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**A STUDY ON THE BIOLOGICAL ENVIRONMENT AND
ASSIMILATION CAPACITY: UTKAL ALUMINA INTERNATIONAL
LIMITED, RAYAGADA, ORISSA**

PA AZEEZ, S BHUPATHY, A RAJASEKARAN, PR ARUN AND R MOHANRAJ

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*Salim Ali Centre for Ornithology and Natural History
Coimbatore*

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EXECUTIVE SUMMARY

The Utkal Alumina International Ltd (UAIL), proposes to set up an Alumina plant at Doragurha in the Kashipur block of the district Rayagada, Orissa. The plant envisages to utilize the bauxite deposit of Baphlimali plateau. Salim Ali Centre for Ornithology and Natural History was entrusted with the work of conducting the study on the biological environment and its assimilative capacity. The proposed project involves setting up an alumina plant at Doragurha and a conveyor belt of approximately 20km connecting it with the mine at the Baphlimali plateau, facilities for red mud and ash disposal, road network, 12 km railway siding, airstrip and a township.

The study area covered the overall impact zone of the project, within 10 km radial distance from the project site. Randomised cluster sampling method, were adopted to collect data on occurrence, distribution, abundance and status of floral and faunal components. The study involved examination of the proposed project and potential environmental threats arising from it, collection of the baseline data on flora and fauna in the project site and impact zone, assessment of the present state of the major ecosystems in the area through parameters such as species richness, species diversity, abundance etc., evaluation of sensitivity of the ecosystems in the project site and impact area, evaluation of the capacity of the ecosystems to withstand or assimilate the perturbations arising from the project and examination of the mitigatory measures proposed in the project with respect to the biological environment.

In total, 195 plant species (10 climbers, 63 trees, 35 shrubs, 82 herbs, 3 epiphytes and 1 parasite), 13 species of mammals, 66 species of birds, 13 species of reptiles and 9 species of amphibians and 14 species of butterflies were recorded in the project sites and its surroundings during the present study. No ecologically sensitive, vulnerable or highly endemic species were encountered during the study in the project environs. However, 11 species of animals recorded during this study are listed in schedule I & II of the Wildlife Protection Act 1972. These species although found in low numbers in the study area are not confined to it. They are widely present in other

parts of the district as well as the country. It may be also noted that the area with its present stage of ecological degradation may not offer optimum habitat for most of these species.

The project, although proposed to use latest internationally accepted technology, is likely to cause irreversible changes to the local ecological set up, by its very own nature. But, the impact of the project is largely confined to the mining site, alumina plant, and ash and red mud disposal sites. Apart from the other possible impacts, in the mining area on the Baphlimali plateau, the existing ecosystem will be disturbed. The loss of the grasslands that supports the livestock of the local people during the lean months, would partially affect the livelihood of the local people. The UAIL has identified programmes to limit the perturbations arising from the project. They propose to reclaim the mined area and to revegetate it.

The biological environment in the project area and its surroundings has already lost its natural biodiversity to a great extent. The hillocks and the valleys are highly denuded and it is apparent that the biological environment is already over-stressed and its capacity to sustain further anthropogenic pressure is low. It should also be noted that even without the proposed project, in the absence of serious conservation measures, the existing remnants of the natural vegetation too would completely disappear in the near future, if the current rates of exploitation continues. This would seriously imperil the livelihood of already impoverished local public currently dependent on the local biodiversity. A proper revegetation plan and conservation measures to save top soil is inevitable in the area. Probably in a long-term perspectives the UAIL may sponsor and promote local watershed development projects as an expression of social commitment.

With respect to the assimilating capacity, the obvious features of the ecosystems in and around the project area are; i) the area does not have any vegetation or micro-ecosystems of high ecological sensitivity, ii) although the impact area of the project, has a few patches of reserved forests and plantations, they are highly denuded, iii) the species of plants and animals currently present in the area are mostly generalists, iv) the decimated ecological characteristics of the area is suggested by the low species richness, species diversity and abundance, and v) as per the parameters considered in the current situation, if the mitigatory measures are strictly adhered to, the local environment may not get further damaged with further perturbations, with regards to

species richness and diversity. However, the proposed mitigatory measures should be adhered so strictly to limit any emissions or effluents.

No notified Sanctuary or National Park, occur in the project area. However, Reserve forests such as Dandabar and Baliakharha exists within the buffer area. Since, naturally vegetated area is proposed to be diverted for the project, compensatory afforestation may be adopted using local species. Compensatory tree planting programme should be undertaken for minimising the impacts on the ecosystem and for betterment of the local environment. In this regard UAIL has already developed a compensatory afforestation, green belt scheme and reclamation plan, that is expected to better the environment.

The project's impact on the environment would mainly be due to the construction of the various facilities of the project. The mines, the processing plants, airstrip, township etc will change the local ecological make up to an extend. The operation of the facilities may lower the impact because of the mitigatory measures. However, for the control measures proposed by UAIL, their effectivity need to be assured during their operation.