Schools and Satellites
A reliable rainfall product for West Africa

[Logos and images related to the Schools and Satellites initiative]
Traditional satellite rainfall products

![Diagram of satellite rainfall products](image-url)
Traditional satellite rainfall products – West Africa

<16 % correlation between TAMSAT & CHIRPS and GMet ground stations

No. ground stations in Ghana < 1/5 no. ground stations in Europe
Traditional satellite rainfall products – West Africa

Aerosols

Land surface temperature

Ground Truth Data

$f(x) = y$
RainRunner – The SaS rainfall retrieval algorithm
Low-cost technology and Citizen Science for denser ground observations

Low-cost rainfall sensors: DISDROs and LoRaWAN communications - IoT

Citizen Science: Ghanaian students to measure rainfall observations
Products: RainRunner rainfall retrieval algorithm and an educational module
Algorithm Development

PoC Algorithm

Ground Truth Data

September 2019

Nov + Dec 2019

Feb 2020

In the field

July–October 2020

Rainy season

Algorithm Development

Demo Day December 2020

Testing of material & methods

Educational module

Schools are engaged

Start of Citizen Science pilot

Share results
Testing of materials and methods
Location: Northern regions of Ghana
Different climatologies: South vs. North of Ghana
First visit: July - August 2019
Installation of first DISDRO network and engagement with 6 first citizen scientists
## Pilot Citizen Science involvement

### S4W Dashboard

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<tr>
<th>Project</th>
<th>Form Groups</th>
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### Load

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Second visit: February 2020
Collecting feedback from the first citizen scientists
Second visit: February 2020
Expanding our network to other regions and better understanding the situation
Educational method
Climate Change teaching materials

SaS research

1. General info on Climate Change
2. TAHMO S2S Water Cycle materials
3. Precipitation measurements + workshop building S4W rain gauge
4. Earth Observation and Satellites
5. Doing research
6. Make trends of precipitation and compare
7. Making conclusions on climate change influence on local precipitation patterns
Workshop: How to make your own raingauge
Schools are engaged
Engaged, and then?

1. Finish climate change education module
2. Finish manuals and syllabus
3. Workshops in late April
4. Start measuring in May
5. While measuring: challenges, cultural interchanges, etc.
6. End measuring in October
7. Share results in Nov/Dec
So let it rain knowledge!

Join the newsletter: Sandra@pulsaqua.com

W: https://tahmo.org/about-school-and-satellites/
F: SchoolsandSatellitesGhana
T: @SaS_Ghana