

ENVIRONMENTAL ABASEMENTS TRIGGERED WITH THE ESTABLISHMENT OF TEA PLANTATIONS AND ITS PROCESSING UNITS

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Abstract

Environmental issue is a common phenomenon in the present day which is mainly triggered by the manmade factors especially using of fossil fuels on a large scale, deforestation, pollution, etc. But, there are certain factors responsible for the burning fossil fuels and deforestation which are rarely noted. One such factor contributing to it is the growth of the plantation sector which requires clearance of huge forest land and usage of firewood on large scale for its processing especially in the case of tea. The habit of consuming tea as a refreshing drink becomes common among the people in India after 18th century. Tea is consumed in different forms, but production and processing of tea pass through a list of factors that causes environmental issues. The paper tries to explain the various environmental issues that have emerged due to the establishment of tea plantations. It starts from clearing land for planting the saplings till the processing of tea in the factories. Establishment of plantation requires clearance of large forest land. Crop protection of the plantation requires usage of huge quantity of fertilizers, pesticides, weedicides, growth nutrients and fungicides. Processing requires huge quantity of firewood supplied by felling down of trees in forest land. All these processes involved in tea production contribute to a lot of degradation of the natural environment.

Keywords: Environment abasement, plantation industry, tea estates, deforestation, natural disaster, etc.

1. Introduction

In Nilgiri district of Tamilnadu tea was first planted on an experimental basis by the British in the year 1834 at Ketti, near Ooty. By the establishment of large tea estate clearing valuable forest lands, commercial production of tea started in 1853. By knowing the profitability of establishing tea plantation, it spread to other parts of Tamil Nadu and India. Plantations are labour intensive industry as planting, maintenance, harvesting and processing of the produce require a lot on manual labour generating lot employment opportunities. Thus, it is a blessing to nations with a huge population. It adds to a lot of income generation, support industrial growth and avail options for export as well as foreign exchange earnings. But, all this prosperity comes at a cost as each sip of a cup of tea is produced after large degradation of the environment.

2. Background of the study

Environmental issues are the common growing threat in the 21st century where the various disasters are triggered by man-made activities. Most of the activities like establishment of factories, burning of fossil fuels, deforestation, population growth, use of chemicals with improper disposal, etc. have generated a lot

of issues. These have created a lot of threat to human survival like natural calamities, global warming and pollution paving the way to a long list of diseases, cancer and death. Besides, there are various man-made activities that are contributing to these disasters but most of these activities are common but are not documented or neglected or in some cases camouflaged in the fact that it generates a lot of economies. But in reality, it is flourishing out after generating a lot of environmental degradation.

3. Environmental issues identified

The various environment related issues identified during the course of the study are listed below:

Deforestation: The tea plantations are planted on mountainous land at a higher altitude above 5000 feet. These lands are created by cutting down of large trees in the area completely to generate vegetation less area, thus generated out of deforestation. Planting of tea tree does not match the deforestation done in the area as tea tree are not allowed to grow more than two feet even though it has the genetics to grow up to 30 meters.

Soil erosion: The tea tree does not control soil erosion nor adds humus to the soil. The tea roots do not go deep in the soil or spread out in the area as ancient native forest trees. It leads to soil erosion and reduction in the natural fertility of the soil. To match the fertility the tea is fed with the huge quantity of chemical fertilizer.

Higher heat radiation: Tea tree is permitted to grow for only a maximum height of 2 feet. Hence, they are left with only vegetation of ground level that does not absorb much heat that control heat radiation and temperature. Trees in the dense forest grow tall with multiple branches having a huge green coverage for over a feet up to 40 to 60 meters absorbing at least 30 to 30 times more heat than the tea trees.

Mountains without vegetation: Huge deforestation of the area for establishing tea plantations led to soil erosion. Over a period of time, these mountains have exposed the rocks beneath them creating a large area of mountains without any vegetation. This does not support the growth of any vegetation moreover increases the heat radiation in the region.

Infrastructure development: The establishment of tea plantations has led to the huge establishment of infrastructure development like construction of roads, houses for plantation workers, the establishment of tea processing factories, electrification, communication facilities, vehicle parking and irrigation facilities. All these require the clearance of dense forest area.

