

West African RBOs Think tank virtual roundtables on digital transformation

Earth System monitoring, Hydrometry and innovation for river basins

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Team at the round table:

Rokhaya Ba (technical regulation)

Tania Gascon (Floods and early warning systems)

Daniel Sighomnou (water monitoring systems)

Florian Teichert (innovation in Hydrometry)

Ramesh Tripathi (Volta project)



WMO OMM

World Meteorological Organization

Organisation météorologique mondiale

The World Meteorological Organization

WMO is the authoritative voice of the United Nations on weather, climate and water. WMO mandate includes:

- **Facilitate worldwide cooperation** in the field of meteorology and hydrology and their application to the benefit of all;
- Promote the **establishment and maintenance of systems for the rapid exchange of data information** in meteorology, climatology and hydrology;
- Promote **standardization** of observations and ensure the uniform publication of observations and statistics;
- Further the application of meteorology, climatology and hydrology to **development issues** (transportation, water management, agriculture, etc.);
- Encourage **research and training**, and assist in coordinating their international aspects.



**World
Meteorological
Organization**
Weather • Climate • Water



*WMO HQ in
Geneva,
Switzerland*



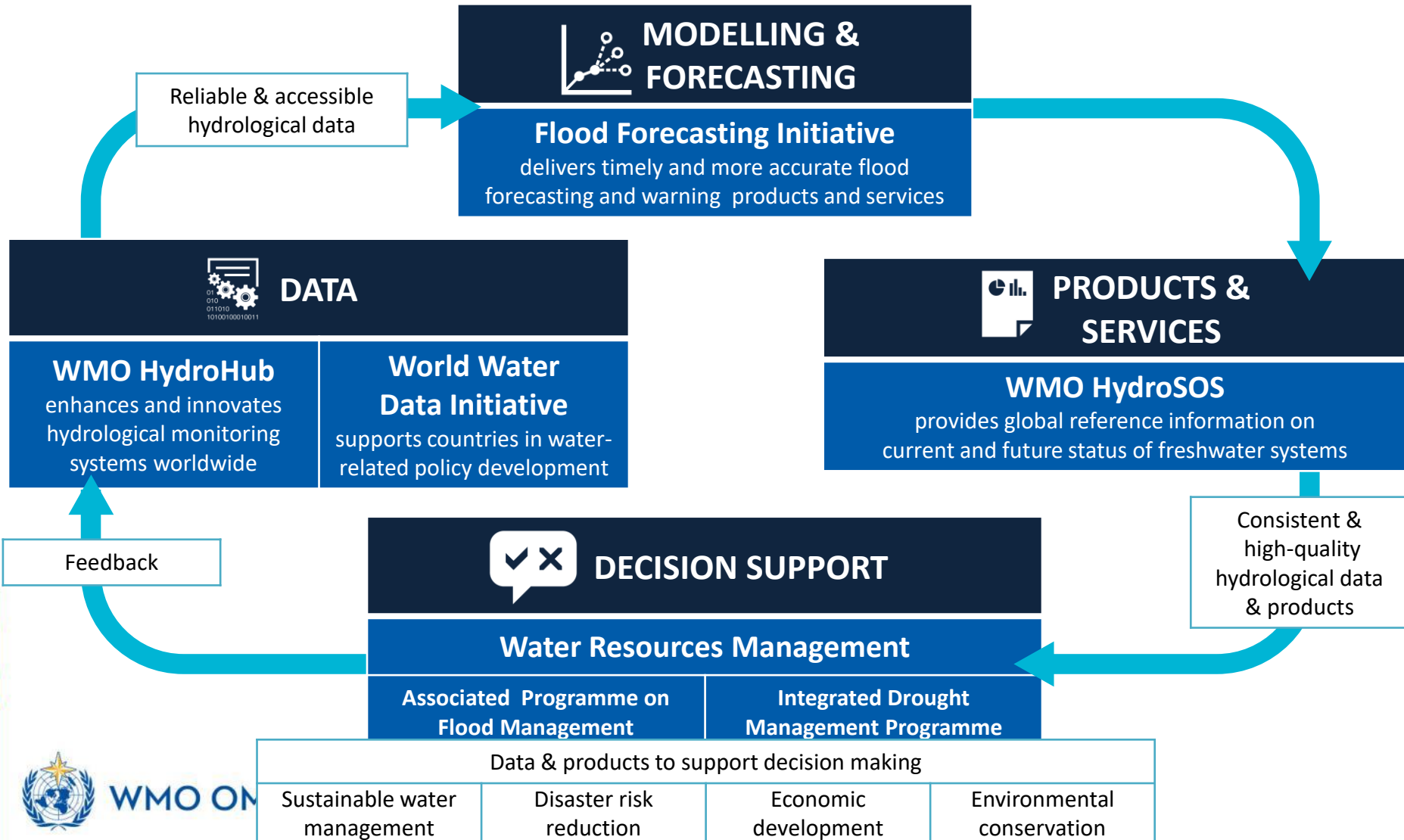
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Hydrological services support 8 ambitions

