

## **Deforestation: Issues and Impacts on Agriculture- an Ethnographic Study in the village Chirudih, Purulia, West Bengal**

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### ***Preamble***

With its wide range of climatic conditions from torrid to arctic and it's widely differing topography, India has rich varied vegetation. The Indian word 'jungle' means a large conglomeration of wild trees and shrubs and sometimes equated with forest, which denotes technically any vegetation under a systematic management. The forest plays a very vital role on the life of some sections of Indian population. The communities living near to a forest maintain their livelihood from the forest. Edible roots and tubers, leaves, and fruits are collected from forests and consumed by many tribal and caste people, both as staple and substitute food. They also get plentiful amount of honey from the forest and it is not only consumed but also sold or exchanged with other people for getting other necessary commodities. The tribal people living nearer to the hilly forest do agriculture in the land of foothills. They also use the forestland for grazing their cattle. Wild games are also killed from the forest and used as an important food staff. Even today a significant number of tribal communities use forest as their homeland. House building materials like *Sal* trees are also collected from the forest.

Deforestation creates various problems like soil erosion, decrease of O<sub>2</sub> and increases of Co<sub>2</sub> in the air, and brings down heavy silt, which decreases rainfall, hampered wild life. Deforestation also hampered the agriculture on the land of foothills.

There are various causes behind the deforestation. The indigenous people have made the historical reference of gradual deforestation during their long transition from food gathering forest economy to agricultural economy. By the shifting cultivation a large amount of forest is destroyed. Other than the tribal people the smugglers belong to the caste groups stolen a large number of trees with the backdoor help of forest officials

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sometime causes for deforestation. In *Chirudih* village, due to the last cause a large amount of *Sal* forest is deforested.

**Objective of the present study:** the present observation is around the causes of deforestation, its evil effects on the agricultural land and agriculture, other evil impacts on daily life of the villagers in *Chirudih*, Purulia, West Bengal.

**Area of observation:** The village *Chirudih* is a multiethnic village located at the foothills of *Dolma* hill range, P.S- Bandwan, in Purulia district of West Bengal. There are 15 caste and tribal communities are living in the village. The *Santal* and the *Mahatos* are the dominant groups in the village, living all over the village except the southern part. The southern part of the village is surrounded by *Dolma* hills.

In this part only the hamlet where *Sabors* inhabit and are known as *saborpara*. The villagers are the supporters of different political parties like C.P.I.M, Congress, J.M.M, B.J.P and T.M.C. The author did census of the village during the year 2001. On the basis of that census the distribution of the village population is shown in the following chart.

Table 1: Caste / Community- wise distribution of the village population

S.L. No.	Name of the Caste/ Community	Total population	Percentage
01	<i>Santal</i>	394	34.77%
02	<i>Bhumij</i>	124	10.94%
03	<i>Sabor</i>	96	8.47%
04	<i>Mahato</i>	292	25.77%
05	<i>Tanti</i>	38	3.35%
06	<i>Gandhabonic</i>	52	4.58%
07	<i>Teli</i>	08	.70%
08	<i>Kumor</i>	05	.44%
09	<i>Brahmin</i>	05	.44%
10	<i>Kamar</i>	30	2.64%
11	<i>Kayastha</i>	03	.26%
12	<i>Dhopa</i>	13	1.14%
13	<i>Suri</i>	23	2.03%
14	<i>Munchi</i>	33	2.91%
15	<i>Hari</i>	17	1.50%
Total population		1133	100%

**Methodology of the present study:** In order to collect data as per requirement of the above-mentioned aim and objectives the following methods and techniques have been used in the present study.

The household census of each and every families living in the village did for getting primary information regarding caste/ community wise distribution of village population and their occupation.

Participant observation, Intensive Interview, Case Studies, Census Survey through Schedule and photographic methods were used for collecting data about the forest and how it was deforested. These methods were also used for collecting data regarding the evil effects arises due to deforestation on agricultural land, agriculture on the foothills of this village and other impacts of deforestation upon the neighbouring village people.

