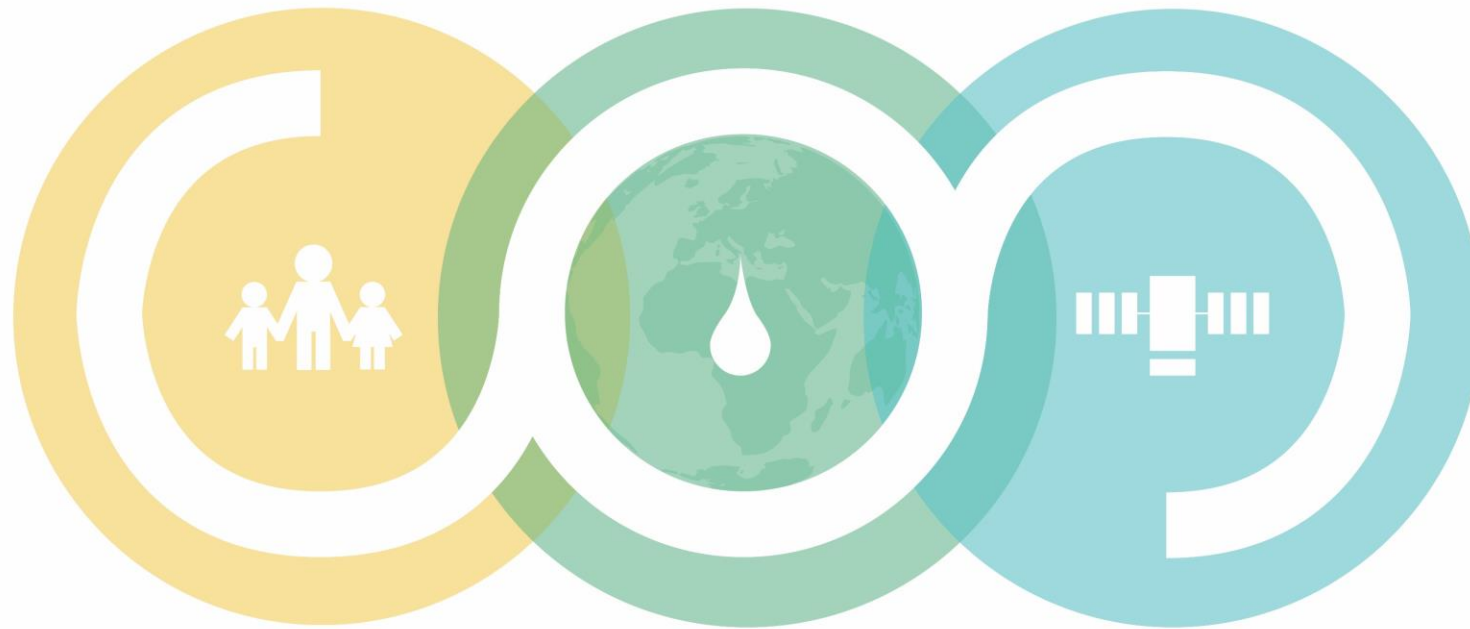


# EGU Session H3.2

Mónica E Camarena and Sandra de Vries

April 26 2020



