



Oregon State
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Climate Resilient Development: The TAHMO Perspective



2022

Enhancing Sustainable Climate Services with Cost-Effective Technological Innovations

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Prof. John Selker & Dr. Hessel Winsemius
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METER

TAHMO Core Team & Goals

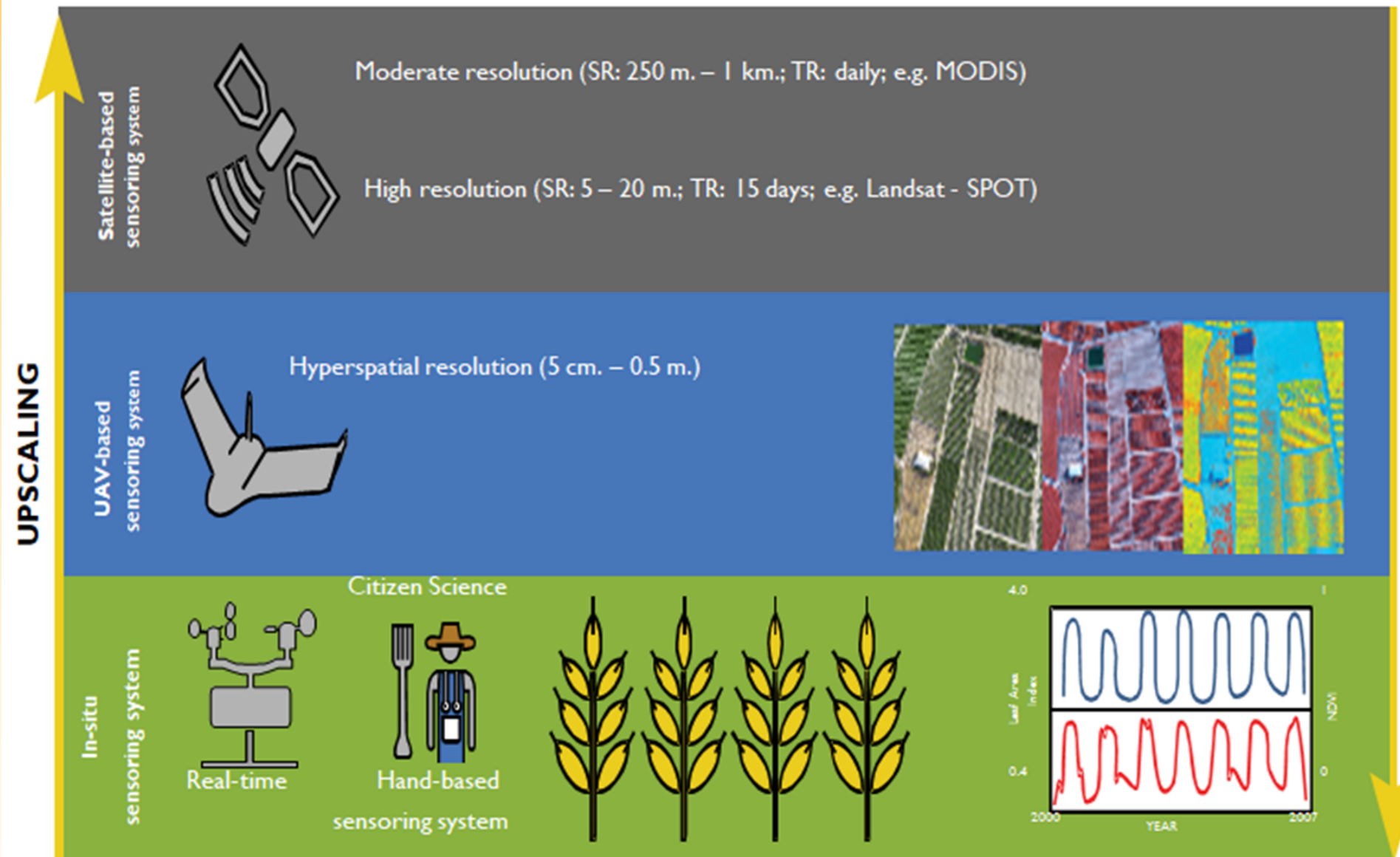


- 1 weather station every 30km!
- Provide educational material (School2School)
- Hydro-Climatic data for Governments and Academia

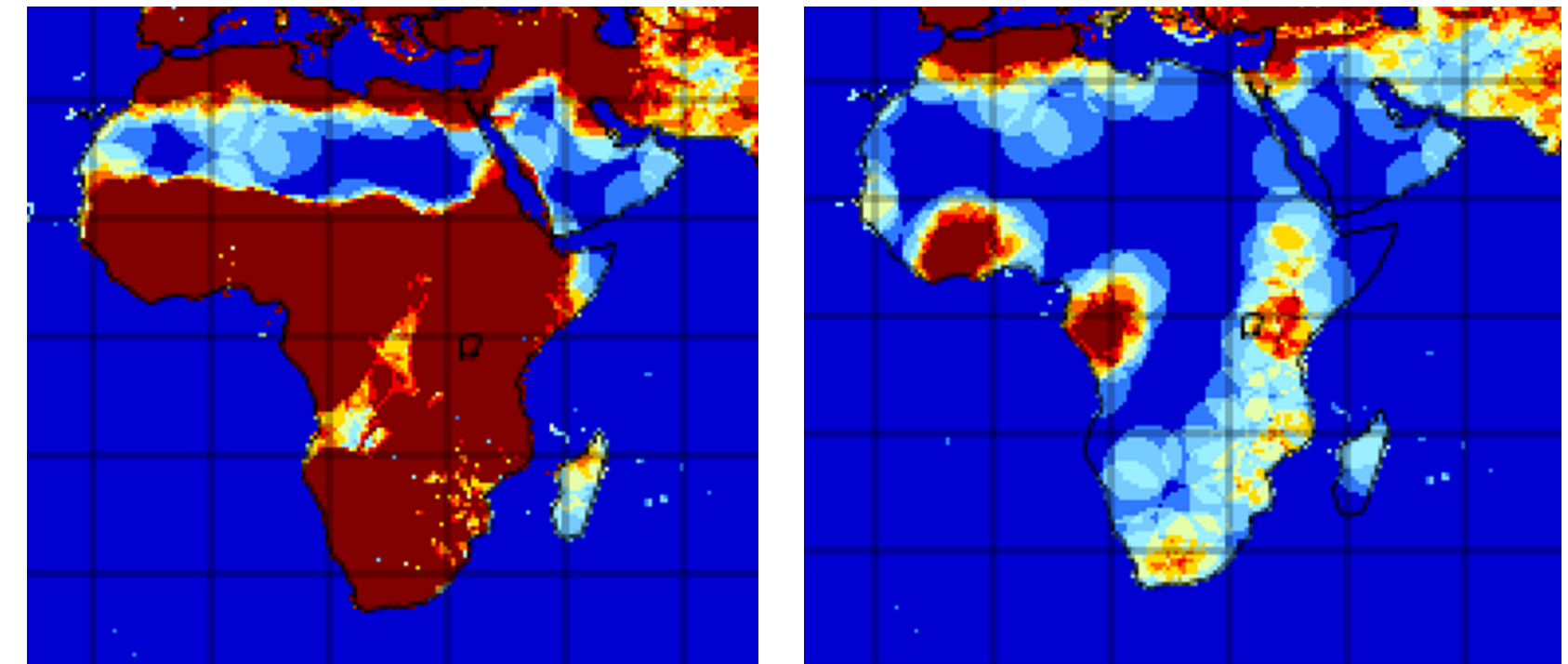
Operations in 23 Countries - 650+ stations



