



Education and TAHMO, the Trans-African Hydro-Meteorological Observatory

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The Trans-African Hydro-Meteorological Observatory, TAHMO, is building a network of 20,000 weather stations across sub-Saharan Africa. TAHMO stations are affordable and robust. For example, unlike standard weather stations, they do not have any moving parts as these are quickly affected by dust and insects. Maintenance is limited to some simple cleaning. The network makes use of the availability of cell-phone coverage that has reached most of Africa over the past decade. The stations cover all standard meteo measurements such as air temperature and relative humidity, wind speed and direction, incoming solar radiation, and barometric pressure. Presently, there are pilot stations in Senegal, Chad, Nigeria, Uganda, and South Africa and "pilots at scale" in Ghana and Kenya.

In addition to the interesting technical aspects, TAHMO is also unique in its overall implementation approach. We strive to become financially self-sustaining by marketing data and derived products for commercial use. We also have an important educational component, both at secondary and university level. We work with universities to develop new sensors that are affordable and robust. For example, a prototype lightning network was developed for Nairobi using consumer electronics at Jomo Kenyatta University of Agriculture and Technology. We also run design competitions, which raise a lot of enthusiasm among students.

For secondary schools, we have the school-2-school program, in which richer schools, usually in the USA or Europe, buy one station and pay two. The second station is then placed at a sister school in Africa. The two schools then exchange data and enter into a conversation about the meaning of weather and climate in their respective settings. A package of educational materials is provided to the schools at no charge. In this way, early awareness is raised about climate and the importance of observations.

This presentation gives an overview of the results so far, with special emphasis on our educational experience.