



UN
2023 WATER
CONFERENCE

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UN 2023 Water Conference Side Event

*Transdisciplinary Ecohydrology for acceleration of SDG –
methodology of science and patterns of implementation*

23rd March, 2023, 09:30 – 10:45 (EST) Conference Room 6,
United Nations Headquarters in New York

Organized by:

Ministry of Infrastructure of the Republic of Poland
UNESCO Intergovernmental Hydrological Programme (IHP)
Secretariat, Division of Water Sciences (SC/HYD), Section of
Capacity Development, and Water Family Coordination (CDW);
European Partnership “Water Security for the Planet” (Water4All);
African Regional Centre for Ecohydrology, Directorate for
Ecohydrology, Ministry of Water and Energy, Addis Ababa (ARCE);
European Regional Centre For Ecohydrology of the Polish Academy
of Sciences (ERCE);
UNESCO Chair in Ecohydrology: Water for ecosystems and societies,
University of Algarve;
Asia Pacific Centre for Ecohydrology (APCE);
UNESCO Chair on Urban Waters Secretary, University of Sao Paulo;
Center of Education and Research on Disasters (CEPED), University
of Sao Paulo;
UNESCO Chair on Ecohydrology and Applied Ecology, University of
Lodz;
IHP National Committee of the Republic of Korea.

Background on the event (one paragraph)

Transdisciplinary Ecohydrology, which fundamentals has been developed in the framework of the Intergovernmental Hydrological Program of UNESCO, and European Commission projects is a background for development and optimization Nature-Based Solutions (NBS) for water, through highlighting the interactions between water and biota from molecular biology to catchment scales. From over 2 decades The ERCE UNESCO PAS has been developing further steps - Advanced Nature-Based Solutions (EH ANBS) based on transdisciplinary Ecohydrology which are NBS enforced by molecular biology biotechnology, phytotechnology, also systemic solutions – integration for synergies different ANBS with hydroengineering solution in the catchment scale.

Water Action Agenda (one paragraph, if possible, please include the link to your commitment in the [Water Action Agenda database](#))

The European Regional Centre for Ecohydrology in cooperation with the Ministry of Infrastructure of Poland declares as Commitment for acceleration SDG the further development and dissemination of the above holistic transdisciplinary Ecohydrology through, scientific research, international cooperation and dissemination in farmwork Intergovernmental Hydrological Program of European Commission Water4All. ERCE will fully commit to further develop holistic transdisciplinary water/sustainability science for enhancement of catchment sustainability through Education and Sustainability Culture for Facilitation of stakeholder engagement and cocreation process of enhancement catchment sustainability potential WBSR+ CE+LPG (consisting of: water, biodiversity/bioproductivity, ecosystem services to society, resilience to climate change, and supported by Sustainability culture and education, law, policy and governance).

The commitment titled: “Development, Dissemination and implementation of Advanced Nature Based Solutions (ANBS), based on transdisciplinary Ecohydrology” has been submitted online through the Water Action Agenda registration platform, and it is available in the following link:

<https://sdgs.un.org/partnerships/development-dissemination-and-implementation-advanced-nature-based-solutions-anbs>

Key Issues discussed (5- 8 bullet points)

- 1/ Development of the Concept of Enhancement Catchment Sustainability Potential, which is step further from conservation, rehabilitation and restoration. The integration of Hydrology/Ecology deepening the understanding of life supporting processes towards its translation in to Advanced Nature-Based and systemic solutions.
- 2/ Lateral Reservoirs & Aquaculture in river valleys, improves retentiveness, water quality, the river continuum, resilience to climate change, healthy protein biodiversity/biocomplexity, ecosystem services for society - WBSR)
- 3/ Support of food industry and agriculture

Key recommendations for action (5 - 6 bullet points)

- 1/ Improvement of efficiency sewage treatment plants by EH ANBS

2/ Mitigation of non-point source pollutions: EH ANBS mathematical models high efficiency land/water ecotone zones, geochemical, denitrification barriers

3/ Adaptation of the city to climate change by stormwater purification using EH ANBS and its retention in small reservoirs at urban green areas network.

4/ Cooperation with technical institutes and private sector, innovative technologies for monitoring and improvement of water quality and early warning systems.