Climate Services - Our Motivation

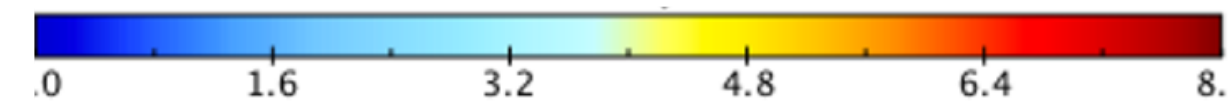


DOWNSCALING



1955

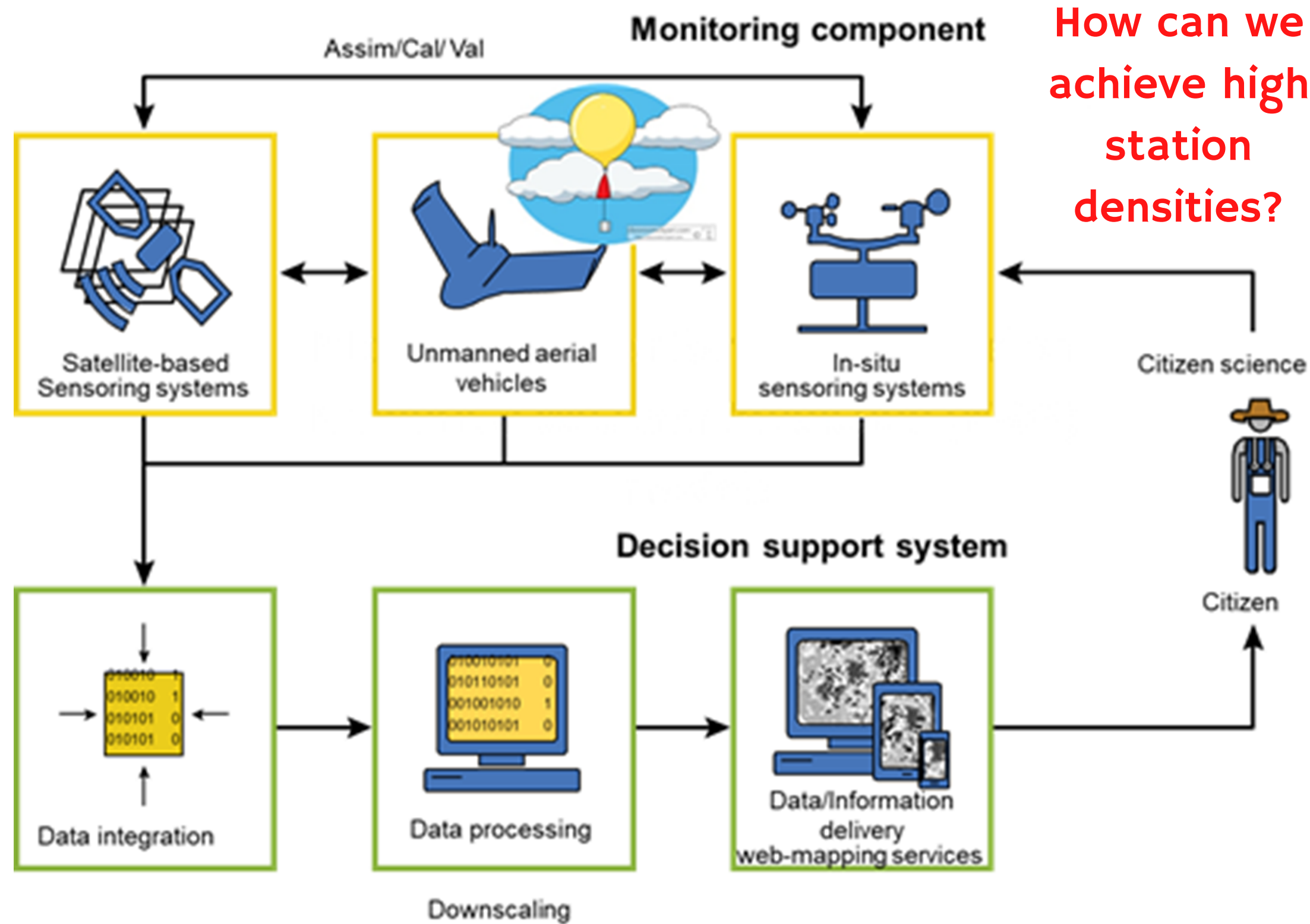
2015



Stations reporting per 1,000,000 km²

Univ. East Anglia

Climate Services - Data Integration



Four elements of Effective Early Warning Systems*



*Adapted from UN International Strategy for Disaster Reduction

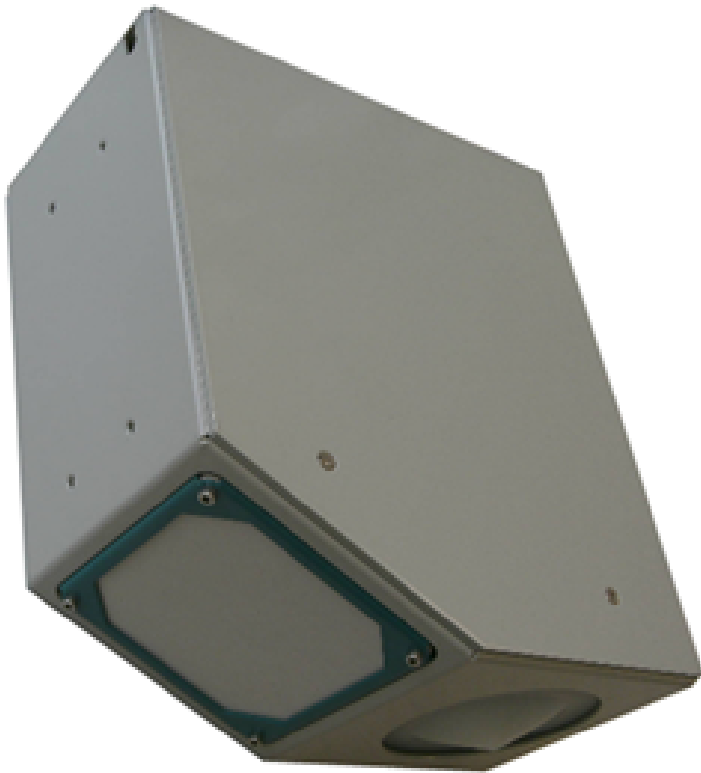
Sensors - Data Integration ...I



IJINUS Sensor



TAHMO ATMOS41 AWS



RQ30 Radar Sensor



CR310 Data Logger



Foscam IP Camera



© Hikvision

Sensors - Data Integration ...II

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[0](#)