## Schools and Satellites

# Schools and Satellites

A reliable rainfall product for West Africa

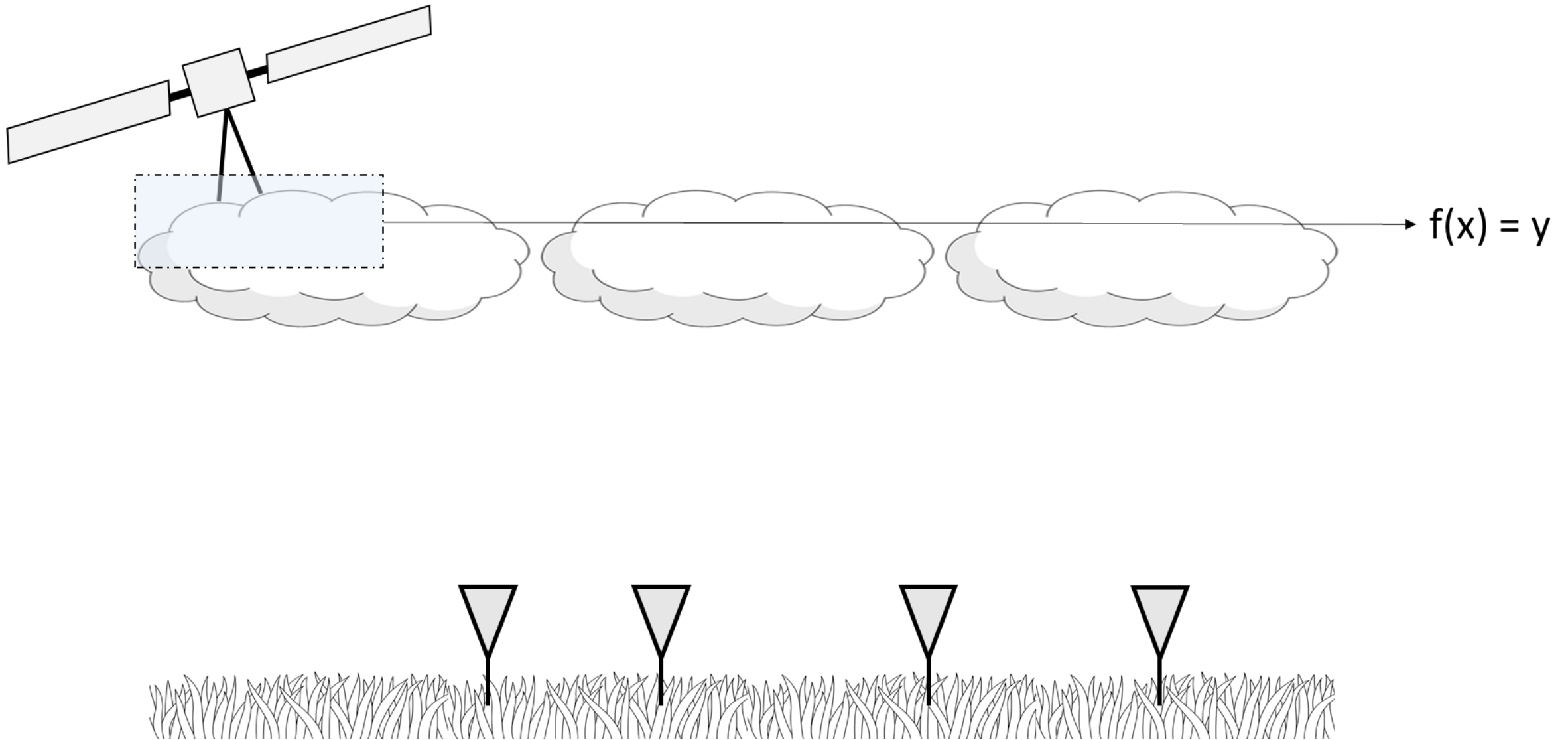