- 1) No one is surprised by a **flood**
- 2) Everyone is prepared for **drought**
- 3) Hydro-climate and meteorological data support the **food security** agenda
- 4) High-quality data supports **science**
- 5) Science provides a sound basis for **operational hydrology**
- 6) We have thorough knowledge of the **water resources** of our world
- 7) **Sustainable development** is supported by hydrological information
- 8) **Water quality** is known

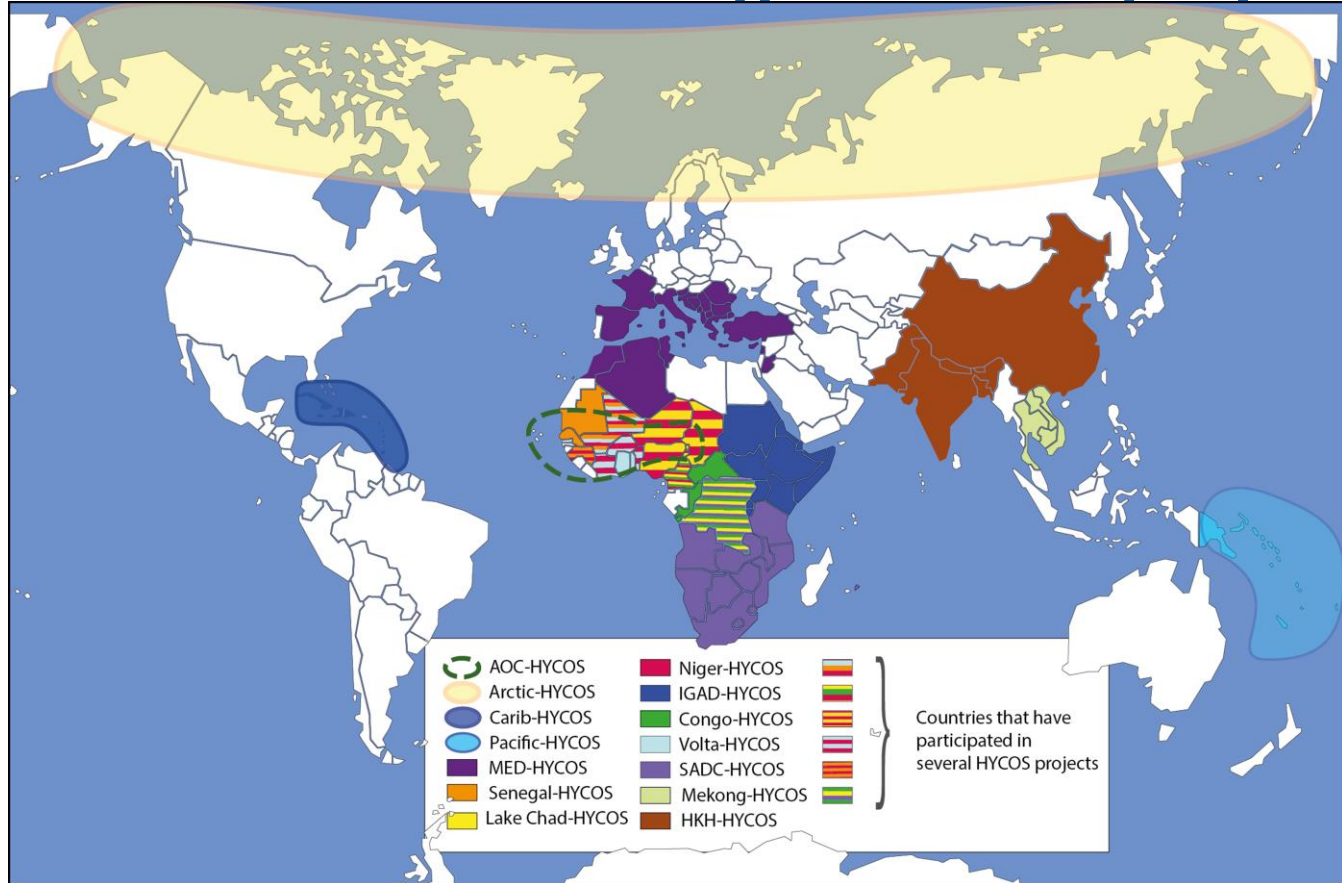


WMO help Countries with a Hydrological Value Chain



The World Hydrological Cycle Observing System

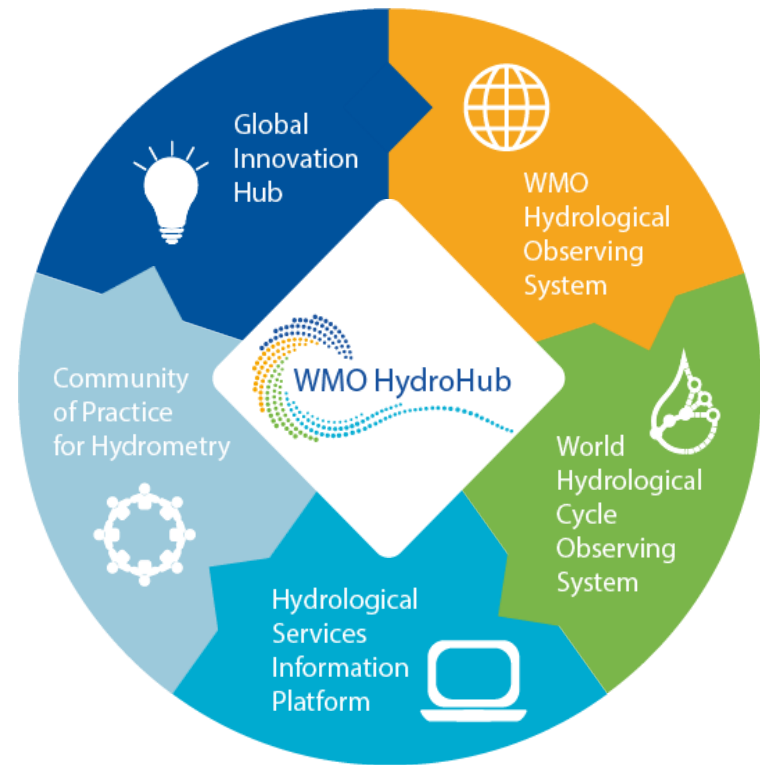
WHYCOS: water monitoring networks projects