With the help of Telephonic Interview, the authors have been collected data on agriculture and reforestation of the village each and every year since 2001 to 2014 from the key informants.

Data from secondary sources like records of R.I office, Forest Office at *Bandwan*, *Chirudih* Panchayet Office, books and journals have also been used for the present study.

**The Forestland and the Forest:** The village had a large area of *Sal* forest in south and southeastern part during about 40 years back. According to *Chirudih Mouza* map (J.L.NO-64) plots no '1160', '1165', '1187', '1348', '1358', '1567', '1570', '1792', were under the *Sal* forest. All together '153' acres of land were under the deep *Sal* forest.

**Nature of Deforestation:** According to the information of the village people, the large *Sal* trees were cut down and stolen by a group of smugglers living in the locality and outside of the village with the help of a few poor villagers. The smugglers had a backdoor relationship to the local forest officials. The smugglers did an agreement in backdoor to the local forest officials that they give share of income to them. In return the local forest officials did not arrest them. The *Sabor* and a few *Santal* people also stolen remaining young *Sal* trees from the forest for fire wood and also sold in the markets for cash earning. The rich caste people of the village and adjoining areas purchase the firewood in low market price from smugglers and wood thief. The smugglers and the people who stolen the *Sal* trees from the forest are well known to the villagers but they cannot protest against them because the villagers also take interest from it by purchasing fire wood and fresh wood for household works in low market price from them in backdoor. Some time, due to community feelings or caste favouritism the smugglers and wood thief from the higher forest officials. As a result all the *Sal* forest converted into Underwood within a few years.

**Reforestation: The attempts- An Ethnic View:** During 1980 the forest department in assistance of village people tries to reforesting the Underwood areas. On that time, the forest department planted *Sal* plants all over the Underwood areas. The responsibility of nourishment to the young *Sal* plants was given to the village *Bana Raksha* Committee. Unfortunately the village *Bana Raksha* Committee does not performed the assigned duty properly. The plants were only alive for a few months during the rainy season. During the rainy season the villagers cultivate paddy in their agricultural land except the *Gora* (High Land) land. In the rainy season the village people are forced to graze their cattle in this particular Underwood area because the villagers take decision in *Gram Sava* (Meeting of the Village Council) that, they should not graze their cattle in the paddy field during the cultivation time. If any person graze his cattle in the paddy field during this time and destroyed the crops he will be punished by both physically and monetary. After harvesting the paddy, the field is open for grazing the cattle. To avoid punishment and fine, the villagers graze their cattle in the Underwood areas. The villagers have no other alternative field to graze their cattle except than the Underwood area. As a result the cattle stamped most of the newly planted *Sal* plants. A few plants were alive but not survived during summer season due to high temperature and scarcity of water. The members of *Bana Raksha* Committee did not say anything to the grazers because they have no other options. Instead of constant Endeavour from forest department, the area remains Underwood during that time.

Again in 1990 the forest department tried to reforest this area. During this time the *Sonajhuri* plants were planted in this particular Underwood area. By the inspiration of forest department *Bana Raksha* Committee was again formed for looking after the newly planted plants from time to time. The members of the committee were Sri Jharu Manjhi, Sri Bhim Gorai, Sri Nepal Mahato and Sri Ananta Sohish of this village. This time the forest department appointed a village people for looking after the new plantation for a year. The forest department paid 1000 rupees per month to this man as his wage but he does not perform his duty properly. After one year most of the plants were destroyed due to grazing cattle and scarcity of water in summer season. A few plants were alive but a few villagers collect them illegally for firewood and house hold works. At present, the total forest area is covered into Underwood. This Underwood becomes dried during summer season and is collected by the villagers for firewood in their day-to-day life.

