



Why do we need consistent and long-term observation strategies?

WMO: 2020 State of Climate Services

https://library.wmo.int/doc_num.php?explnum_id=10385

- Dominance of hydrological disasters in Africa, S-America, Central and SE-Asia.
- Improved Early Warning systems need better observation and data exchange capabilities.



Fig. 3. Map of deadliest and most costly weather, water and climate related hazards for each country (WMO analysis of 1970-2019 data from the CRED Emergency Events Database). WMO, 2020, WMO-No. 1252, edited by highlighting floods and droughts.



The Issues in the recent status

1. Even at coarse scales, uncertainties of many water cycle components are large.
2. In particular, relevant in situ observations lag of spatial and temporal coverage and required data sharing capabilities.
3. Many expert groups working on different water cycle components.
4. Improvements of sustainable financing of observational networks & open data policies are required.
5. Accounts for both, water quantity and quality

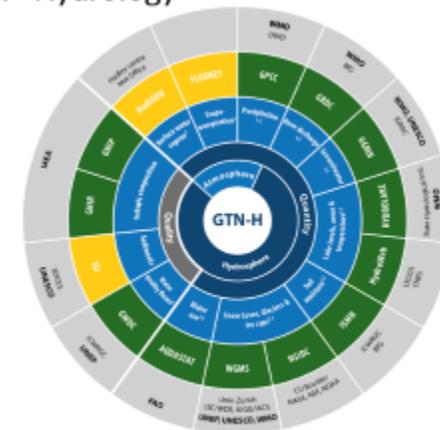


See also Dorigo, Dietrich et al BAMS 2021 (<https://doi.org/10.1175/BAMS-D-19-0316.1>)



Global Terrestrial Network - Hydrology

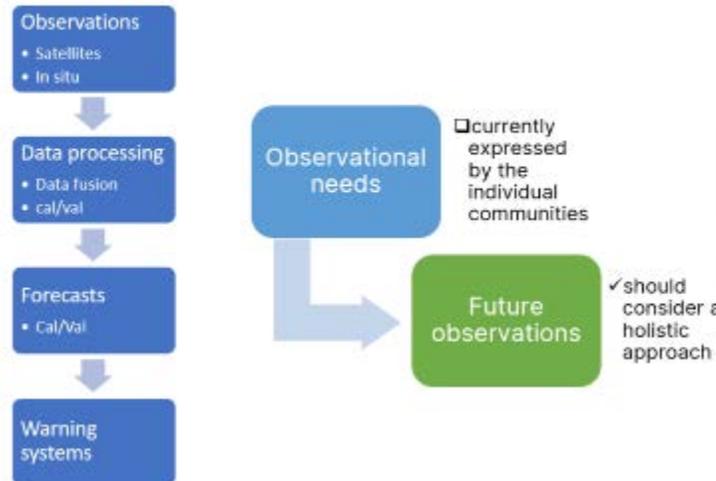
- Founded in 2001
- Coordinated by ICWRGC since 2017
- Joint project of the World Meteorological Organization (WMO) and the Global Climate Observing System (GCOS)
- federated network of global water data centres,
- Linking freshwater-related observations on a global scale.



Blue: GCOS Essential Climate Variable
 Green: Essential Climate Variable
 Grey: ICWS in network
 Yellow: Global network identified/suggested to join ICWS



Some solutions: Continuation and expansion of existing observation systems



• An improved exchange of hydrological information can help to save lives and to significantly reduce economic losses through climate driven disasters.

• We seek for case studies that demonstrate the added value of in situ observations for the entire value chain of hydrological disaster and climate change warning systems. (please contact gtn-h@bafg.de)