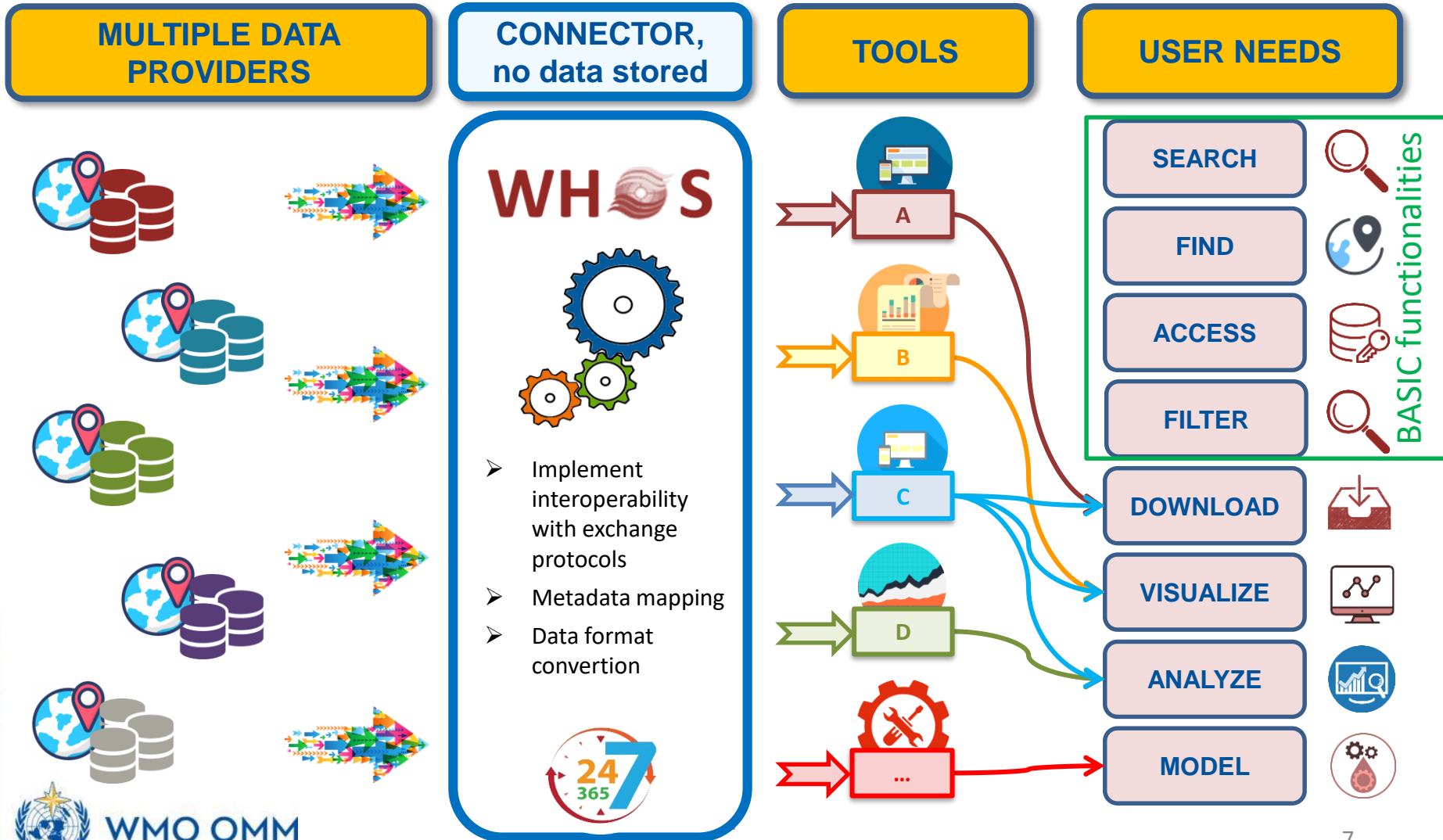
- Successful: 15 components in 25 years
- To be improved: sustainability of achievement, funding mechanisms
- In the pipeline: IndianOcean, Chad, Senegal, Southern Africa

The WMO HydroHub – the new generation of water monitoring

1. Building Hydrological **Monitoring Capacity**
2. Embedding **Innovation** in Hydrometry
3. Enabling Hydrological **Data Sharing**
4. Connecting the **Global Water Monitoring Community**
5. Providing a **Global Focal Point for Hydrometry**



Data sharing and interoperability of systems: WMO Hydrological Observing System WHOS



HydroSOS

HydroSOS: - Hydrological Status and Outlook System

Pilot WMO Initiative that aims at providing global hydrological information products (current & near future)

AT A GLANCE



20 million
people at risk from
flooding



\$80 billion
in associated damage
from flooding



\$8 billion
in losses from drought



9.7 billion
population by 2050



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HydroSOS

What is the hydrological
status?

Is it different from
normal?

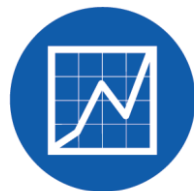
Will it get better or worse
over coming weeks and
months?

