

RESEARCH PAPER:

# Bio diversity loss due to mining activities at Chiria mines, Dist. W. Singhbhum, Jharkhand

JYOTSNA KUMARI AND RADHA SAHU

Asian Journal of Environmental Science, (June, 2010) Vol. 5 No. 1 : 1-4

## SUMMARY

Chiria mines is situated at the top of Budhaburu hill in the heart of Saranda forest. It is famous in the world for the largest iron ore depository in Asia continent. The present study deals with the mining activities at Chiria mines and the effect during the excavation process. Here iron – ore is excavated by two methods Reaching through shaft and Open cast method. In the first method quiet a lot of vegetation is lost in prospecting and in the second method the entire vegetation and soil in which mining is done is destroyed and lost, making it difficult for trees and vegetation to grow. Solid dust particles released during mining activities, exploitation of mineral, crushing, sizing, grading and screening of iron – ore heavy metal containing heavy metals Cd, Fe, Zn, Ni etc. as pollutant. These dust particles deposited on the surface of leaves and environmental condition create alarming situation by interrupting the photosynthesis which results death of some plants. These air pollutants are directly added to near by running river or stream choking the natural drainage system, degrading air, water and changing the soil and water quality. Further the washing of iron ore produces high concentration of solid particle of Zn, Cu, Mn, Pb, Ni, Fe. These heavy metal has hazardous effect causing severe ecological problem like change in topography, deterioration of quality of top soil, soil erosion, air, water pollution etc. The phytosociological survey and documentation of various plant species in the existing vegetation reveals that the original vegetation has been replaced by new exotic species such as *Lantana camera*, *Adhatoda sp.* etc. The vegetation pattern shows that many plant species have lost their existence and some are on the verge of disappearance.

See end of the article for authors' affiliations

Correspondence to :  
JYOTSNA KUMARI  
Department of Botany,  
Ranchi University,  
RANCHI  
(JHARKHAND)  
INDIA

**Key words :**  
Saranda, Chiria  
mines, SPM  
(Solid dust  
particle),  
Vegetation,  
Biodiversity

Land of 700 hills Saranda forest is located in the Chibasa sub- division in the district of West Singhbhum, Jharkhand. It is situated at 85°16'44" E longitude and 22°18'34" N latitude. It is famous in the world in Asia continent Sal forest. It constitute 37.62% of the land area occupied by Saranda forest. The area forming the Chiria mines is a part of the Chhota Nagpur Plateau and is situated at 85° 16' 44" E latitude and 22° 18' 34" N longitude in the woodland of Saranda forest and is aggregation of different mines like Ajitaburu, Budhaburu and Dhobil. Among the all Dhobil is the most active mines

With the increasing of population as well as industrialization, the demand of mineral has greatly increased. Various mining activities such as exploitation of mineral by reaching through shaft and by open cast method. In the first method, quiet a lot of vegetation is lost in prospecting and in the second method soil in which mining is done is destroyed and lost making it difficult for trees and vegetation to grow. Ultimately the biodiversity loss take place due to unfavourable

conditions in the disturbed site. As per Raunkier's normal biological spectrum for phanerogamic flora include 46% phanerophytes and 9% chamaephytes and the study area is a very dense forest due to the presence of flowing rivers, nala, natural springs running throughout the forest and making it most dense forest of India. Some of the dominant flora are *Madhuca indica*, *Delbergia sissoo*, *Ficus religiosa*, *Terminalia bellerica*, *Syzygium cumini*, *Madhuca indica*, *Azadirachta indica*, *Terminalia chebula*, *Terminalia tomentosa*, *Embllica officinale* etc., *Mangifera indica*, *Melabaricum*, *Albizzia procera*, *Acacia nilotica*. All these genera are medicinally and economically very important.

## MATERIALS AND METHODS

The present investigation was made from April 2007 to September 2009. Plants were recorded in different seasons regularly.

The study area has been divided on the basis of their locations and type of waste produced:-

Accepted :  
January, 2010