

EGU22-10990

<https://doi.org/10.5194/egusphere-egu22-10990>

EGU General Assembly 2022

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Youth Citizen Science and Agro-Climatology in Côte d'Ivoire

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Since the 1980s the number of stations reporting quality weather data across Africa has been in decline. Weather data is critical for meeting climate challenges that the world will face in the 21st century. Unfortunately, along with the paucity of climatological data, Africa faces some of the largest vulnerabilities to a changing climate, including changes to local precipitation and temperature regimes upon which farmers rely for rainfed agriculture, which makes up 98% of the agriculture in Côte d'Ivoire. In this project students and scientists in Côte d'Ivoire and the United States are leveraging the Trans African Hydrometeorology Network (TAHMO) University to University (U2U) program to build a network of youth scientists in the region of Université Jean Lorougnon Guédé de Daloa (UJLG). In order to carry out this work we have identified ten locations at primary and secondary schools where manual rainfall and temperature gauges are being installed. The partner locations are schools in Gonaté, Brizeboua, Kibouo, Tahiragué, Zahia, Bla and Zéréfla. At these sites students will learn about weather and climate measurement and read daily rainfall amounts and temperatures from manual recorders. University students at UJLG and San José State University will collect, compile, and check the weather data in order to post it to a shared website where it can be viewed publicly. In addition, we plan to install one of the automated TAHMO weather stations at UJLD which is a robust station that records air temperature, wind speed, solar radiation, relative humidity, barometric pressure, wind speed and direction, lightning strike, and lightning strike distance and communicates them directly to the TAHMO network where they are available for viewing on the web. Using the manually recorded data as well as the automated data from the TAHMO station we plan to further develop teaching materials for earth system and agro-meteorology courses at UJLG and SJSU. The objectives of this project are to (1) provide opportunities for youth to learn about climate and weather data using a hands-on approach in their local area (2) strengthen ties between US and Ivorian students and scientists and (3) to contribute to increasing the amount and quality of climate data across the African continent.