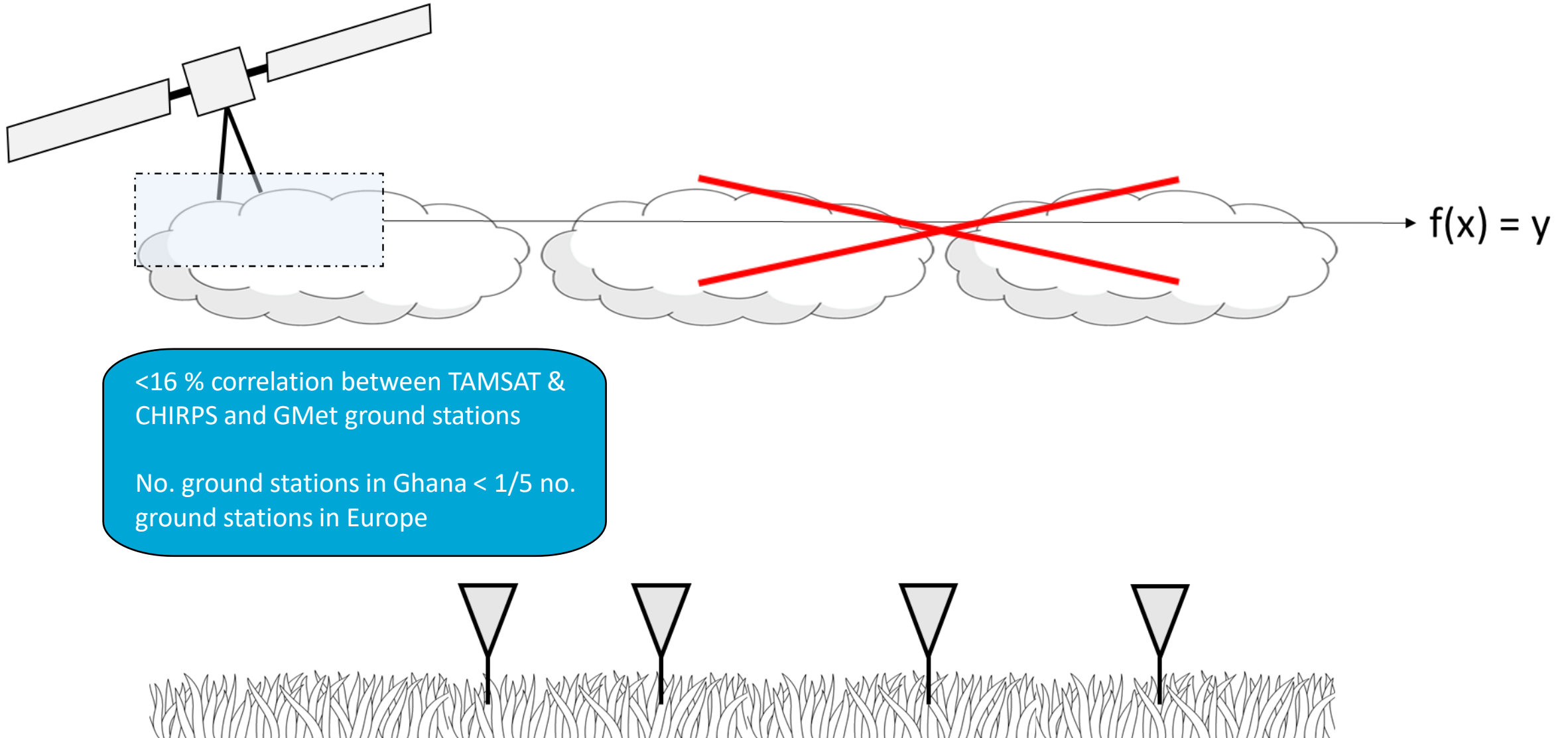




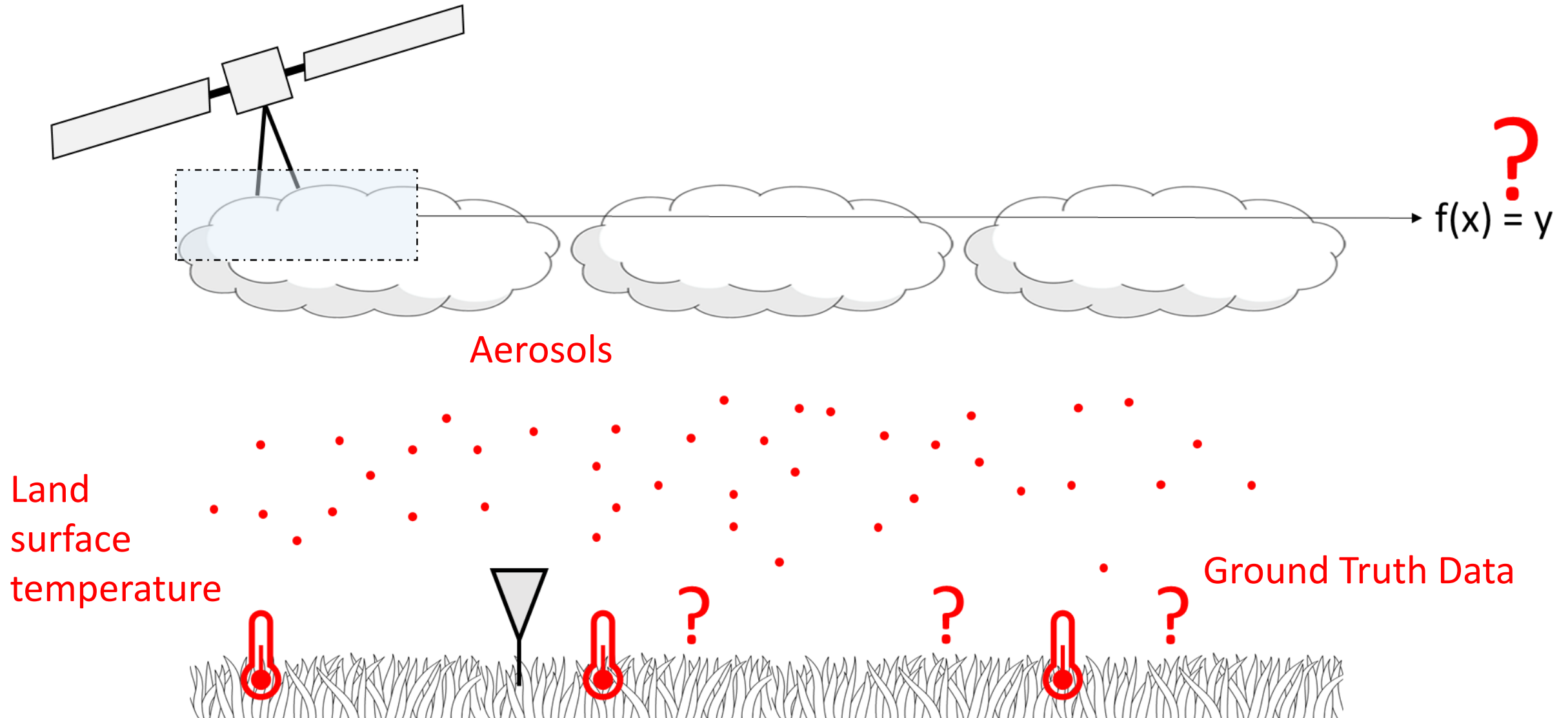
# Traditional satellite rainfall products