**Harmful impacts arise due to deforestation of agricultural land and the villagers:** Due to deforestation, various harmful impacts were arising on the agricultural land, agriculture and environment in the *Chirudih* village. The rainfall is decreased than that of before time i.e. when the areas were covered by large *Sal* trees. The villagers can measure the rainfall

by their indigenous measuring system i.e. if the villagers are able to cultivate paddy on *Gora* (High land) land and *Baid* (High land but lower than *Gora* land) land during rainy season and yield the paddy up to their expectation (about '600-650' kg per *bigha* of land) they thought the rainfall is being sufficient for the year. After deforestation, the villagers were not able to cultivate paddy on *Gora* land since 1980. Even they had no opportunity to prepare muddy on *Gora* land for transplanting paddy seedlings during rainy season. Since 1980 even the cultivators do not able to yield paddy up to their expectation from *Baid* land. Paddy cultivation is also hampering on *Canali* land (It is a low land than *Baid* land) during rainy season of various years since 1980. Most of the years the cultivators were force to cultivate paddy quite late in *Shravana* (July- August) month as per Bengali Calendar on *Canali* and *sol* land ( It is the low land in the village) because without heavy shower the cultivable land is not soaked for muddy preparation and seedling transplantation. As a result the cultivators forced to transplant relatively old seedlings in their field. After the month of *Bhadra* (August- September) month of Bengali Calendar in this area generally heavy rainfall does not occurred. Due to the insufficiency of water old seedlings are not properly grownups hence yield a little amount of paddy from *Canali* land.

On the other hand *Shushunicanali* is a village located just about 5 K.M. away in the southeast direction where the villagers through their Bana Raksha Committee protect the big *Sal* trees. According to the opinion of the villagers, the big *Sal* trees attracted the water vapour of air to the *Shushunicanali* area from *Chirudih* area during the rainy season. As a result heavy rainfall occurred in *Shushunicanali* area during rainy season and by utilizing the rainwater the villagers is able to cultivate paddy on their *Gora*, *Baid*, *Canali*, and *Sol* land. They were also able to produce paddy up to their expectation from the field since the year 1980.

Another harmful impact arises on agricultural land in *Chirudih* village specially in south and south-eastern part of the village is deposition of sand and small stone layer on *Gora*, *Baid*, *Canali* land. In *Chirudih* village specially in south and south- eastern part of the village after a heavy shower (Normally occurred during the time of heavy depression in rainy season) the sand, small stone are washed away and carried along with water flows are deposited on *Gora*, *Baid*, *Canali* and *Sol* land. The sand and small stones are much deposited on *Gora* and *Baid* land. Relatively less amount of sand small stones layer is deposited on the *Canali* and *Sol* land. This deposition of sand and small stones has been going on since deforestation of the area occurred. A layer of sand mixing with small stones nearly about 4-5 inches height has deposited on the agricultural land specially on *Gora* and *Baid* land. As a result natural fertility and water capacity of the agricultural land has been going down year after year. Now- a- day, if a cultivator has able to cultivate paddy on *Gora*, *Baid* and *Canali* land he gets a little amount of production. The expenditure of

paddy cultivation in a *bigha* of *Gora*, and *Baid* land is more than the production. Recently, the cultivators do cultivate paddy only in *Canali* and *Sol* land during rainy season because in south and south- eastern part of the village. They have trying to cultivate maize on *Gora* and *Baid* land during rainy season because the expenditure of maize cultivation is less than paddy cultivation and does not required much water.

The villagers specially the tribal people do not get sufficient firewood and *Sal* leaves from the Underwood areas. Even the wild vegetables are not available in this Underwood area. The tribal people of this village collected wild vegetable from jungle once a time is purchase now from the markets.

### ***Conclusion***

Deforestation is not only decreasing O<sub>2</sub> level and increasing Co<sub>2</sub> level in the atmosphere but also decreasing rainfall, fertility and water capacity of agricultural land of a particular area. Deforestation is also hampering wildlife and village economy. If the villagers protect their local forest they will be benefited in different ways of daily life like, normal rainfall occurred in the locality which help them to cultivate paddy and other crops in their agricultural land, in hilly areas soil does not washed away along with rain water.

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