

Impact of Industrial extension on the phytodiversity of Sivasagar district of Northeast India with special reference to ONGCL

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SUMMARY

Sivasagar district falls under North East Biogeographic zone and Brahmaputra valley endowed with luxuriant vegetation and rich in biodiversity. The district is comprised of seven reserve forest and 23 grazing forest area. Abhoypur, Sola, Sapekhati, Rangoli, Panidehing, Dilli and Galekey are reserve forest. Abhoypur reserve forest is the transition area in between Assam-Nagaland and Assam-Arunachal Pradesh. Total area covered by the district is 1060 square Kilometer. ONGCL and Tea cultivation are the chief sources of employment opportunity and income generating industry. Drilling operation of ONGCL and extension activities of small tea growers are main causes of loss of phytodiversity. The present investigation prepares an inventory of phytodiversity and recorded 523 numbers of plant species out of which 23 species are pteridophytic plant, Gymnosperms 3 numbers, Angiosperms Dicotyledons 338 and Monocotyledons 159 species. Similarly and dissimilarity index of the phytodiversity index were determined on the basis of disturbed and undisturbed sites of the reserve forest. Moreover 33 endangered and endemic species were recorded from the different forest areas of the district.

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Sivasagar district is situated in the south bank of mighty Brahmaputra river, total area covered 2668 square kilometer and lies between 94°15' and 95°45' East longitude and 26°45' and 27°15' North latitude. Amongst the all biogeographic zones in India the northeast zone is perhaps the richest in communities, species and in endemics. The North Eastern region of India is supposed to be the original home of many flora and fauna, which is one of the hot-spot of biodiversity. There are also many endemic flora and fauna. These endemic species are facing extinction due to several anthropogenic causes as jhoming and agricultural extension, industrial extension, fragmentation of natural forest by means of artificial cultivation etc. The resulting effect of the depletion of natural vegetation due to the biodiversity. However, India's exploding population and its needs in terms in human settlement, agriculture and industrial development has put tremendous pressure on land use.

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It has been observed that rate of extinction of population and species are related to habitat loss. Due to the continuous oil and gas exploration by ONGCL (Oil and Natural Gas Limited), the original forests are degraded and a number of species are going to disappear and some of them faces danger due to different activities of ONGCL such as transportation, drilling operations, unprotected waste pits inside and out side forest areas and burning of natural gas. Another problem of this area is small tea grower's extension activity in forest areas.

Several botanists have contributed their findings about floristic composition of Sivasagar district and its neighboring area (Hooker, 1872; Islam, 1996; Jain, 1991; Kanjilal *et al.*, 1940 and Gogoi and Islam, 2006).

MATERIALS AND METHODS

Due to differences in interspecific association, the biotic composition of two plant communities are never exactly alike; They may resemble in physiognomy and may have the same dominants but even then like two members of the same family, they will differ and show differences in specific composition. In order to compare two communities that resemble each other in appearance, index of similarity dissimilarity was calculated as per following formulas for present study, to compare protected and disturbed reserve forest areas of Sivasagar district.