



TWIGA: Transforming Water, Weather and Climate Information through in situ observations for Geo-services in Africa

Mark Noort

HCP international

Learn more here:



TWIGA



Impact focus & design



TWIGA (Transforming Water, weather and climate Information through in situ observations for Geo-services in Africa):
Improved number & increased coverage of in situ observations on water, weather & climate in Africa through service delivery

- Revenue generation through services to provide open and free in situ data (in agreement with government regulations)
- Services implemented in other countries

TWIGA impact will be monitored over (at least) the next five years



This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreements No. 776691



TWIGA services









- **How humid is my environment:** use of local weather stations to give advice on use of fertilisers and pest control measures
- **Map your crop:** combination of drones and photos to check crop condition
- **Your local and timely weather forecast:** local weather forecasts for small farmers
- **Soil index for crop insurance**
- **Digital platform for index insurance distribution**
- **Short-term prediction for solar energy**
- **Does it drain?** Use of sensors to detect waste (plastic) in rivers in urban environments to prevent floods
- **Water balance:** management of dams and reservoirs
- **International water control room:** IT-platform for international management of watersheds
- **Emergency management early warning systems for heavy rains:** early warning for floods in an urban setting
- **Heat stress indices for livestock**
- **Drought monitoring**
- **GNSS service for flood plains & atmospheric moisture:** cheaper & better prediction of convective tropical rainfall







TWIGA sensor development, improvement & deployment

Ghana
Kumasi DTS, UAV, TAHMO, VegMon, Plastic CS, GNSS
Tamale Disdro, Rainfall CS, DTS, TAHMO, VegMon
Navrongo VegMon, TAHMO



Uganda
Entebbe GNSS, TAHMO
Bugame GNSS, TAHMO
Nakasongola District, Kalungi and Lwabwata Sub-counties: CS, TAHMO

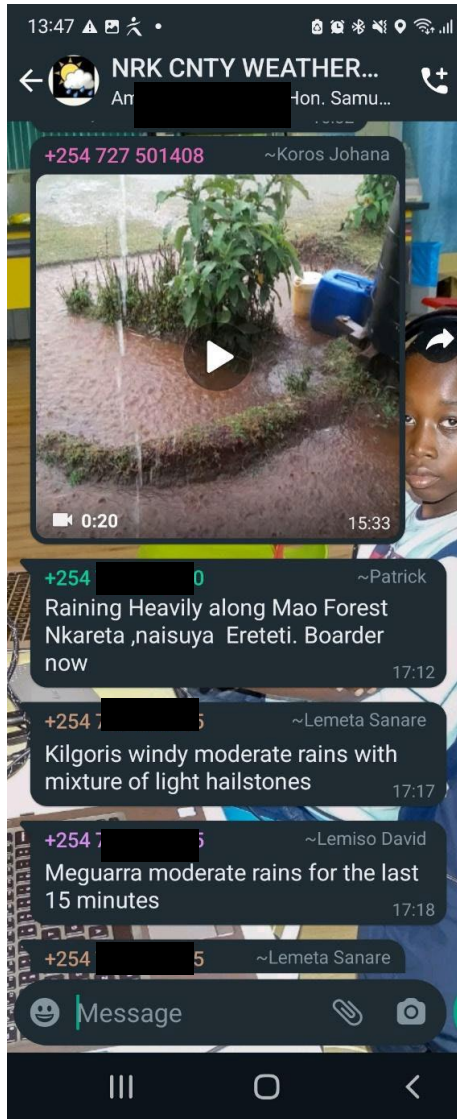


Kenya
Narok Disdro & Soil moisture, TAHMO, Evaporimeters, VegMon, Nairobi & Other Counties GNSS



TWIGA characteristics

- Offers practical downstream solutions;
- Bottom-up partnership;
- Time series of rainfall, temperature, wind speed, wind gust, wind direction, relative humidity, atmospheric pressure and solar radiation from 630 TAHMO stations findable in GEOSS
- Other data: from GNSS water vapour monitoring stations, time series of rainfall, temperature and relative humidity data from a network of 40 disdrometers, NDVI data from drone flights, vegetation monitoring data from citizen science;
- Validation of satellite data;
- Services derived from in situ meteo data, drones, mobile apps;
- Affordable and easily reparable & replaceable sensors help fill data gaps (13 new sensors developed or advanced);
- Building blocks & service-in-a-service elements;
- Many (small) business owners & independent platform





Thank you!

<https://website.twigah2020.eu/>

m.noort@hcpinternational.com

info@twigah2020.eu