TECHNOLOGY NEWS 15 December 2015

Sensors to give early storm warnings to people near deadly lake

An automated SMS network could help save lives on Lake Victoria – where 4000 people drown every year amid near-constant storms



By Hal Hodson

OVER Lake Victoria, one of the largest bodies of fresh water on the planet, the weather can be treacherous. More than 4000 people drown in this east African lake every year as storms overwhelm their boats.

"There are 285 days of lightning a year in [the nearby Ugandan city of] Kampala – just one day without lightning every week," says Frank Annor, field director of the Trans-

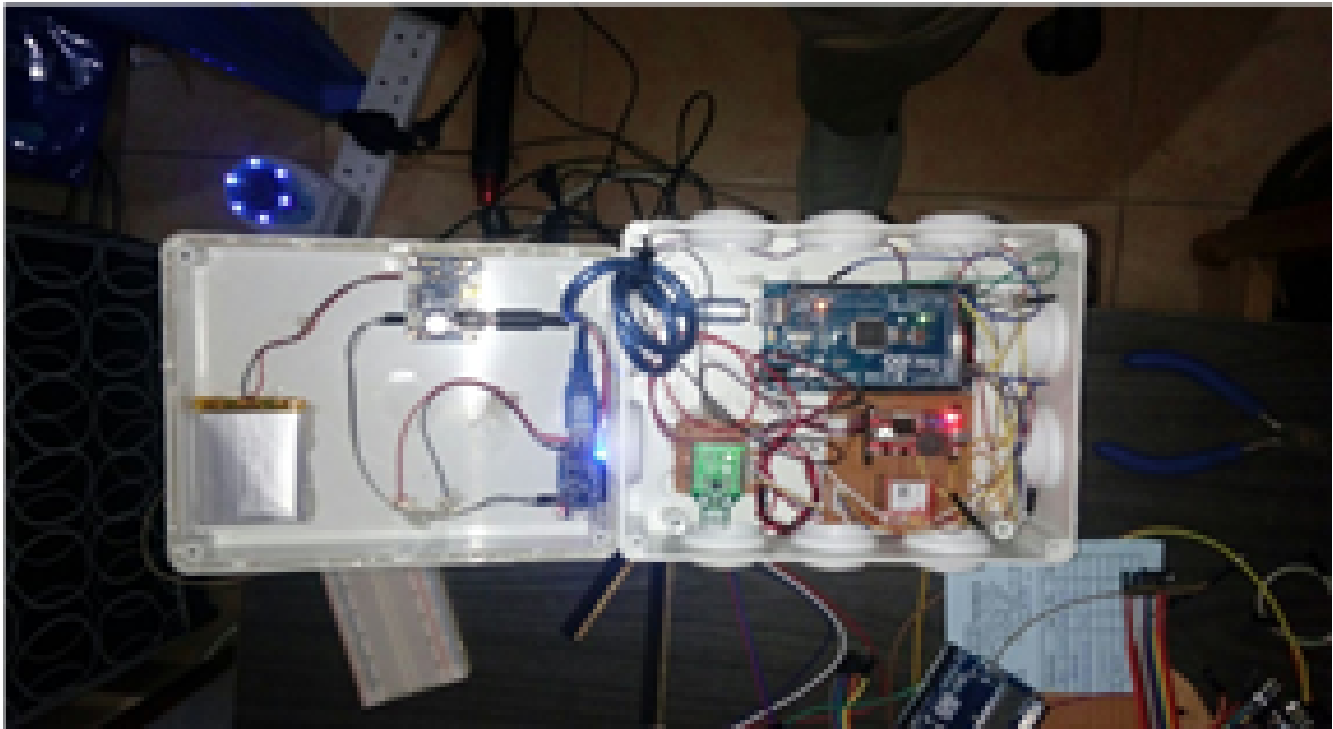
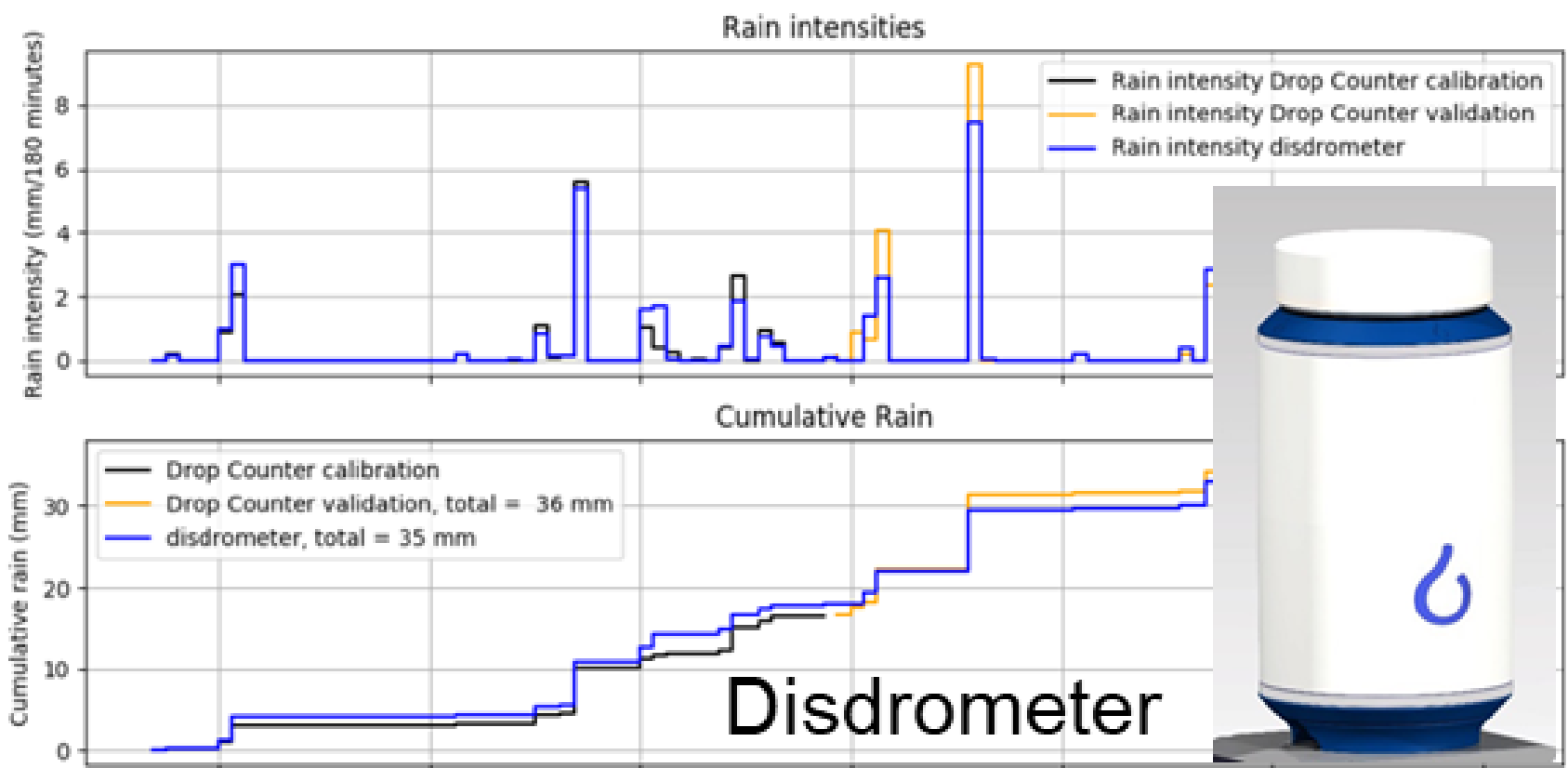
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SPECIAL REPORT

