

UKCEH Initiatives

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25.06.24



UK Centre for
Ecology & Hydrology

**NATIONAL CAPABILITY
FOR GLOBAL CHALLENGES**

International science for net zero plus

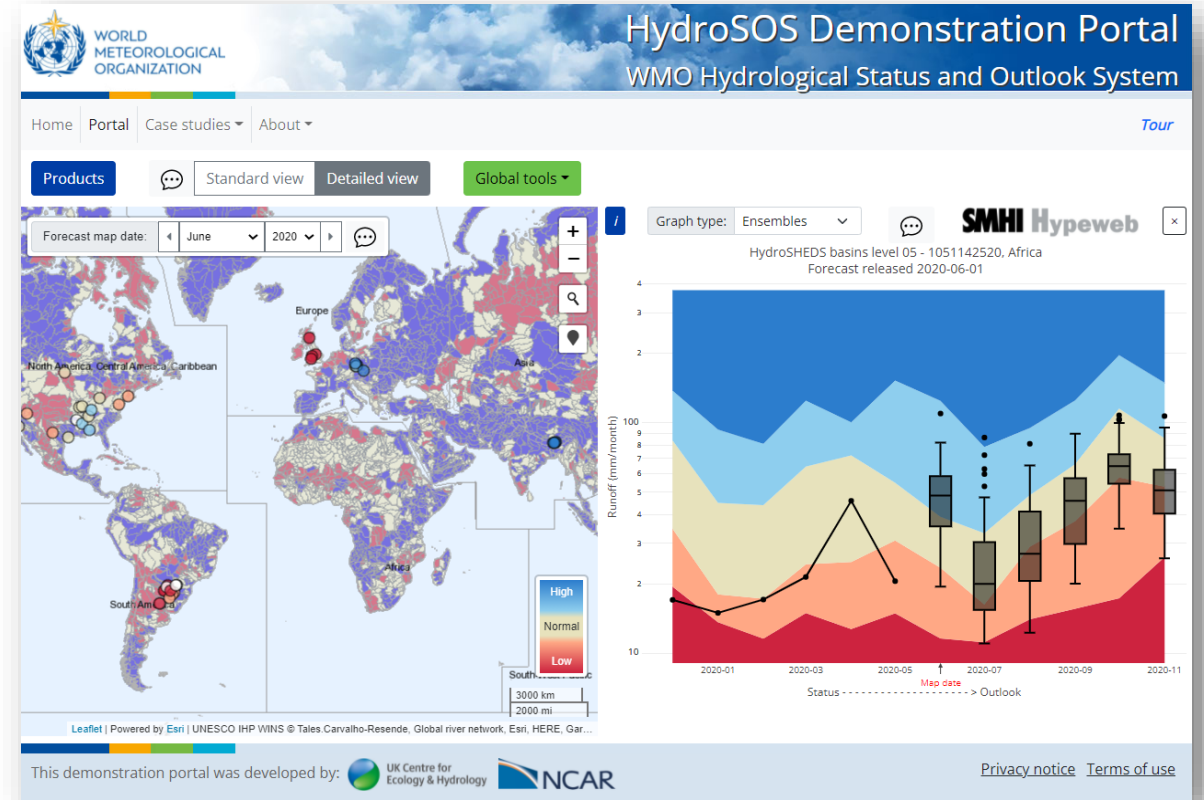
HydroSOS – Hydrological Status and Outlooks System



HydroSOS:

