

EGU25-13721, updated on 21 May 2025
<https://doi.org/10.5194/egusphere-egu25-13721>
EGU General Assembly 2025
© Author(s) 2025. This work is distributed under the Creative Commons Attribution 4.0 License.



The 'safe operating space' for global and local water use under climate and societal change

Paolo D'Odorico

University of California, Department of Environmental Science, Policy, Management, Berkeley, United States of America
(paolododo@berkeley.edu)

The increasing water demand by human societies raises concerns on the extent to which it is possible to feed the world with the limited freshwater resources of the planet. The growing competition for water between human uses and environmental needs limits the development of suitable water security scenarios for a sustainable future. Human appropriation of water resources is for large part instrumental to the enjoyment of human rights to food. To what extent can such rights be reconciled with other human needs as well as the needs of Nature? This seminar will show how humanity is placing unprecedented pressure on the global agricultural system and the water resources it relies on. Through a suite of ecohydrological and socio-environmental analyses, we evaluate the biophysical and social justice limits to the sustainable use of water resources through a variety of perspectives accounting for hydrologic constraints, human needs, environmental flows, and globalization.