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Progress, status, and outlook of the Trans-African Hydro-Meteorological Observatory (TAHMO)

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The Trans-African Hydro-Meteorological Observatory (TAHMO, www.tahmo.org) is an initiative to build and operate a dense network of weather stations in sub-Sahara Africa. Ideally, a density comparable to the density of weather stations in Europe would be attained, which is about one station per 1000 km2, or a total of 20,000. In the first years of TAHMO, most attention has been given to the co-development of a robust weather station. Through extensive testing, this station is now produced by METER. It is robust and does not have any moving parts. More recently, a scalable IT infrastructure has been put in place that supports data Quality Assessment and Quality Control. Presently, about 500 stations have been installed in 20 countries, making TAHMO main provider of scientific weather and climate data for the continent. A network of engineers maintains the stations, which are mainly (>90%) placed at schools. The schools are provided with educational materials to tie the weather station into the curriculum. In each country, TAHMO works closely with government agencies such as the national weather service, universities, or other relevant ministries (water, agriculture, disaster management), who often become the formal owners of the stations.

The main challenge of TAHMO is financial sustainability. So far, most stations have been funded through projects or gifts by corporate social responsibility programs. Data are provided for free to scientists and government but are sold to companies that use data for commercial purposes. For long-term operations, the network will have to earn its keep but the market for raw data is very limited. Also, despite ample discussions about weather and climate services in Africa, most of such services are to be considered "green fields" from a business perspective and need to be developed from the ground up. TAHMO is actively building a network of companies that provide parts of the value chain that turn data into services for which people are willing to pay. Crop insurance, solar energy, agricultural advise, and commodity information are all sectors within which TAHMO and its partners have built some experience. Clearly, TAHMO's ambition can only be reached through patient progress. Although 20,000 stations are not yet in sight, we do see opportunities to move quickly to 2000 stations, thereby greatly improving weather information in Africa.