RESEARCH PAPER:

Mining endangers plant species at Dhobil mining area of Chiria mines (West Singhbhum)

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SUMMARY

The present investigation deals with the study and survey of vegetational pattern of Dhobil mines, an important spot for excavation and exploitation through open cast of iron-ore at Chiria. Dhobil mines has been divided into three sites as per their locations and mining activities. Site-I constitute the area of exploitation and excavation through open caste. Site-II includes activities - Transportation of iron - ore through kaccha road around Hamsadagara nalla and so large no. of dust particles containing heavy metals Fe, Cd, Pb, Mn. Zn, Ni deposited on the surface of plants and also pollutes the water of Hamsadagara nalla. Site-III shows very dense natural vegetation of trees. Shrubs and herbs on either side of Hamsadagara nalla and temporary transportation through kaccha road . A comparative study of this area shows that some plants which were recorded earlier are now found disappeared and in place which can be called as invaders such as *Lantana camera, Argemone mexicana*. Various kinds of grasses and aquatic plants like *Nymphea nucifera,* grass *Cynodon dactyon, Setaria verticillata, Sehina sulcatum* etc. The details of plant species of all the sites has been recorded and presented in the Table 1. Photographs and herbarium are made and preserved for future reference.

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The forest of Saranda division in the Saranda pir (Parangana) embraces the South–western extremity of the Kolhan Govt. Estate in the West Singhbhum district. It is situated at $85^0 16' 44''$ E longitude and $22^0 18' 34''$ N latitude. The country of Saranda forests is also known as "The Land of seven hundred hills". The landscape presents a beautiful view of hill with thickly wooded valleys and meandering live streams. Chiria mines is situated in the woodland of Saranda forest and is aggregation of different located in the heart of Saranda forest division in the West Singhbhum district (Jharkhand) and is a part of Chhota Nagpur Plateau and is marked by well – defined valleys and deep drainage channels. Ajitaburu and Budhaburu are the two prominent hills.

With rapid industrialization, increasing demand of iron- ore in the steel plants located at ISP, Burnpur , Bhilai etc; Chiria serves as a chief source of iron- mines to the above stated plants . To fulfill the requirement, the deposits is being mined by open caste method through semi – mechanized means. The various mining activities like primary drilling, secondary drilling, blasting, sizing produce a lot of solid dust containing heavy metal like Fe, Cd, Pb, Zn, Ni, Mn. The pollutants released during mining activities not only affect the flora and fauna but human being also.

The existing latest data on the quality of air and water have been collected by NEERI (2005) and SAIL, India.

The forest of Saranda have national and international importance. Hence, an study on vegetation with relation to environment becomes essential for welfare of ecosystem and to save our natural wealth and biodiversity

MATERIALS AND METHODS

The whole study area has been divided into three sites on the basis of their locations and type of waste produced.

Site I: Exploitation and excavation of iron-ore through open caste mining. Due to mining, the excavation soil and sub-soil is dumped or spread making it difficult for trees and other vegetation to grow.

Site II : The roadsides of mining areas are

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