

## Environmental Science in India during First half of 20<sup>th</sup> Century

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### Abstract

Environmental science deals with the study of environment including ecology (public health) and other problems for solution. The awareness and the need for environmental protection became widespread in India in the last few decades. During the Colonial era, a handful of environmentally aware persons began to predict the harmful effects of rapid industrialization and urbanization, and in the process even a few societies came up for protection. The paper focuses on forest management in the British periods as well as on ecological impacts of industrialization in India. Between 1900 and 1950 CE, a change in the population structure in this part of the world and increasing demand for dwellings fuelled a high demand for more fuel and domestic appliances causing the denudation of forests in India. Forest preservation therefore occupied a large part of the environmental protection movement during this period in India under the British rule.

**Key words:** Colonial era of India, Environmental protection under British rule in India, First half of twentieth century.

### 1. INTRODUCTION

After the industrial revolution set the ball rolling in the nineteenth century tremendous changes were witnessed in worldly amenities in the twentieth century. However, it was realised that there was a downside to the industrial progress and its fruits. These brought in significant environmental degradation which paid a heavy price for the reckless exploitation of the resources of mother nature.

The consciousness about environmental protection became widespread only in the last few decades when a handful of environmentally aware persons all over the world began to predict the harmful effects of rapid industrialization and urbanization and drew attention to the need of saving the environment.

The early conservation movement focused on mainly three issues: movement against

deforestation, academic publications, and betterment of agricultural techniques.

Between the two great wars advancements in scientific management of forests were made with many areas undergoing regeneration and sustained harvest plans. Sadly though the emphasis was still not on protection & regeneration but on gaining maximum revenue from the forests.

### 2. ENVIRONMENTAL AWARENESS AND PROTECTION DURING BRITISH RULE IN INDIA

A few examples will be of interest.

**2.1.** Under the British rule, deforestation was rampant in order to procure timber to build furniture, railway sleepers and ships for the British navy. However, the British soon realised that forests had to be spared the ordeal. Early days of

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British rule in India were days of plunder of natural resources. There was total indifference to the needs of forest conservancy. They caused a 'fierce onslaught' on India's forests driven by the increasing demands for military purposes, for British Navy, for local construction, supply of teak and sandalwood for export trade etc. The British Government started exercising control over forests in the year 1806 when a commission was appointed to enquire into the availability of teak in Malabar and Travancore by way for appointment of Conservator of forests. This move failed as the conservator plundered forest wealth instead of conserving it. The second half of the 19<sup>th</sup> century marked the beginning of an organized forest management in India with some administrative steps taken to conserve forest; the formulation of forest policy and legislations to implement the policy decisions. The systematic management of forest resources started with the appointment of first Inspector General of Forest in 1864. The task of forest department under the Inspector General was that of exploration of resources, demarcation of reserves, protection of forests etc. The objective of management of forests thus changed from obtaining timber to protection and improvement of forests. The Forest Act was enacted in 1865 as the first step of the British government to assert the state monopoly right over the forest. The Act was revised in 1878 and extended to most of the territories under British rule. It expanded the powers of the state by providing for reserved forest, which was close to people and by empowering the forest administration to impose penalties for any transgression of the provision of the Act. On 19<sup>th</sup> October 1884, the British Government declared its first Forest Policy with the objectives of promoting the general well-being of the people in the country; preserving climatic and physical conditions in the country; and fulfilling the need of the people. This policy also suggested classification of forest into various categories such as 1) Forests, preservation of which was essential

on climatic and physical grounds; 2) Forests which offered a supply of valuable timber for commercial purposes; 3) Minor forests which produced only the inferior sorts of timber; and 4) Pastures which were forests only in name. To implement the forest policy of 1884, the Forest Act of 1927 was enacted.

Between 1926 and 1947 afforestation was carried out on a large scale in Punjab & Uttar Pradesh. Forest preservation therefore occupied a large part of the environmental protection movement during this period in India and adjoining countries under the British rule. The Forest Research Institute (FRI) Dehradun, a premier institution under the aegis of the Indian Council of Forestry Research and Education (ICFRE), began its journey as Imperial Forest Research Institute in 1906. Styled in Greco-Roman Architecture by C G Blomfield, the main building is a National Heritage which was inaugurated in 1929.

**2.2** British Government also concentrated on certain other areas like water and air pollution; wildlife and land use by enacting numerous legislations. Some of the important legislations made by the British Government were IPC (1860), Indian Easement Act (1862) etc. which contained provisions for the regulation of water pollution and also prescribed punishments for the violation of these legislations. For controlling Air pollution the British Government enacted Bengal Smoke Nuisance Act (1905) and Bombay Smoke Nuisance Act (1912). For protection of Wildlife the British Govt. made provisions like The Elephant's Preservation Act (1879), The Wild Birds and Animals Protection (1912) aimed at the conservation of Bio-diversity. The British Government enacted various provisions for prevention of pollution and for conservation of natural resources, though it is often pointed out that the British enacted the legislations to earn revenue and not conserve environment. But still the legislations can be regarded as the first step towards conservation of natural resources. Though

made with ulterior motives these legislations have contributed significantly to the growth of environmental jurisprudence in India.

**2.3** Among the organizations that carried out and published research on contemporary ecological issues can be included the Botanical Survey of India and the Agri-horticultural Society of Kolkata. The average garden may seem an unlikely ally to biodiversity however the Agri Horticultural Society of India has been maintaining a huge agricultural garden and the garden is eco-friendly in its own right, which is of great significance to the biodiversity. The garden is a passionate promoter of plant and floral diversity cramming the garden with as many captivating and different plant species as possible, especially those are at the verge of being extinct and endangered. The combination of habitats, soils and native and exotic plants create a unique environment. Moderating various gardening techniques and using the right plants can further enhance the biodiversity in the garden, while maintaining the highest gardening standards.

