

EGU2020-13145

<https://doi.org/10.5194/egusphere-egu2020-13145>

EGU General Assembly 2020

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Farmers see where the satellite is blind – using citizen science to fill satellite-derived vegetation data gaps

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Satellite data for West Africa still struggle with local climate and farming practices. Despite the increasing data frequency, the rainy season in West Africa features such a dense cloud cover that many satellites cannot provide cloud free images. In addition, many farmers practice intercropping, where a single plot can be used to grow different crops such as maize and beans or even feature trees. Although the spatial resolution of satellites is ever increasing, this very small-scale intercropping still poses challenges for satellite data analysis. Yet, spatial data on vegetation status and distribution is required for running crop models.

Within the EU project TWIGA we therefore developed a smartphone app that allows farmers to collect vegetation data where it matters – on their plot!

Based on field trial that started in August 2019 we present vegetation metrics derived from smartphone photos as well as auxiliary data collected by test users in Ghana. The vegetation metrics are further combined with Sentinel 2A NDVI timeseries and fill a cloud cover caused data gap during the peak growing season.