EPISTEMOLOGY

The science of knowledge itself

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AS3935 - Lightning



Sensors - Data Integration ...III



GNSS Rover



Dumpy Level



River Surveyor M9 ADCP



Some Challenges in instrumentation in Africa



Installations



RQ 30 Radar



Ijinus Sensor



Installation /Configuration Challenges



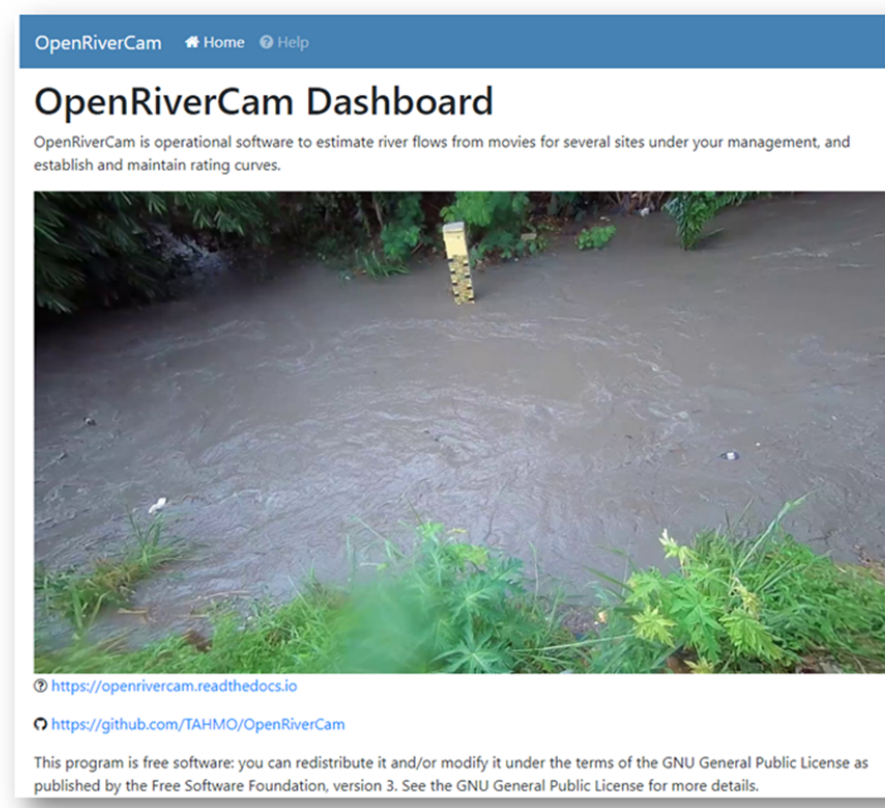
Installation Challenges



Staff Development & Training - e.g. from Tanzania



- Van Dorn Water Sampler
- GNSS Rover
- ADCP & Bathymetry
- TAHMO Stations
- Sediment Sampling Protocol
- OpenRiverCam