**2.4** Some Indian scientists, savants, poets and statesmen got involved in environmental problems related with philosophy, society and literature.

Tagore wrote ‘Man has been digging holes into the very foundation not only of his livelihood but of his life. He is now feeding upon his own body.’ In a series of essays Tagore again and again harped on the necessity of nurturing Nature. He planned Shantiniketan like a hermitage. Here classes were taken under the shade of trees; throughout the year seasonal festivals like the first ploughing of the field (*halākarṣaṇa*) were observed ceremoniously. Tagore wrote a song that declared that trees can conquer the desert by their great life force. Birbhum – the district where the university that he founded is located – was an arid area and it was from the times of Maharshi Debendranath Tagore, the poet’s father, that systematic efforts of afforestation were undertaken, which gave Shantiniketan a green

look. Tree planting and nurturing of trees were part of the curriculum of school boys at Shantiniketan. He dedicated his book of poems *Banabānī* to this theme of integrating humanity with nature and effecting a transition from chaos to cosmos.

Swami Vivekananda talked about the changes in environment when he said

A few species of trees and plants, birds and beasts are being always created in nature through changes, brought about by time, environment and other causes. Thus before the creation of man, nature was changing the trees, plants and other animals by slow and gentle degrees, but when man came on the scene, he began to effect changes with rapid strides. (The Complete Works of Swami Vivekananda, volume 5: The East and the West: Progress of Civilisation)

**2.5** Environmental ideas continued to grow in popularity and recognition. The evidence is found under labels like public health, conservation, preservation of nature, smoke control, municipal housekeeping, occupational disease, air pollution and water pollution. Some of the individual science & technology agencies set up by the Government to carry out research in these fields are CSIR (1942), ICAR (1947), ICMR (1949), and the Indian National Science Academy (1935).

### 3. ENVIRONMENTAL PROTECTION ACTS DURING POST INDEPENDENCE ERA

The post-independence era witnessed a lot of changes in the policies and attitudes of the Governments with respect to environmental protection. The Constitution of India came into force on 26<sup>th</sup> January 1950, and it had a few provisions regarding environmental management.

**Article 39(b)** provides that ‘the State shall direct its policy towards securing that the ownership and control of the material resources of the community are so distributed as best to sub serve the common good’.

**Article 47** provides that ‘the State shall regard the rising of the level of nutrition and the

standard of living of its people and the improvement of public health as among its primary duties’.

**Article 48** direct that ‘the State shall endeavour to organize agriculture and animal husbandry on modern and scientific lines and take steps for preserving and improving the breeds and prohibiting the slaughter of cows and calves and other milch and draught cattle.

**Article 49** directs that ‘it shall be the obligation of the State to protect every monument or places or object of artistic or historic interest, declared to be of national importance, from spoliation, disfigurement, destruction, removal, and disposal or export as the case may be’.

#### 4. CONCLUSION

Mira Behn (Madeleine Slade), an English confidant of Mahatma Gandhi, wrote in 1949:

The tragedy today is that educated and moneyed classes are altogether out of touch with the vital fundamentals of existence – our Mother Earth and the animal and vegetable population which she sustains. This world of Nature’s planning is ruthlessly plundered, despoiled and disorganized by man whenever he gets the chance...We have got to study Nature’s balance and develop our lives within her laws if we are to survive as a physically healthy and morally decent species.

Modern advanced research in biotechnology, genetics and environmental studies perhaps be better understood in the perspective of the history of sciences in India.

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#### BIBLIOGRAPHY

- Batabyal, Rakesh. *Communalism in Bengal from Famine to Noakhali 1943-47*, Vol VI, Sage Series on Modern Indian History, Sage Publication, 2005.
- Chakraborty, K. *Ahistorical Background of Agricultural Development in Tripura under Global Context (1430-2012)*, Naba Chandana Prakasani, Tripura, 2013.
- Chakrabarti, R. (ed.) *Does Environmental History Matter? Shikar, Sustainability, Sustenance & the Science*, Readers Service, Kolkata, 2006.
- Chaudhuri, M. A Conceptual Bond between Information Knowledge Innovation & Tagore’s Concept of Environment, in *Rethinking of tagore’s view in Society, Development and Environment*, Sanghamitra Dasgupta; Shukla Chatterjee and Anjon Chatterjee (eds) Rachayita Kolkata, 2012, pp192-205.
- Gupta, D N. *Commonwealth & Nationalism in Colonial India 1939-45*, Vol XII, Sage Series in Modern Indian History, Sage Publications, 2008.
- Lourdusamy, J B. *Religion and Modern science in Colonial Bengal (1870-1940)*, Sujana Publications, Kolkata, 2007.
- Meena, M L (ed.), *Environmental Factsheets*, Department of Environment, Government of West Bengal, 2009.
- Mukherjee, M. *Colonializing Agriculture The Myth of Punjab Exceptionalism*, Vol IX, Sage Series in Modern Indian History, Sage Publications, 2005.
- Prasad, Govind. *Handbook of Environmental Science*, DPH Discovery Publishing House Pvt. Ltd, New Delhi, 2012.
- Pratap, K. *Global Environmental Issues & Concerns*, Aryan Publications, New Delhi, 2013.
- Proceedings, Memoirs & Journals of the Asiatic Society Kolkata 1900-1950
- Rajput, A. *Environmental Science*, Quality Publishing Company, Bhopal, 2006.
- Sengupta, T and Roy, S. (ed.) *Contexting Colonialism Partition & Swadeshi Revisited*, Macmillan India Ltd, 2007.
- The complete works of Swami Vivekananda Volume 5: The East and the West: Progress of Civilisation* (wiki source).