HydroSOS: for and by national hydrological Services

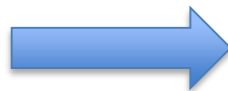
- To use local data and analysis, complemented with information from downscaling global models where gaps are identified.
- To provide easy access to hydrological status and outlook products through a web-based platform.
- To be used by National Meteorological and Hydrological Services, as well as agencies related to water management, ecosystems, agriculture, disaster risk reduction, energy, etc for decision making related to water resources.
- To inform decisions and prevent conflicts related to the use of water resources, especially in transboundary river basins.
- Integration of local needs and knowledge with global services



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INFORMATION
PRODUCTS



INFORMED
DECISION-MAKING

FFGS

It is based on **satellite estimates /NWP** that allows monitoring extreme rainfall events **to analyze / anticipate** their potential to trigger **flash floods in future hours**

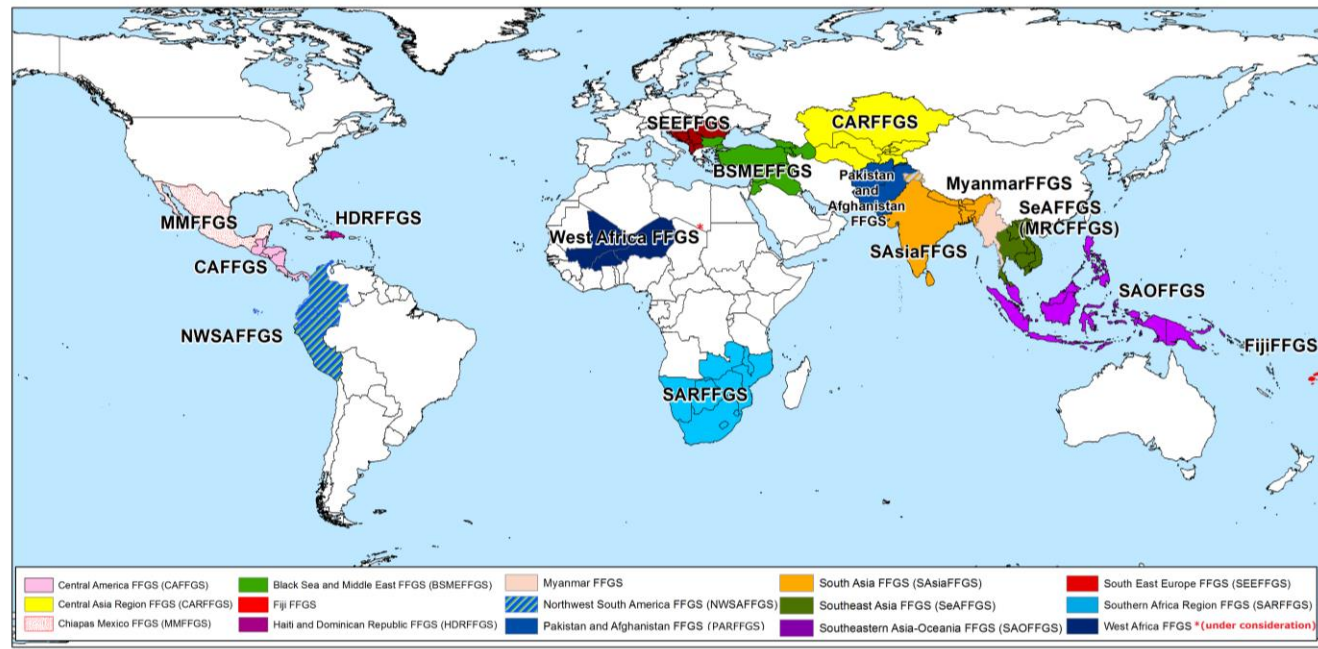
The products must be validated/adjusted with RT data and information on the surface conditions



Environment and Climate Change Canada
Environnement et Changement climatique Canada



