



water
footprint
network

UNIVERSITY
OF TWENTE.



UNIVERSIDAD
DE LA RIOJA

Water-Energy-Food nexus symposium

Date: 8 November 2023, 14:00-16:00 CET

Location: Zoom event

Registration: utwente-nl.zoom.us/meeting/register/tZAvceqvqTovE9fdIQo2LDeVDAjFMJI6bOxx
(250 people maximum, you will immediately receive a confirmation email with a link to the symposium)

More details: waterfootprint.org/event/water-energy-food-nexus-symposium-2023

LinkedIn event for networking: linkedin.com/events/water-energy-foodnexusymposium7100120972778721280

Involved institutions: Water Footprint Network (WFN), University of Twente (UT), Institute for Sustainability & Food Chain Innovation (ISFOOD) and Institute for Advanced Research in Business and Economics (INARBE) of the Public University of Navarra (UPNA) and University of La Rioja (UR).

Organisers: Han Su (h.su@utwente.nl), Oleksandr Mialyk (o.mialyk@utwente.nl), Markus Berger (m.berger@utwente.nl), Maite M. Aldaya (maite.aldaya@unavarra.es), Diego Sesma-Martín (diego.sesmam@unirioja.es), Meadow Poplawsky (m.k.poplawsky@utwente.nl)

Summary

The OECD predicts there will be 9 billion people on Earth by 2050. At the same time, it is anticipated that global water needs will rise by 55%, energy consumption by 80%, and food production by 60%, all of which could have an impact on land use patterns. In light of these forecasts, the importance of the Water Energy Food (WEF) nexus thinking is needed more than ever.

In this symposium, we aim to provide a comprehensive overview of the state-of-the-art, gaps and advances in WEF nexus research. We invited well-known keynotes and prominent early-career scientists to cover a wide range of topics including water and carbon footprints, the role of forests and food waste, governance, and many more. Sounds interesting? Then see you in November!

Agenda

14:00 - 14:05 **Welcoming words**
Rick Hogeboom (University of Twente, Water Footprint Network)

14:05 - 14:30 **The WEF nexus and nutrition**
Keynote Claudia Ringler (International Food Policy Research Institute and CGIAR Initiative on NEXUS Gains)

14:30 - 15:00 **The physical and social dimensions of the WEF nexus**
Keynote Declan Conway (Grantham Research Institute)

15:00 - 15:55 **1. Social sciences and governance in WEF**
Early career scientist breakout rooms **Moderator: Meadow Poplawsky (University of Twente)**

Integrated assessment of water-energy-food nexus: Conceptual framework and application to the Ping River Basin, Thailand
Kaushal Chapagain (Asian Institute of Technology)

Demo Sites of WEF Nexus implementation across the Mediterranean region
Alexandra Tsatsou (National Technical University of Athens)

Tradeoffs and synergies between food security and forest cover in Brazilian drylands
Lucas Alencar (The University of Manchester)

The implications of the water-food nexus in Brazil through the lens of municipal development: the case of the 150 largest producers
Mateus Amaral (University of São Paulo)

2. Energy in WEF

Moderator: Diego Sesma-Martín (University of La Rioja)

Operational water footprint assessment: a study case of ultra-supercritical (USC) coal-fired power plant

Nurul Hani Mardi (Universiti Tenaga Nasional)

Climate change impact on Water-Energy-Food Nexus in Iran

Bahareh Heidary (University of Tehran)

3. WEF modelling and virtual water trade

Moderator: Han Su (University of Twente)

Quantitative Analysis of the Kandadji Program for the Regeneration of Ecosystems and Development of the Niger Valley Considering the nexus Water-Energy-Food-Environment (WEFE) using the WEAP Model

Agossou Gadedjisso-Tossou (AGRHMET Regional Center and University of Ottawa)

Integrating the Water-Energy-Food-Ecosystem Nexus: Climate Dynamics and Water Availability Assessment in the Senegal River Basin

Mbayang Thiam (Cheikh Anta Diop University)

Assessing Virtual Water Flow Models for Water Scarcity Management, Trade Policies, and Climate Adaptation: A Case Study of Botswana's Agricultural Trade (1980-2020)

Simbarashe Govere (University of Botswana)

The virtual water flows of smallholders and large-scale farms

Han Su (University of Twente)

4. Water & Food: crops

Moderator: Oleksandr Mialyk (University of Twente)

Water Footprint of Food Production: A case study of 15 selected crops in Malaysia

Siti Norliyana Harun (The National University of Malaysia)

WEF Nexus in Burkina Faso, case of Bagre's Dam

Tiendrebeogo Gerard (Burkina Faso Ministry)

Water-energy-food-environment nexus of Mango cultivation in Tamale, Ghana

Andi Mehmeti (Mediterranean Agronomic Institute of Bari (CIHEAM Bari))

Addressing Blue Water Scarcity Challenges in Banas River Basin Using Water Footprint Approach

Mukesh Kumar Mehla (Texas Tech University)

The Integration of Microbial Processes to Enable a Sustainable Water-Energy-Food Nexus Towards a Circular Bioeconomy

Mohammed Islam (The University of Sheffield)

5. Water & Food: livestock

Moderator: Maite M. Aldaya (Public University of Navarra)

Water, land and carbon footprints of Chinese dairy in the past and future

Junjie Yi (University of Groningen)

Measuring for water use efficiency on pasture-based dairy farms in South Africa

Lorraine Phadu (Trace & Save)

Grey water footprint related to nitrogen of steer manure from intensive and extensive production systems in Buenos Aires, Argentina

Macarena Arrien (Universidad Nacional del Centro de la Provincia de Buenos Aires and Consejo Nacional de Investigaciones Científicas y Técnicas)

Modeling the impact of agricultural production and livestock activities on green water scarcity

Abdullah Muratoglu (Batman University)

15:55 - 16:00

Closing words

Mar Rubio-Varas (INARBE-Public University of Navarra)



Claudia Ringler

Affiliation: Director, Natural Resources and Resilience, International Food Policy Research Institute. CGIAR Initiative on NEXUS Gains

Claudia Ringler is Director, Natural Resources and Resilience in the Transformation Strategies Department. She coordinates research at the intersection of nature, agriculture and development for tangible progress toward more equitable and resilient food systems. As co-lead of the CGIAR NEXUS Gains initiative, she drives research on the role of energy in transforming food and water systems, and on climate change adaptation, mitigation as well as water and other natural resource interventions for increased equity and resilience. Claudia has more than 200 publications in the areas of water and food security, and equity in climate resilience, irrigation, and energy systems, developed in collaboration with partners across Africa and Asia. In 2021, she was awarded honorary life memberships by both the International Water Resources Association and the International Association of Agricultural Economics for her lifelong contributions to the fields of water resources economics and agricultural economics, respectively. Claudia received a PhD in agricultural economics from the Center of Development Research, University of Bonn, and an MA in International Development Economics from Yale University.



Declan Conway

Affiliation: Research director, Grantham Research Institute

Declan's research cuts across water, climate and society, with a strong focus on adaptation and the water-energy-food nexus. Originally a geographer, Declan draws on insights from different disciplines to pursue problem focused research. He has over 20 years of experience working in the UK/Europe, sub-Saharan Africa and Asia. Declan's research funding has included the EU, UK departments DFID, Defra and DECC, UK NERC and ESRC, US NSF and the World Bank.