# Traditional satellite rainfall products – West Africa



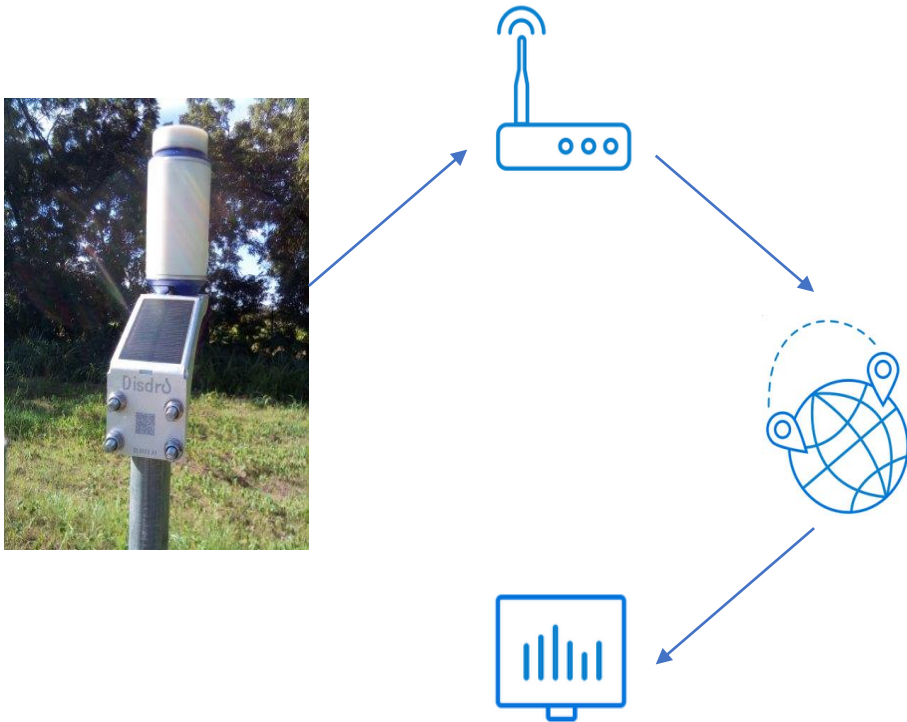
# Traditional satellite rainfall products – West Africa