FLASH FLOOD GUIDANCE SYSTEM WITH GLOBAL COVERAGE



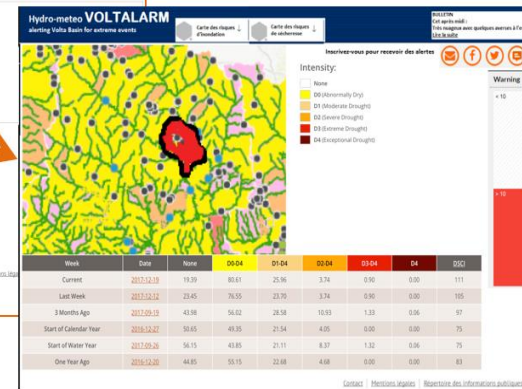
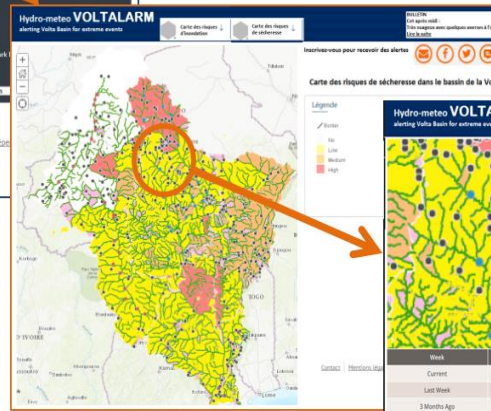
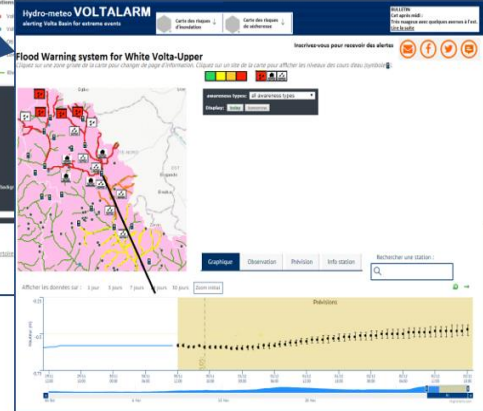
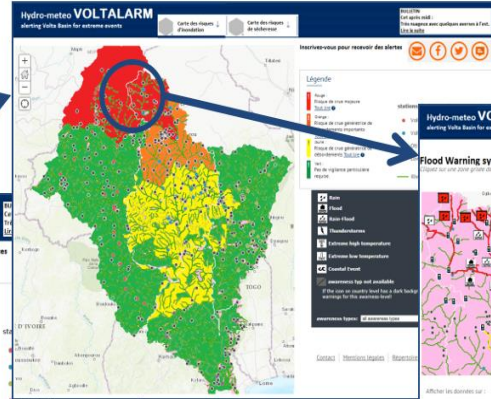
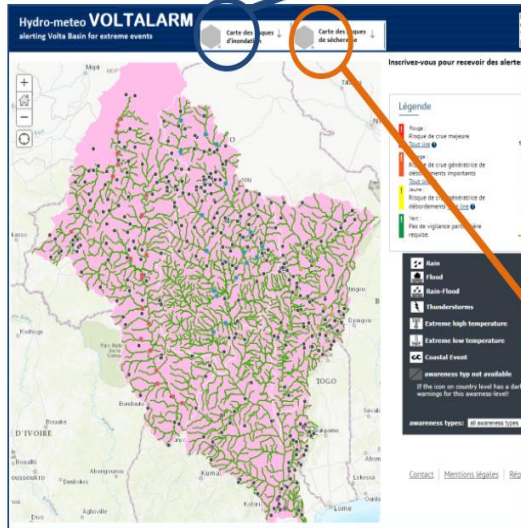
West Africa FFGS: Burkina Faso, Niger, and Mali
In cooperation with regional centers ANACIM, AGRHYMET

Web-based Early Warning System

Sub-basin Flood Warning

River Warning and forecasts

Volta Basin level



- Location of hydrometeorological stations
- Icons for types of hazards
- Warning levels (green to red)
- Links to social media

Drought Warning

Drought Monitor and Outlook



Joint initiative to improve early warning systems for risks linked to extreme weather events.

This initiative

- Mobilizes resources to implement activities that are already planned
- It establishes the bases to access funds such as Green Climate Fund and Adaptation Fund
- Implementation, e.g., in Western Africa



Conclusion 1, a perspective

Digital transformation: from the Latin “digitus”, the finger, then digit, the number

⇒ Digital transformation: shape your future with your own fingers

Conclusion 2, to start the discussion:

- User requirement and benefits are key
- broadly networked, collaborative, interoperable digital system based on a co-production model that includes mutual education and training (AOS 2019 call for action).
- CARE principle: Collective benefit; Authority to Control; Responsibility; and Ethics
- Acquiring information and knowledge \Leftarrow sharing data

Thank you Merci



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