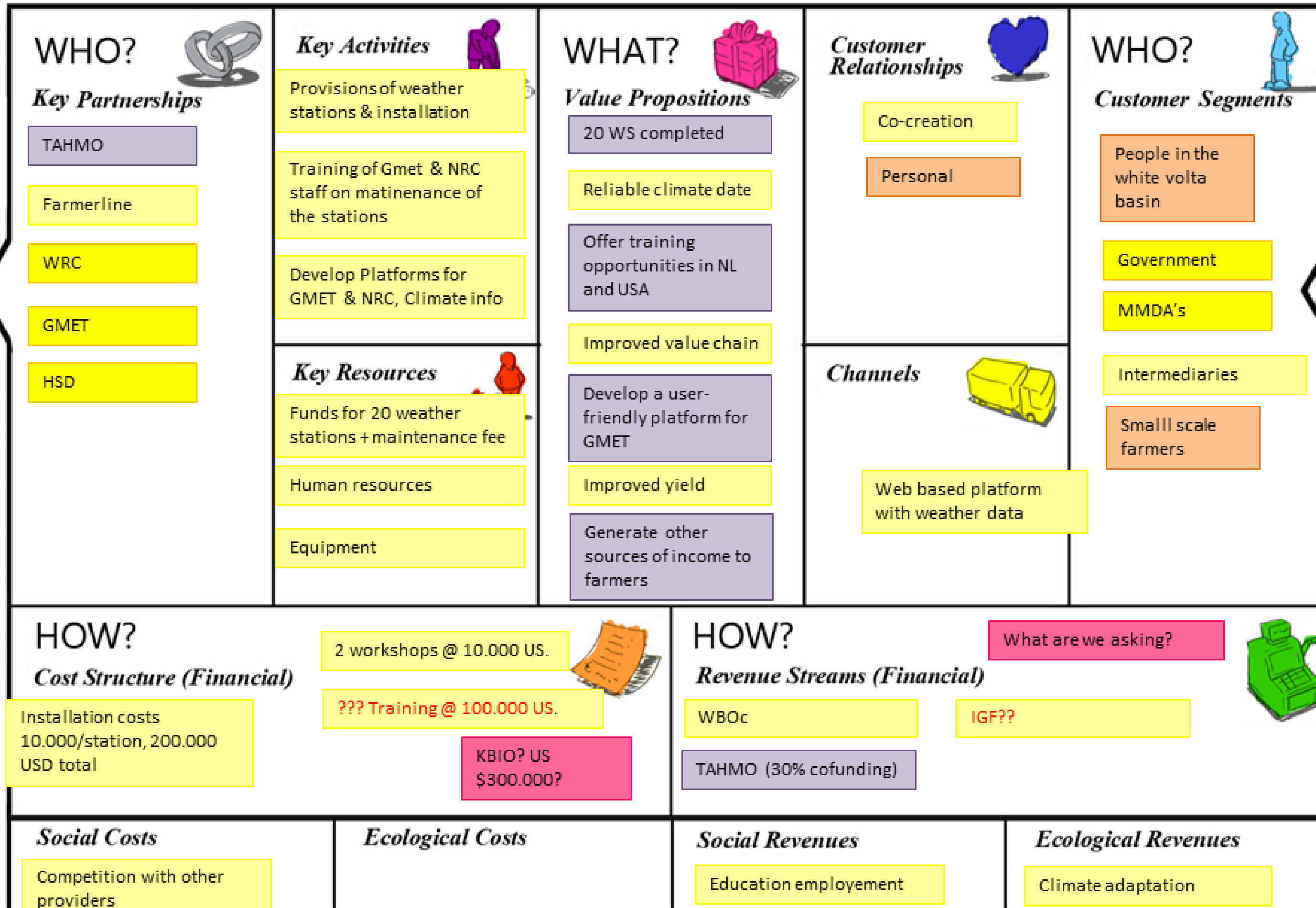
TAHMO - GMET



<https://portal.tahmo.org/login>



https://tahmo.org/docs/TAHMO_API_documentation_latest.pdf



Connecting to Services



GARID
GREATER ACCRA RESILIENT AND
INTEGRATED DEVELOPMENT

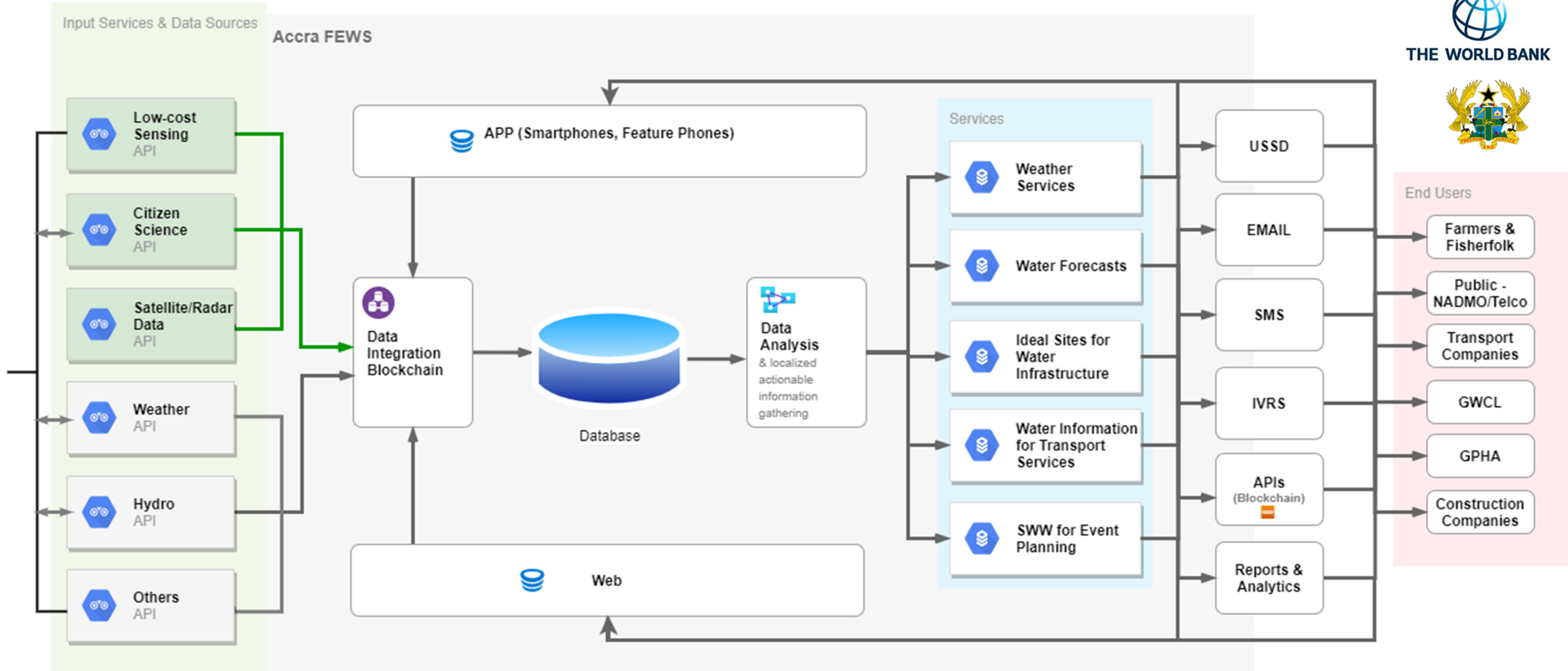