# 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



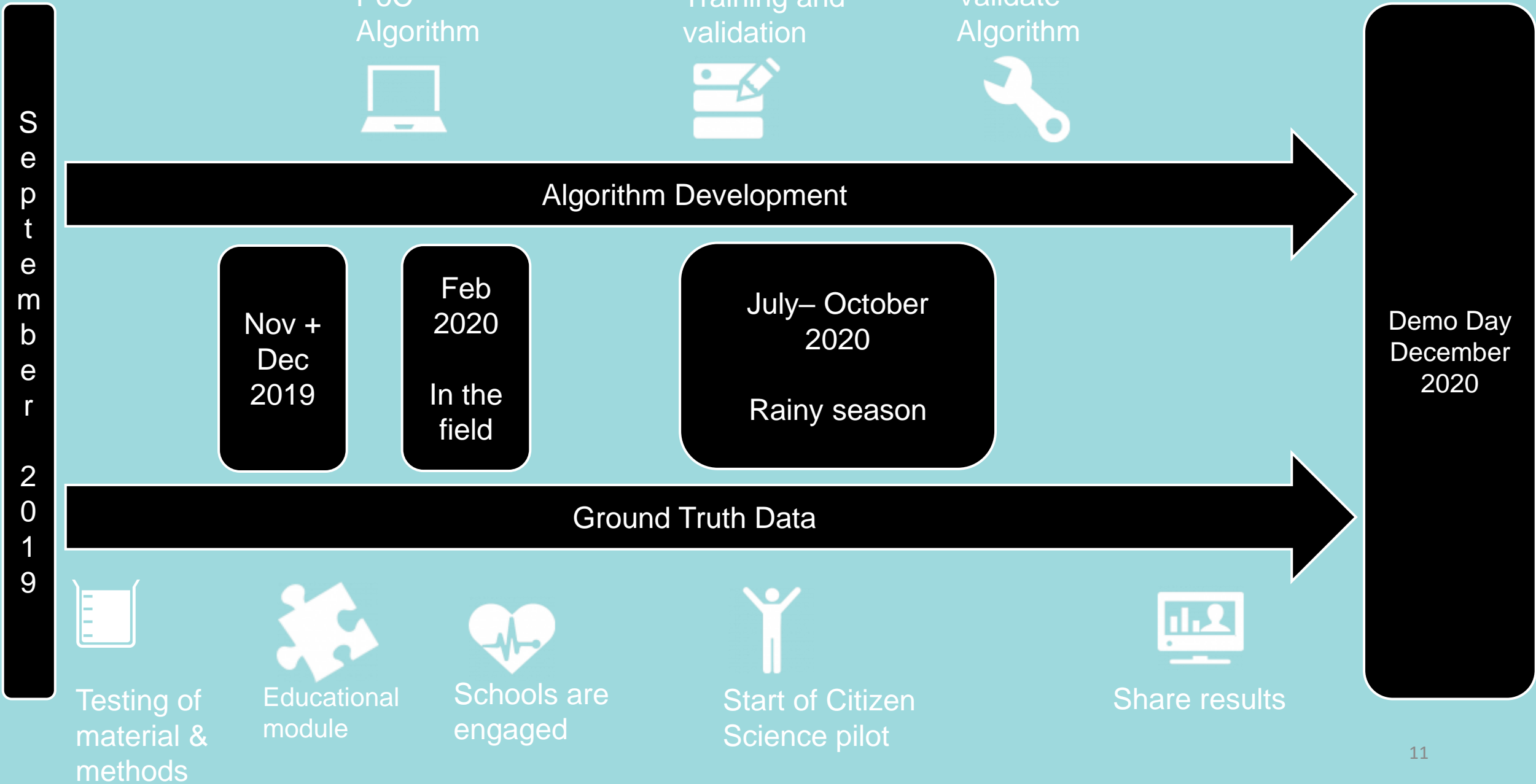
SmartPhones  
4 Water





# Products: RainRunner rainfall retrieval algorithm and an educational module









# Testing of materials and methods

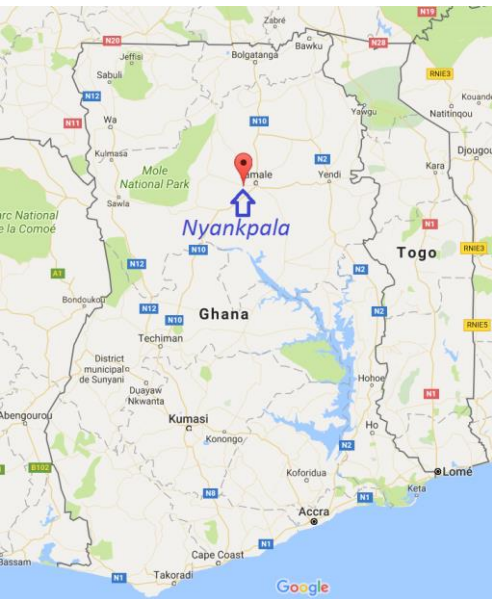
# Location: Northern regions of Ghana



# 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

Project

S4W-Africa

Form Groups

AF\_S4WMain

Load

50

Show

Total:61 Chunk:1 to 50

Backward

Forward

Comment Mon/Sites

	Status	Shared With	Commenter	Urgency	TimeStamp	Messages	Mon
1	Requested		priya@smartphones4wat		2019-11-27 08:55:03	Lower meniscus should be observed	726_Abd
2	Requested		priya@smartphones4wat		2019-11-27 08:53:35	CS recorded 23mm instead of 11mm	700_Abd
3	Requested		priya@smartphones4wat		2019-11-27 08:44:12	1mm scale error should be deducted	700_Abd
4	Requested		priya@smartphones4wat		2019-11-27 08:42:32	CS recorded 17mm instead of 27mm	700_Abd
5	Requested		priya@smartphones4wat		2019-11-27 08:29:54	Lower meniscus should be observed (9/13-9/22)	699_Che
