

How Land Uses Affect Natural Ecosystems ?

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Introduction

- An ecosystem (or ecological system) **consists of all the organisms and the physical environment with which they interact.** These biotic and abiotic components are linked together through nutrient cycles and energy flows.
- Mining in Ghana is divided into two aspects; small-scale miners ‘*galamsey*’ mostly open pits by hand and large-scale surface- and underground mining enterprises operate with industrialized production chains and direct ties to international markets.
- *Galamsey* has detrimental effects on the water bodies like loss of ecosystems, environmental degradation ((e.g., pollution of surface waters, biodiversity loss) in as much as it provides economic boost.



Why the need for the research

- Mining is a foreign exchange earner and boost the economy of Ghana but the must be balance between a profitable land use and the managing of the land in order not to destroy the ecosystems.
- There is a need for an answer to these questions:
 - What are the environmental consequences of these small-scale miners ‘*galamsey*’ which seem to be illegal ?
 - What measures can be put into place to aid in environmental sustainability whiles encouraging mining at its best as it is a high foreign exchange earner in the country?



How it was done

- Four (4) articles were selected in line with the title and the information reviewed.
- The ideas of these articles were analysed and assembled for this report.
- Two (2) articles were reviewed from one of the Elsevier's journal known as science direct.
- The report was mainly about Wassa district in Ghana as it is one of the main geographical locations where mining is dominant in the country .

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REPORT

Impacts of Surface Gold Mining on Land Use Systems in Western Ghana

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Abstract Land use conflicts are becoming increasingly apparent from local to global scales. Surface gold mining is an extreme source of such a conflict, but mining impacts on local livelihoods often remain unclear. Our goal here was to assess land cover change due to gold surface mining in Western Ghana, one of the world's leading gold mining regions, and to study how these changes affected land use systems. We used Landsat satellite images from 1986–2002 to map land cover change and field interviews with farmers to understand the livelihood implications of mining-related land cover change. Our results showed that surface mining resulted in deforestation (58%), a substantial loss of farmland (45%) within mining concessions, and widespread spill-over effects as relocated farmers expand farmland into forests. This points to rapidly eroding livelihood foundations, suggesting that the environmental and social costs of Ghana's gold boom may be much higher than previously thought.

Keywords Ghana LUCC · Surface gold mining impacts · Farmland displacement · Resource curse · Participatory analysis

suggests that markets resolve such conflicts via differences in land rents that will lead to the most profitable land use allocation (Ricardo 1817; Walker 2004). The problem is that ecosystem services are often difficult to value in economic terms and remain externalities. Degradation of such services may lead to conflicts among land users (Wunder 2005). Surface mining is an extreme example of a land use practice that can lead to such conflicts. Mining is an important component of the economy of many nations, particularly in Guinea's and 5 majority of for related (Aryee profit from mi spread and dr them (Kumah ; Surface min soils, interrupt inevitable and activities also water pollution mani 2001; Ha heavy traffic

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OPEN PIT MINING AND LAND USE CHANGES: AN EXAMPLE FROM BOGOSU-PRESTEA AREA, SOUTH WEST GHANA

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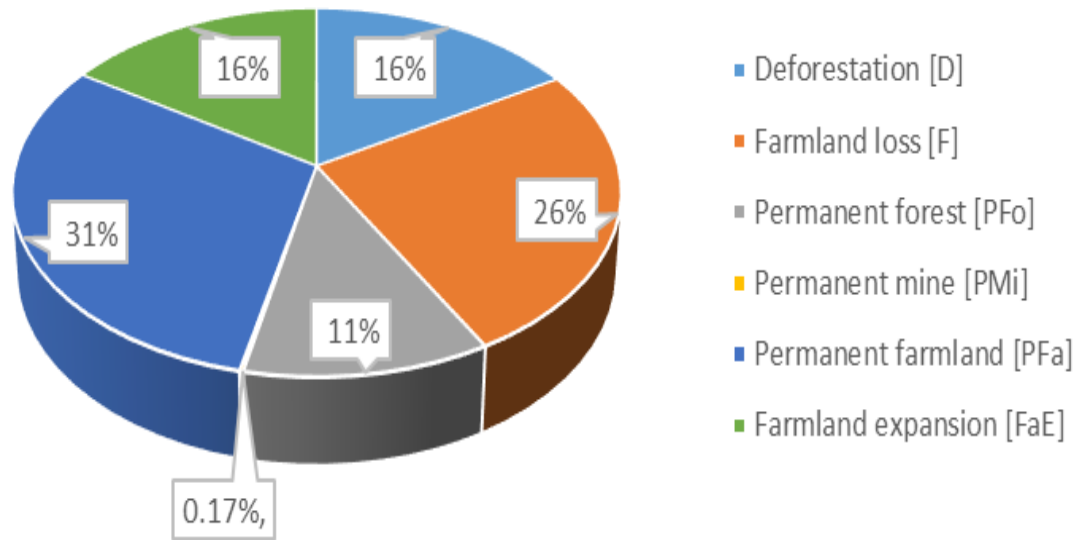
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ABSTRACT
The Bogoso-Prestea area has experienced mining for over a century and with advances in mineral processing and the promulgation of a new Mining and Mineral Law in 1986, surface mining became viable. High demand for gold will lead to increase in mining activities which will result in land use changes. Estimation of areas and analysis of land

Results

Effects on galamsey on land



Results



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DISCUSSIONS

- Surface gold mining in Ghana appears to displace farmers, thereby triggering increased deforestation, agricultural intensification, and land degradation.
- Erosion could be a consequence for eg: loss of cover crops could lead to erosion as the lands are left bare exposing to the effects of heavy rains and reducing soil fertility and agriculture productivity.
- It could also lead to water pollution due to the toxic waste involved in the mining eg mercury.
- It could lead to conflicts and also destruction of life and property.



Conclusion

- There is the need for the government to strengthen agencies like the Environmental Protection Agency (EPA) to execute its laid down rules.
- Policy makers should direct support to the Wassa West District's agricultural sector, and farmers affected by mining in particular.
- A clear agreement between companies and individuals involved in mining with the government of Ghana to ascertain the economic benefits to the country whiles controlling the land usage and its consequences.



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Thank you for your attention!

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