THE WORLD BANK

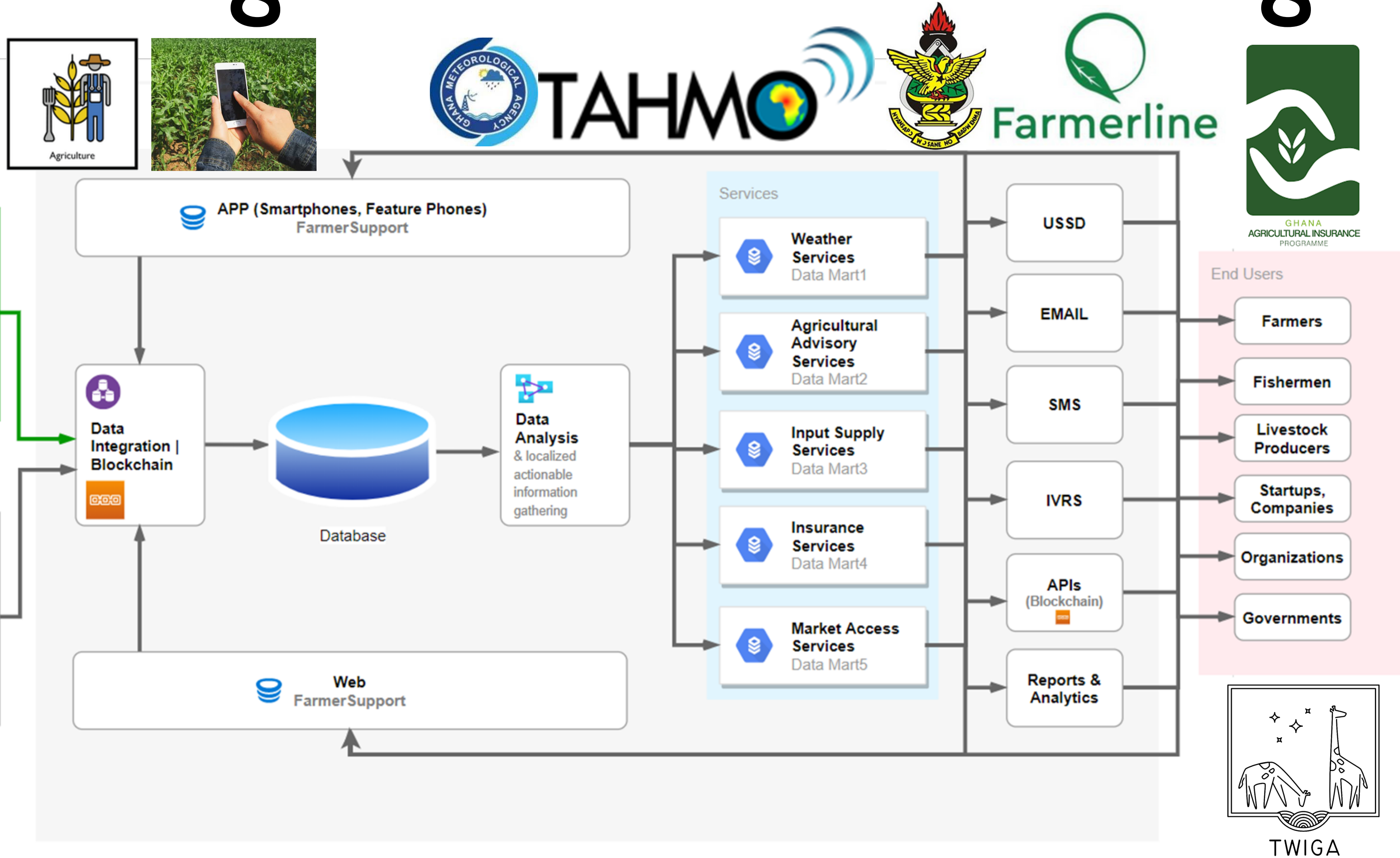


Architecture: Accra FEWS - customized and operational water information dashboards for GAR

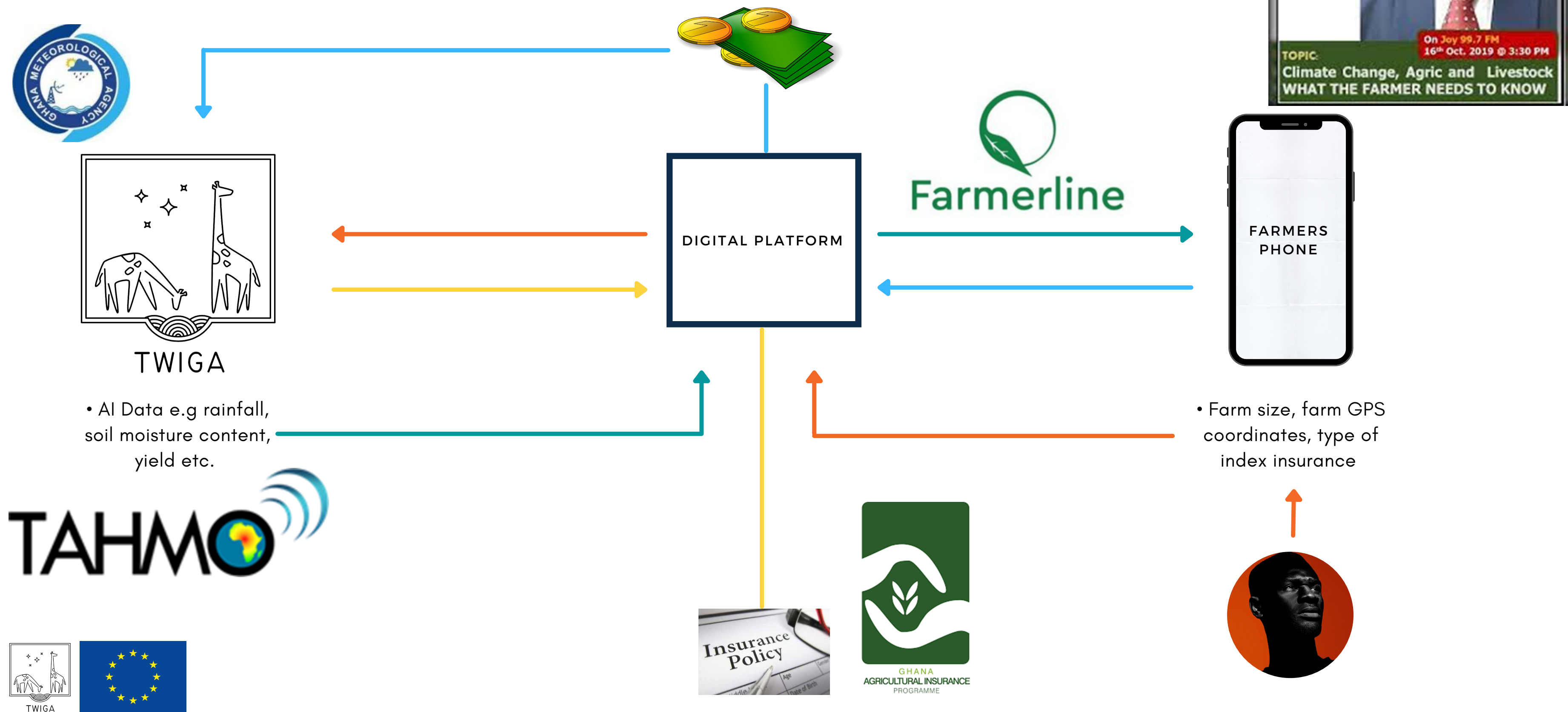
Continuous calibration and validation of model output