Firewood for processing: Tea for its processing like weathering and drying require a higher temperature that is generated by the way of burning huge quantity of firewood.

Establishment of settlements: Tea is a labour intensive industry right from the plantation to maintenance, harvesting and processing in the factories. The huge labour requirement is supplied by

encouraging migrant labour from far off places, who settle here on a regular basis. This requires further clearance of forest land for the establishment of villages to accommodate them.

4. Objectives of the study

The study has the following objectives.

1. To identify the various environmental issues linked with the production of tea.
2. To study the extent to which these issues have affected the environment.
3. To find out the alternative eco-friendly measures to overcome environmental issues.

5. Methodology

The respondents of the study include owners of the tea plantations who had their own factories for processing tea. The data were collected using an interview schedule prepared especially for the purpose developed on the basis of the pilot study and reviews of the past studies. For the purpose of the study, ten respondents were selected from the Nilgiri district of Tamilnadu who involved in plantation business for more than half century.

6. Climatic and natural factors comparing to the past five decade

The opinion of the respondents relates to the extent to which they face changes in climatic and natural factors was studied using five-point scale. The data were analyzed using the weighted rank method, which is presented in the following table.

TABLE 1

Opinion of the Respondents toward Extent to which they Face Changes in Climatic and Natural Factors

S. No	Factor	Weighted rank
1	Rainfall	3
2	Temperature	2
3	Soil erosion	8
4	Wind flow	9
5	Change in weather	6
6	Mist	10
7	Water shortage	5
8	Environmental degradation	4
9	Loss of vegetation	1
10	Decline of soil fertility	7

Source: Primary Data

7. Findings

1. The study revealed that all the plantations were established on forest land after clearing huge trees in the area. The trees were used for the construction of estate bungalow and other houses. In other cases, it was sold to timber dealers and even supplied as firewood for factories. The land was cleared by felling trees in the forest for the construction of factories and infrastructure development in the area like road, housing, godown, etc.
2. All the plantations maintain the same height for the tea trees i.e. two feet, for easy harvest. This reduces the quantum of green coverage that controls heat radiation. In most of the plantations, silver oak is planted as to provide shades to the tea plants which do not adds to a lot of vegetation.
3. Due to the emergence of the tea plantations, there is lot of establishment of infrastructure facilities like the construction of houses for labour, road, electrification, development of markets, etc. all were developed by clearing the precious forest land.
4. The weathering and drying process in the production of tea require continuous heating, which is done by burning firewood in large quantities supplied from the nearby regions by felling forest trees and other trees grown especially for this purpose. The requirement of firewood is so high that to overcome the shortage it is imported from other districts and states. Nearly 224 grams of firewood are required to produce per kilogram of tea.

8. Suggestions

The growth of tea industry has led to a huge degradation in the natural environment. But, this can be controlled to a greater extent by taking effective measures. The various measures to improve the situation are as follows.

1. Supply of adequate power to the processing factories so as to use power heaters in the place of firewood heaters.
2. It is possible to use solar-powered heater in certain places in the place of traditional furnaces.
3. The illegal felling of trees in the region should be controlled. Encroachment of the forest land by the local people should be controlled by the respective authorities.
4. Merging of the factories to establish a large one rather than having a number of small factories that are not energy efficient. This can be done so as to use the best use of the resources.
5. Increasing the productivity of the existing plantations and the processing units so that the total demand of the tea will be fulfilled with the existing available plantations, rather than bringing the new area under tea plantations.

6. Development of real estates should be checked and controlled that convert tea plantations into real estates and into resorts. This reduces the available tea plantation area.

9. Conclusion

It is noted that the TEA may stand for Total Environmental Abasement but on the other hand, it brings a lot of economies or in other words it is beneficial to the people and the government in many ways. The degraded environment cannot be restored fully by reversing the whole process. But, some smarter and effective ways can be introduced that doesn't affect the economy that it has created at the same time provide considerable relief from further environmental degradation.

10. Reference

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