation and inter related problem of landslides, soil erosion etc.<sup>4</sup> The establishment of railways was a resource extraction project of the colonial states in India. It had negative consequences in ecosystem, mainly in the arena of forests. The railways remained as the colonial centre of India. Railway

construction on the Indian sub-continent began in 1850 and construction has gone on continually ever since. The first section of railway opportunity line officially started in April 1853. By 1900 the rail network exceeded 23000 route miles. The construction and operation of railways implies changes in the surrounded landscape that alter the micro climate, soil and water dynamics, contributing to the degradation of the natural habitat for many species. During the railway construction the main disturbances were air, soil and water pollution. Besides the above noise pollution and vibration which may alter species richness and species abundance.

The emission of gases from traffic constitutes an important sources of environment pollution all over the world. These emissions depend mainly on the type of transport and fuel. Potential sources of contaminants associate with railways include diesel exhaust and the abrasion of breaks, wheels and rails, as well as dust from the transport of minerals. The main pollutants derived from the diesel power locomotive are carbon dioxide methane, carbon monoxide, nitrogen oxides, nitrous oxide, sulphur dioxide, non methane volatile organic compounds, particular matter and hydro carbon. A growing number of monitoring studies have used bio indicator plant species as surrogates of air pollution across railways.

The increases in the human pollution and vehicles, emission arising from transportations have become one of the most important sources of heavy metal. Fuel combustion, vehicular and track material abrasion and leaked cargo emit particles containing metals that are deposited in the soils where they can remain for many years due to their low biodegradability. Plants and soil organisms are the first recipients of the emission pollutants. Railway construction parallel to streams can result in water disconnections that dry the soils such disconnections can have a significant impact on the ecological function of riparian landscapes by negatively affecting floodplain evolution. Infrastructures associated with railways contributes, together with pollutants to aquatic ecosystems. Herbicides and pesticides are other source of water pollution. An analogous process exist for urban mass transit systems and other rail transportation decision.<sup>5</sup>

There is evidence that disturbance from noise, lights, and vibrations associated with the construction and operation of the railway affect some species, and this can occur at various life cycles. As compared for roads, the severity of railway disturbance depends on the species.

Railways play a major role in the Indian transportation system. Railways are presently being promoted by several governments thanks to their economic advantages relative to other means of transportation. Rail noise, vibrations, chemical pollution and human presence can impact animal populations living close to railways contributing to the barrier effects.<sup>6</sup> There is evidence that disturbance from noise, lights and vibration associated with the construction and operation of the railway affects some species and this can occur at various life cycles. In contrast other studies suggest that wild life ignores or adapts to railway disturbance.

As observed for roads, the severity of railway disturbance depends on the species, bio-ecological features and on the degree of the disturbance.<sup>7</sup> Little is known about their role in species viability.<sup>8</sup> Noise can affect acoustic communication among bird species that use calls and songs to attract and bond with mates, defend territories from rivals, maintain contact with social groups, beg for food and warn of danger from approaching predators.<sup>9</sup> Noise disturbance was shown to alter the behavior of many bird species, especially for breeding birds, when territories are being defended and during incubation.<sup>10</sup> This disturbance may cause birds to accelerate hatching, abandon their occupied territories, nests and broods, and lead to hearing loss. Wildlife mortality on roads has received considerable attention in the past years, allowing the collection of abundant data for a wide range of taxonomic groups.

Railway line passing through a forest area can interrupt migration patterns, destroy habitat and even kill animals attempting to cross the track. A large number of wild species are being killed annually due to accidents on railway track. Unfortunately data are available only for the death of large number of mammals, such as moose and bears and elephant. Many species are found as victims of collision with trains, although certain taxonomic groups, such as amphibians and reptiles and or small bodied species are reported.

