



Jun 27th, 10:40 AM - 12:00 PM

Introducing an interactive Global Water Scarcity Atlas

Joseph Guillaume

Water & Development Research Group (WDRG), Aalto University, joseph.guillaume@aalto.fi

Matti Kummu

Water and Development Research Group, Aalto University

Yoshihide Wada

International Institute for Applied Systems Analysis (IIASA)

Follow this and additional works at: <https://scholarsarchive.byu.edu/iemssconference>

Guillaume, Joseph; Kummu, Matti; and Wada, Yoshihide, "Introducing an interactive Global Water Scarcity Atlas" (2018). *International Congress on Environmental Modelling and Software*. 105.
<https://scholarsarchive.byu.edu/iemssconference/2018/Stream-C/105>

This Oral Presentation (in session) is brought to you for free and open access by the Civil and Environmental Engineering at BYU ScholarsArchive. It has been accepted for inclusion in International Congress on Environmental Modelling and Software by an authorized administrator of BYU ScholarsArchive. For more information, please contact scholarsarchive@byu.edu, ellen_amatangelo@byu.edu.

Introducing an interactive Global Water Scarcity Atlas

Joseph Guillaume^a, **Matti Kummu**^a, **Yoshihide Wada**^b

^a Water & Development Research Group (WDRG), Aalto University (joseph.guillaume@aalto.fi)

^b International Institute for Applied Systems Analysis (IIASA)

Abstract: Water scarcity is an important concept within the Food-Energy-Water (FEW) nexus, underpinning security of supply of all three resources, and directly connecting to sustainable development targets related to drinking water (6.1), water use and scarcity (6.4), water resource management (6.5) and ecosystems (6.6). We introduce a new interactive Global Water Scarcity Atlas intended for water analysts and researchers to gain a better understanding of water scarcity as an issue, and explore how water scarcity has developed globally, how it is projected to change in the future and what actions can be taken to cope with scarcity. The design of the website combines an introduction to water scarcity concepts with visualisations of global datasets and interactive scenario analyses using global water models in order to help bridge scales and perspectives within a holistic global view. At a basic level, water scarcity is introduced as concerning four issues: heavy water usage leading to “water stress”, difficulty in meeting human needs (“water shortage”), changes to the water cycle due to water use, and sharing of scarce water. Interactive scenario analyses notably allow the user to test the effect globally of climate change, diet change, food loss reductions, and water use efficiency improvements. It is hoped the atlas will continue to be updated to reflect the state of the art, and will help in taking global connections into account in decision making related to the FEW nexus.

Keywords: water scarcity; atlas; integrated modelling; scenario analysis