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Overview of the Theme 2 of IAHS HELPING: Holistic Solutions for Water Security

Ana Mijic¹, Claudia Teutschbein², David Finger³, Junguo Liu⁴, Kristian Foerster⁵, Marthe Wens⁶, Nejc Bezak⁷, Santosh Palmate⁸, Shiv Nishad⁹, and Stefan Krause¹⁰

¹Imperial College London, UK

²Uppsala University, Sweden

³Reykjavik University, Island

⁴North China University, China

⁵University of applied sciences Weihenstephan-Triesdorf, Germany

⁶Vrije Universiteit Amsterdam, Netherlands

⁷University of Ljubljana, Slovenia

⁸Texas A&M University, USA

⁹CSIR-National Institute of Science Communication and Policy Research, India

¹⁰University of Birmingham, UK

The term "water security" denotes the sustainable availability and access to clean and safe water for diverse purposes, ensuring the well-being of individuals, communities, and ecosystems. Despite numerous proposed solutions from the scientific community to address water security challenges, a genuinely holistic, systems-level approach is still lacking. The research conducted under Theme 2 of the new IAHS HELPING decade is grounded in the premise that holistic solutions for water security necessitate an integrated approach. This involves understanding the potential and challenges associated with mitigation methods for floods, droughts, and water quality/pollution, as well as being aware of the sectorial nexus of problems and solutions. Nature-based solutions (NBS) are also considered for sustainable water management. The theme brings together seven working groups (WGs) focusing on methods and applications for characterising droughts in the Anthropocene, providing near-term water availability forecasts, and conducting water systems analysis using integrated tools and participatory engagement. Additionally, these WGs address interactions between water, energy, health, and ecological systems, with the aim of advancing ecological restoration and the implementation of NBS. This talk will present a high-level overview of the WGs, showcase preliminary findings, and discuss the potential for integrating insights and methods from multiple work streams into a comprehensive framework for water security solutions.