6	Requested		priya@smartphones4wat	Low	2019-11-27 08:27:40	CS recorded 2mm instead of 4mm	699_Che
7	Requested		priya@smartphones4wat	Low	2019-11-27 08:25:23	Lower meniscus should be observed	699_Che
8	Requested		priya@smartphones4wat	Low	2019-11-27 08:20:56	lower meniscus should be observed	699_Che
9	Requested		priya@smartphones4wat	Low	2019-11-27 08:17:55	CS should reduce 2mm scale error from the actual reading.	698_Sug





Second visit: February 2020  
Collecting feedback from the first citizen scientists



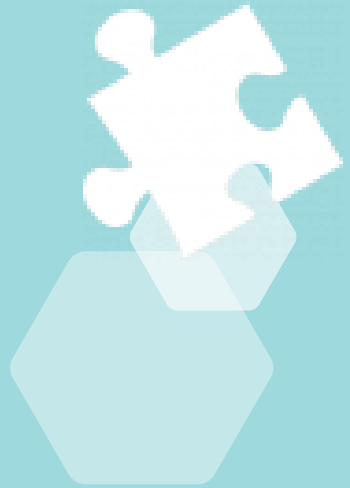




Second visit: February 2020  
Expanding our network to other regions and better understanding the situation







# Educational method

# Climate Change teaching materials

1. General info on Climate Change

2. TAHMO S2S Water Cycle materials

## SaS research

3. Precipitation measurements + workshop building S4W rain gauge

4. Earth Observation and Satellites

5. Doing research

## Analyse and discover

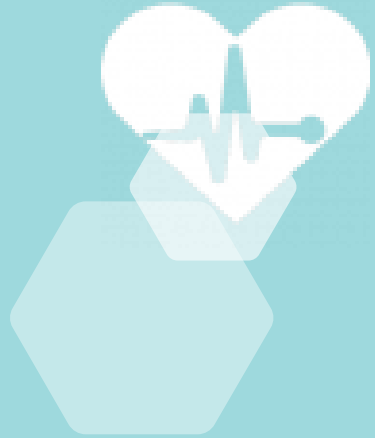
6. Make trends of precipitation and compare

