IAF EARTH OBSERVATION SYMPOSIUM (B1)
Citizen Science in Global Earth Observation Systems (6-GTS.1)

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FARMSENSE: PROVIDING AGRICULTURAL INSIGHTS USING REMOTELY SENSED DATA AND OPENSTREETMAP DATA.

Abstract

In Nigeria, 70% of the farmers are smallholder farmers who do not have access to funds to plant on large scale. The planting practices are based on traditional knowledge and experience of the farmers. We are in a world where things climate change couple with other anthropogenic factors has changed the seasons and the known patterns which leave the farmers at a risk of poor crop yield or wastage. Also, large scale farmers and major investors within the agricultural sector are constantly in dire need of information on the best lands for agriculture. Year over year, they use the same piece of land and adopt the trial and error approach to the selection of suitable farm lands coupled with the traditional knowledge. With FarmSense, we are able to map all farmlands on openstreetmap(OSM). We also use Sentinel-2 satellite product, DEM, Soil data for Kaduna State, Nigeria to carry out a crop suitability assessment for Rice in the area. From the mapped farmlands on OSM, we were able to overlay the currently been utilized farmlands mapped on OSM with suitable pockets of lands derived from the multi-criteria decision support system algorithm. With this approach, we are able to identify the lands that are properly being put to use, the unused suitable lands and also the lands that are currently being used for another crop which are suitable. The product of this information is useful for farmers as it helps them to plan ahead of a farming season. The data is also useful for the insurance companies to access the premium rates of farmlands depending on the location.