Connecting to Services - Bundling



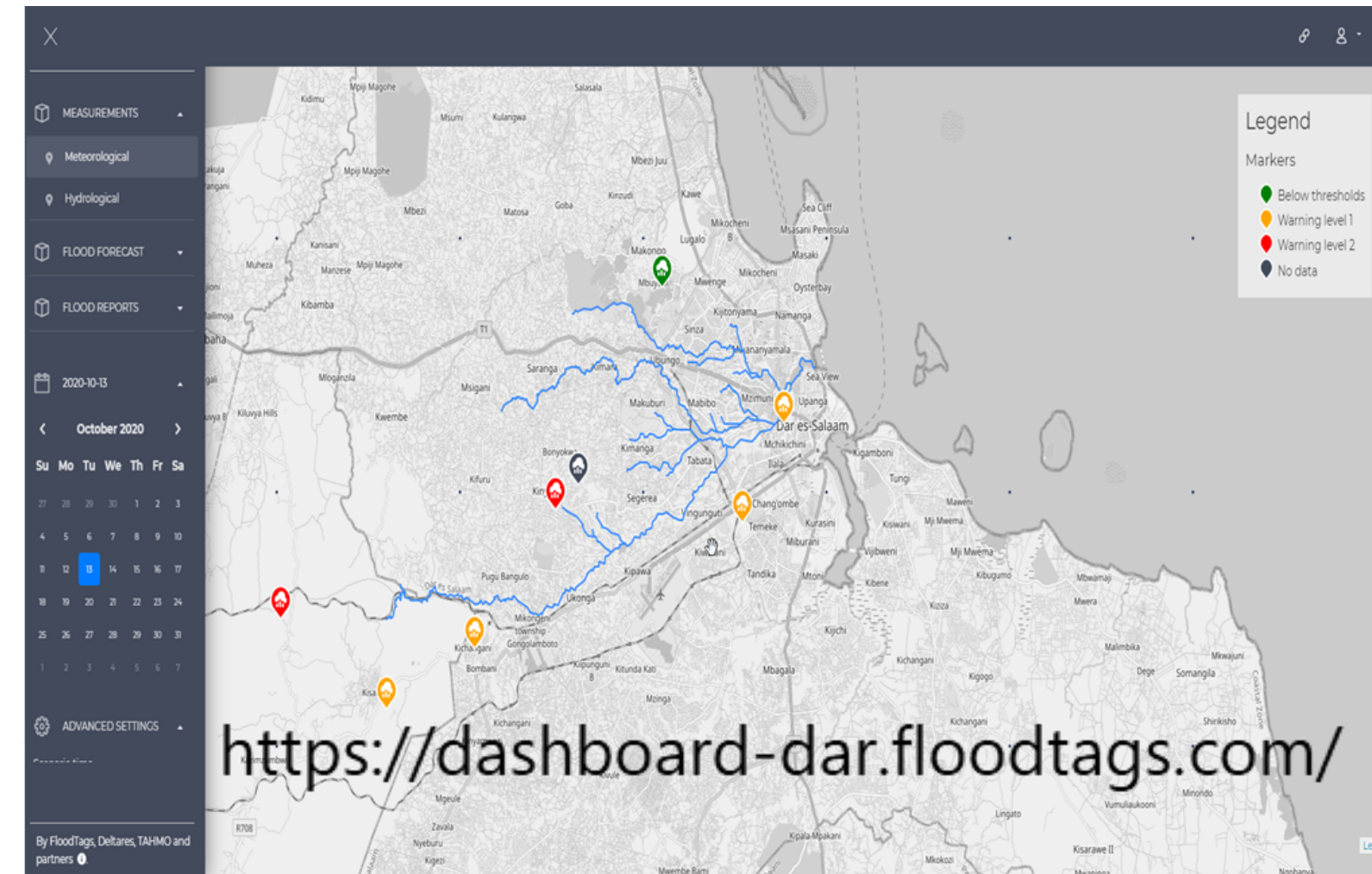
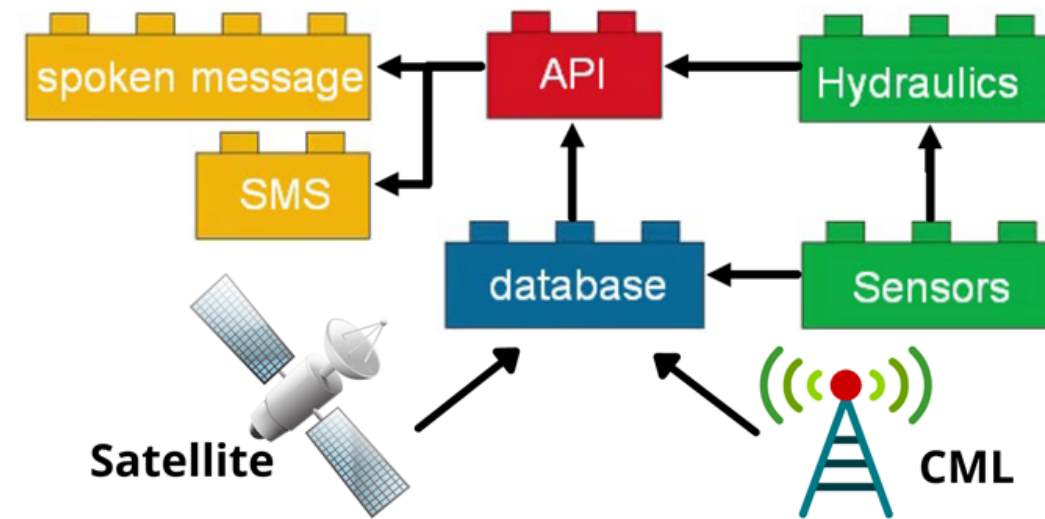
Digital Platform for Insurance



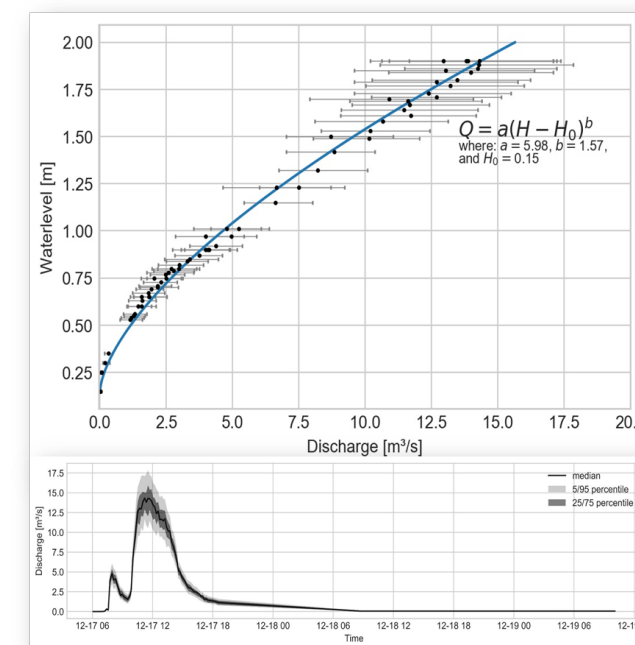
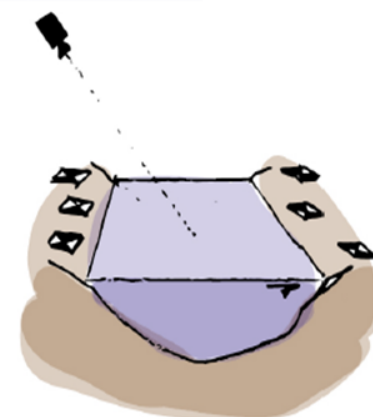
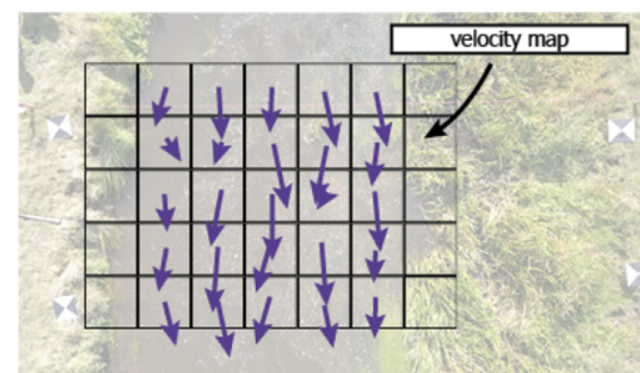
Flood Early Warning Systems

