

Impact of Mining Induced Urbanisation on Land Cover in Gold Mining Areas in Uganda: a Case Study of Gold Mines Mawero Parish, Busia District

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SUMMARY

Gold is one of the most precious minerals in the world. Gold mining is one of the activities that contribute to Ugandan economy and very many companies are getting mining licenses each year. In Uganda, its mining has been mainly through Artisanal Small-scale mining distributed all over the country but recently, modern methods have been adopted through licensed companies. Such mining activities have led to uncontrolled settlements due to in-migration.

Studies on mining induced urban growth have mainly focused on larger cities or incorporated data rarely available in, or applicable to, rural sparsely populated areas in sub-Saharan Africa, such as aerial photography or night-time light data.

The aim of the present study is to recognize and quantify urbanization patterns in rural communities in Uganda affected by gold mining, which often experience substantial in-migration. A multi-annual training dataset will be created using old Google earth Pro imagery. And other satellite imagery.

ML classifiers will be sampled and used along with Sentinel images to produce annual land cover/land use classification maps. Post-classification steps will be incorporated with visualizing of quality assessments and analyses. The classification accuracy of the studied scenes will be assessed and compared. The final maps will also be used with either MLP or Convolution networks to predict the future patterns within the mining area. Different deterministic factors will be assessed and used in the prediction. The patterns will inform policy makers on the ways of defining the occupation policy on mining and the method can be extended to many areas where Gold mining occurs generally.

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