

Observation Systems in support of water-related Essential Climate Variables: The Global Terrestrial Network Hydrology (GTN-H)

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The Global Terrestrial Network for Hydrology (GTN-H) was established in 2001 as a baseline network in support of UNFCCC, and is an activity under the joint auspices of the Global Climate Observing System (GCOS), the Climate and Water Department of the World Meteorological Organization (WMO) and the Global Terrestrial Observation Network (GTOS). It also represents the observational arm of the Integrated Global Water Cycle Observations Community of Practice of the Global Earth Observation System of Systems (GEOSS). The presentation outlines the development and present status of GTN-H as a global hydrological network of networks. Together, these federated global data centres respond to the needs for global hydrometeorological data, information and data products that aim to provide the observational basis for the development of adaptation methods to climate change. Likewise, interaction with users of GTN-H services demonstrates the utility of the data provided through GTN-H for research including environmental change, identification of trends and the development of adequate response strategies. The presentation shows the large range of services provided to a diverse user community in support of climate services and the increasing demands of users for high quality and timely earth observations. Opportunities for linking terrestrial earth observations with space-based observations are highlighted. The presentation discusses still existing challenges with regard to data sharing arrangements facilitating free and open access to data, and progress made with regard to standardization of data to improve accessibility. Looking ahead, the presentation outlines priority areas of work of GTN-H especially with regard to quality control, closing observational gaps and overall strengthening of in-situ data acquisition.