Working with local people,
local Knowledge
& local devices

TAHMO Solution: Lego-ization of FEWS elements



<http://openrivercam.readthedocs.io>

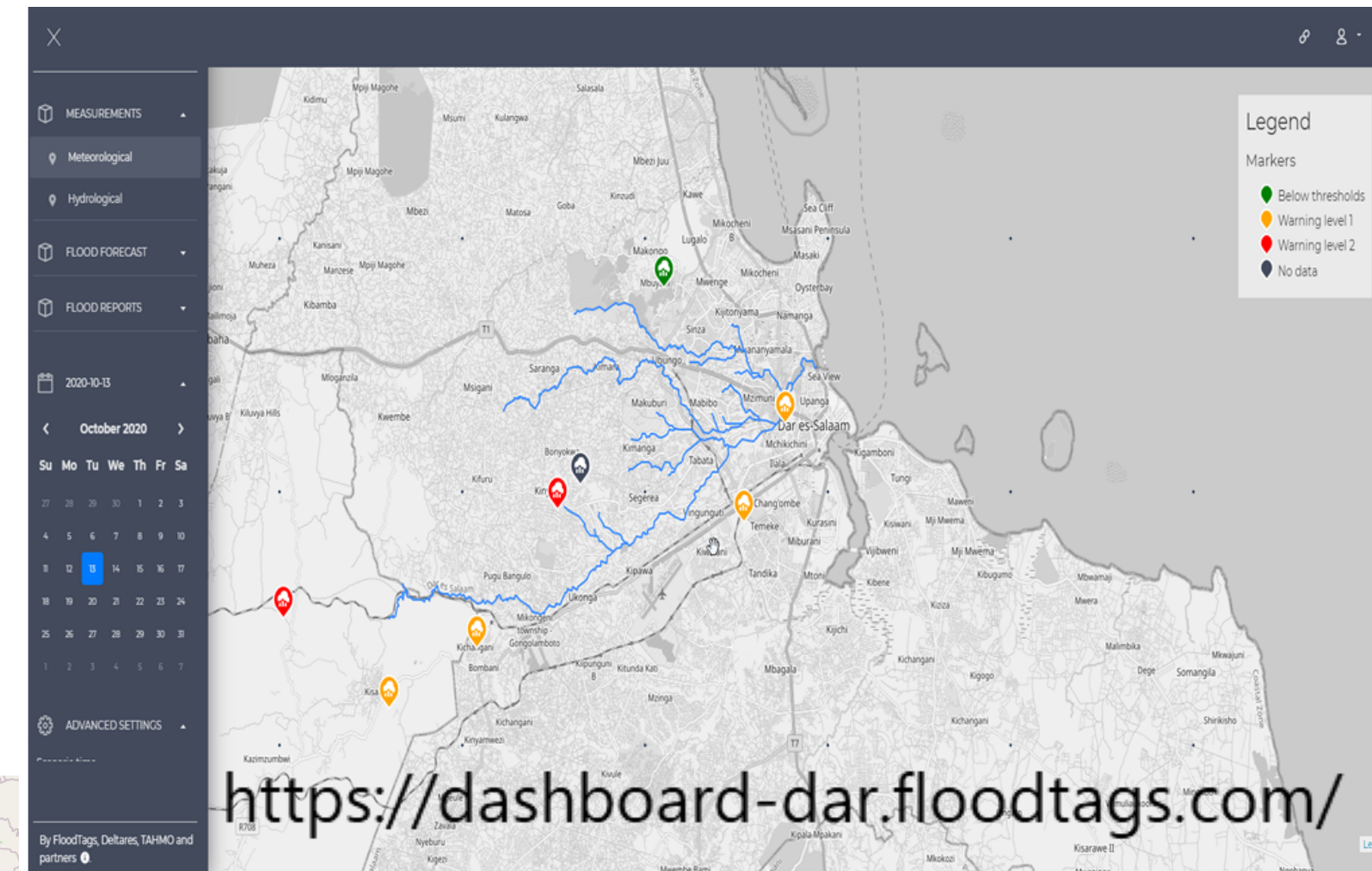
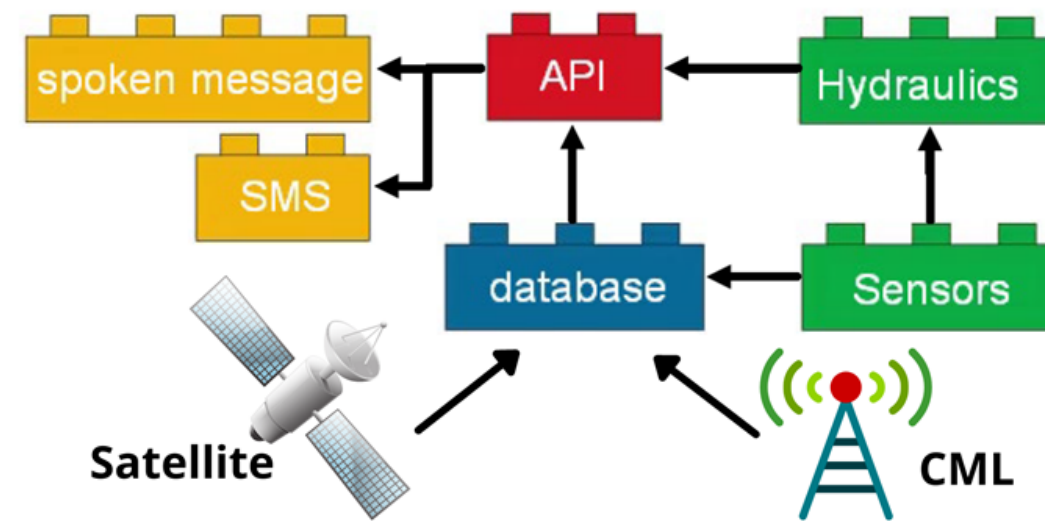




Conclusion



TAHMO Solution: Lego-ization of FEWS elements



Cost efficient solution for high density climate services from which NHMS profit from extra data and local relevance

*Thank
You*



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