

A GIS Based Composite Land Degradation Assessment and Mapping of Tarkwa Mining Area

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Abstract : The clearing of vegetation in the Tarkwa Mining Area (TMA) for the purposes of mining, lumbering and development of settlement for the increasing population has caused a large scale denudation of the forest cover and erosion of the top soil thereby degrading the agriculture land. It is, therefore, essential to know the current status of land degradation in TMA so as to facilitate land conservation policy-making. The types of degradation, the extents of the degradations and their various degrees were combined to develop a composite land degradation index to assess the current status of land degradation in TMA using GIS based techniques. The assessment revealed that the most significant types of degradation in TMA were open pit and quarry mining; urbanisation and other construction projects; and surface scraping during land clearing. It was found that 21.62 % of the total area of TMA (353.07 km²) had high degradation index rating. It is recommended that decision makers use this assessment as a reference point for future initiatives that will be taken in order to develop land conservation policy.

Keywords : degradation, GIS, land, mining

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