One of the most obvious impact of railways on wildlife is direct mortality from collisions with train. In addition to collisions, mortality can also occur due to electrocution, wire strikes and rail entrapment. Some species of small body size can become trapped between the rails and die from dehydration or hunger. The body size of the mammal species that are killed varies greatly, ranging from small insectivores and small carnivores, to ungulates. Bears are often the most frequently reported carnivore killed by trains. Bears have been attracted to railways by grain leaked from trains along the tracks or that accumulated at sites of repeated derailments. Such concentration of food led grizzly bears being struck and killed by trains at these sites.

In India the railways quite extensive and train collisions with elephants have been identified as a conservation concern, 18 elephants were killed in train accidents in a section of 23km of rail in the Rajaji National Park, India. The Indian forest department records show that railway trains were responsible for killing at least 35 elephants in the Assam region between 1985 and 2007. Maximum elephant mortality occurred during the summer months of high temperature and water scarcity appeared to be the deciding factors forcing elephants to cross the rail tracks during the late dry season when water sources on the southern side of rail had dried up.

Train hits, of animals can also cause severe loss to railways. It may lead to derailment of the train, damage to the track coaches etc. railways have environmental impact ranging from several forms of pollution to wildlife mortality. So, a careful assessment of railways impact on nature and of mitigation measures is in order. The assertion of roads and railway tracks are obvious,

but they are often ignored when assessing the potential and actual biodiversity impacts of railways.

### Conclusion

Electrified railways are considered to be more environmentally friendly than other types of transport, given their ability to effectively not polluting at source.<sup>11</sup> Their main environmental impact is depend on the sustain ability credentials of the fuel used to generate the electricity required to run depends on the energy mix of a given region.<sup>12</sup>

Gandhiji's broader vision for a free India was a rural one.<sup>13</sup> He worked for the renewal of its villages, in defiance of the world wide trend towards colonialism and urbanization. Gandhiji also opposed the industrialization of agriculture, that is the replacement of the tool like plough by the tractor and the spread of chemical fertilizers, measures which undeniably increased productivity in the short term but which created unemployment and depleted the soil of its nutrients. The frantic development of atomic energy shows that they know their rate and are now trying, through the application or ever-increasing pollutions against nature. The actual importance of Gandhi as an environmentalist lies not in his vision and his right view of man-nature relationship.

### Notes and References

<sup>1</sup> Mahathma gandhi, *Hind Swaraj*, G.A.Natesan and co.,Madras,1947,p.99.

<sup>2</sup> . Haridas T Mazumdar, Mahatma Gandhi-Peaceful Revolutionary, Gharles Scribner, Scribner's, London, 1952,p.13

<sup>3</sup> . [www.mkgandhi.org/environment/jha.htm](http://www.mkgandhi.org/environment/jha.htm).

<sup>4</sup> . Journal of Asian and African studies, *colonialism and the environment in India: Railways and Deforestation in 19<sup>th</sup> Punjab*, Pallavi Das,p.38

<sup>5</sup> . P.N.Chopra, *Hisotry of Indian railway*, Tanway Books, Allahabad, 2014, p.9.

<sup>6</sup> . Luis Bords-de-Agua, Rafael Barrientos, Pedro Beja, Henrique M Pereira, *Railway Ecolog*,y Springer Open Ltd. 2017,p.29.

<sup>7</sup> . *Ibid*;p.30

<sup>8</sup> . *Ibid*;p.31

<sup>9</sup> . *Ibid*;p.86

<sup>10</sup> . *Ibid*;p.86

<sup>11</sup> . R.Palacian, J Correia, M Zdziech, T Cassese, T.Chitakova, *Rail systems; environmental performance; energy consumption; noise pollution; mobility* 2014

<sup>12</sup> . *Ibid*;

<sup>13</sup> . Ramachandra Guha, *Environmentalism A global History*, Oxford, New York, 2000,p.22

Sandeepchopra, *History of Indian Railway*, Tanmay Books, Allahabad,2014.

S.K.Agarwal, *Air Pollution*, A.P.H.Publishing Corporation, New delhi,2005.

N.S.Subrahmanyam and A.V.S.S. Sambamurty, *Ecology*,Narosa Publishing House, New Delhi,2000