7. Making conclusions on climate change influence on local precipitation patterns



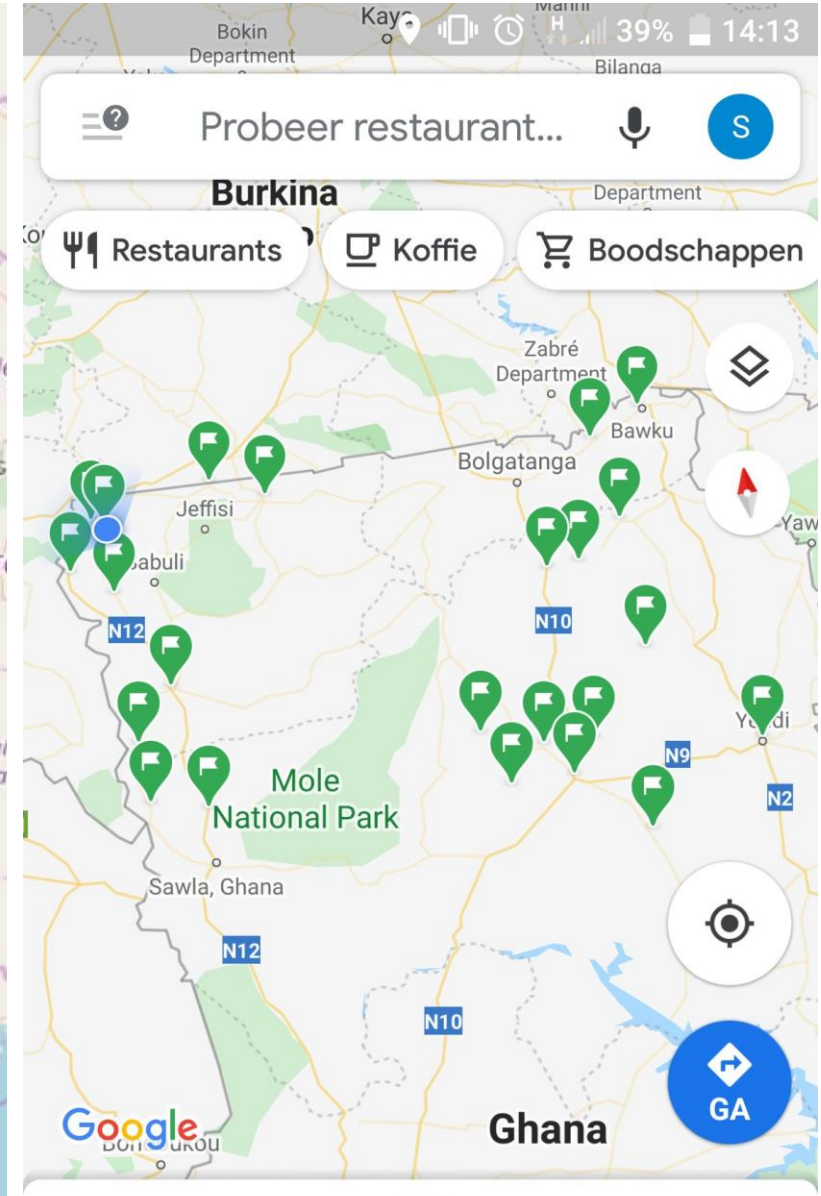
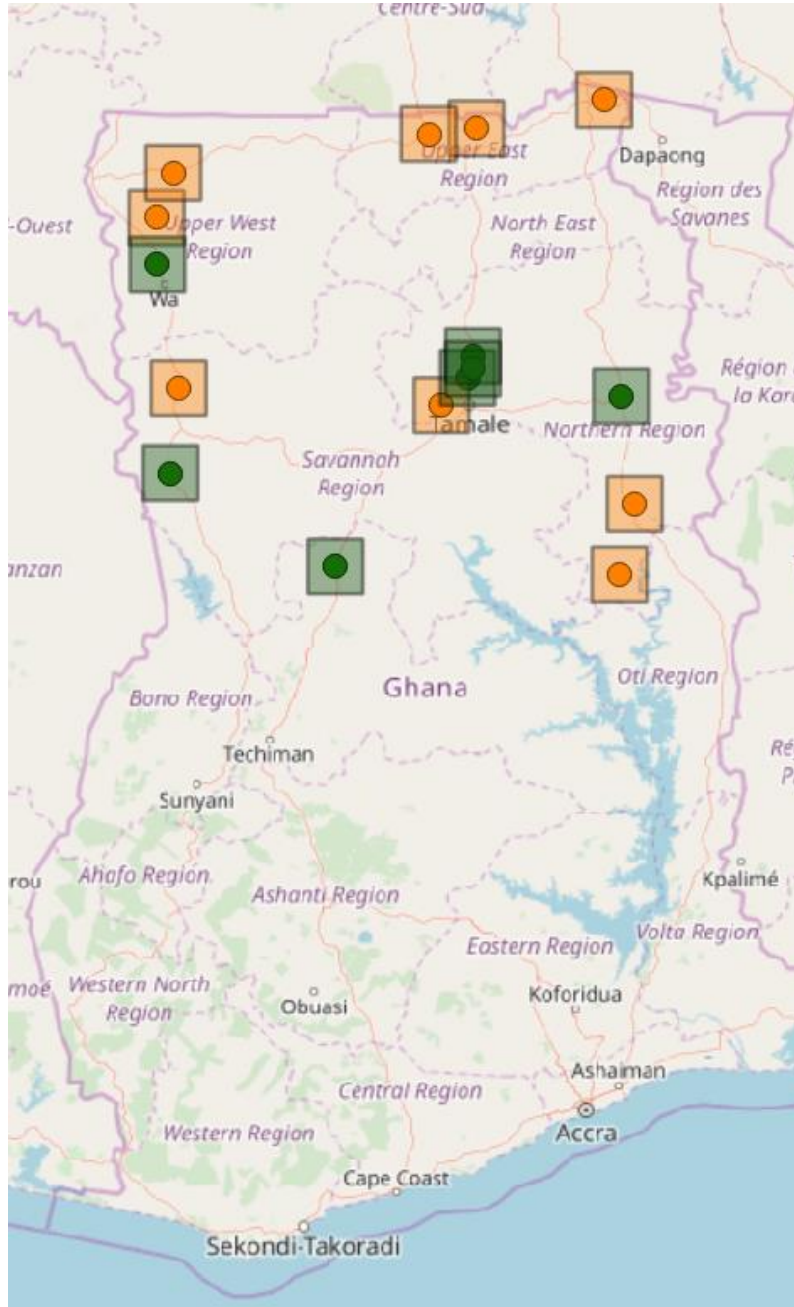
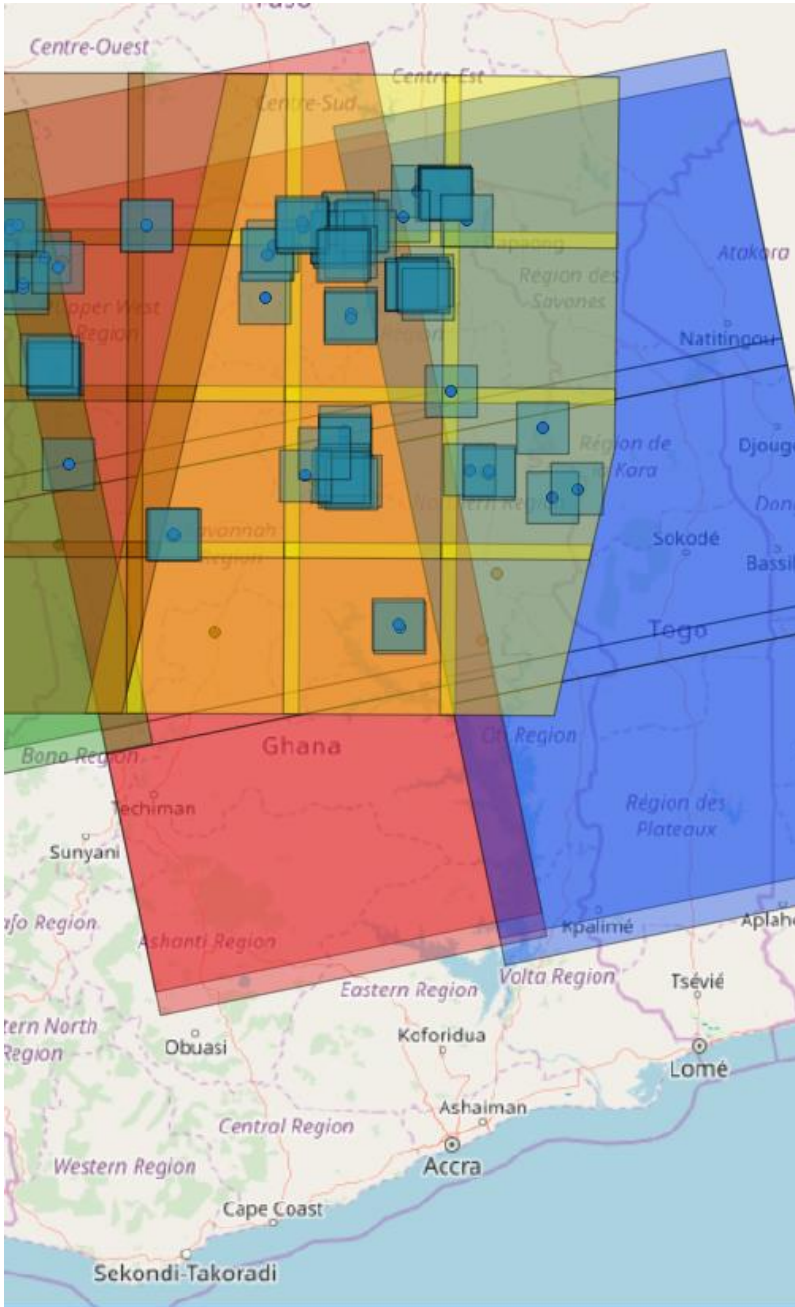
# Workshop: How to make your own raingauge





Schools are  
engaged





Buurt verkennen







# 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





**2** ZERO HUNGER



**6** CLEAN WATER AND SANITATION



**13** CLIMATE ACTION







# So let it rain knowledge!

Join the newsletter: [Sandra@puls aqua.com](mailto:Sandra@puls aqua.com)

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