Integrating global status and Outlooks with national-to local-scale knowledge

Regional demonstrators, knowledge exchange

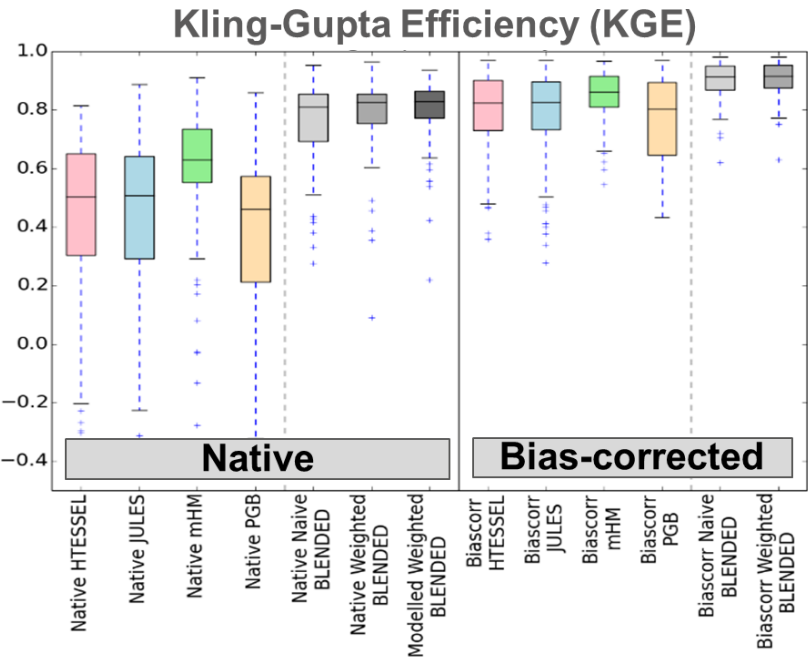
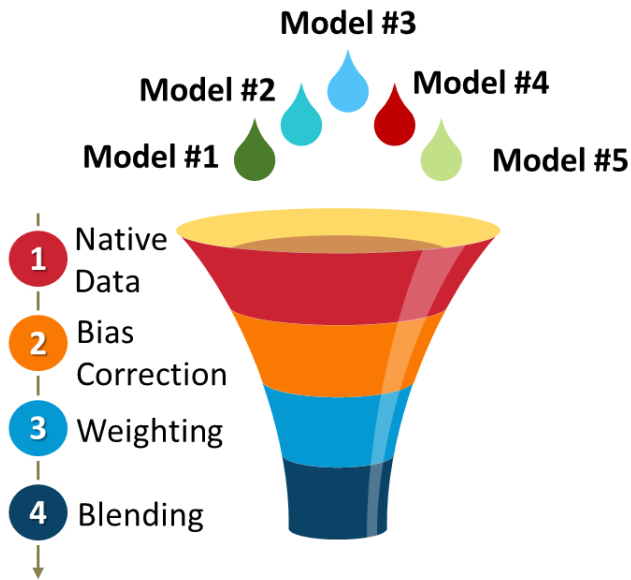


The HydroSOS Global Demonstrator Portal

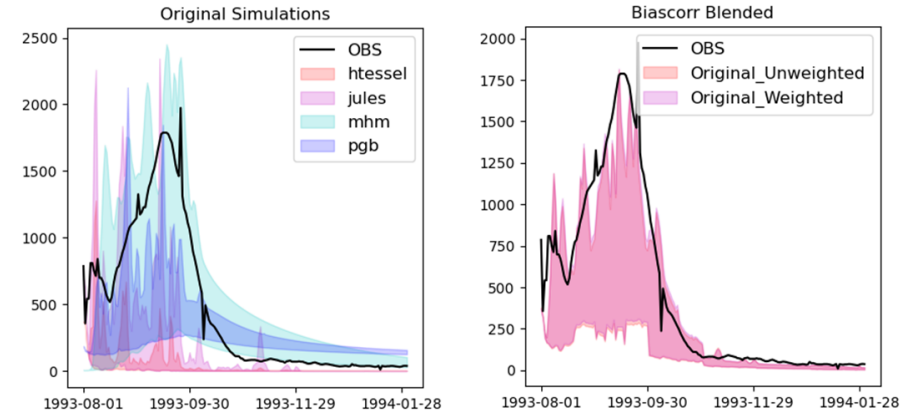
<https://community.wmo.int/en/activity-areas/global-hydrological-status-and-outlook-system-hydrosos>



Seasonal hydrological forecasting – ULYSSES/HydroSOS



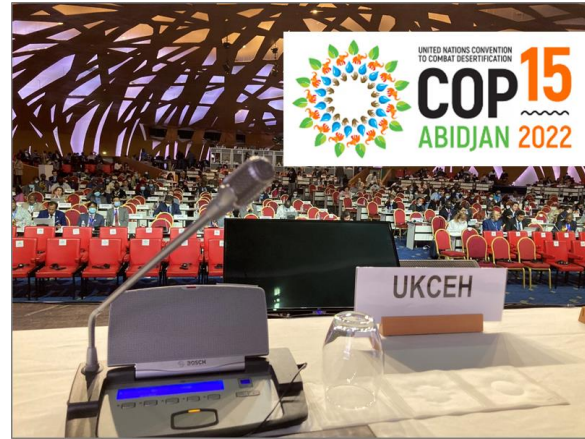
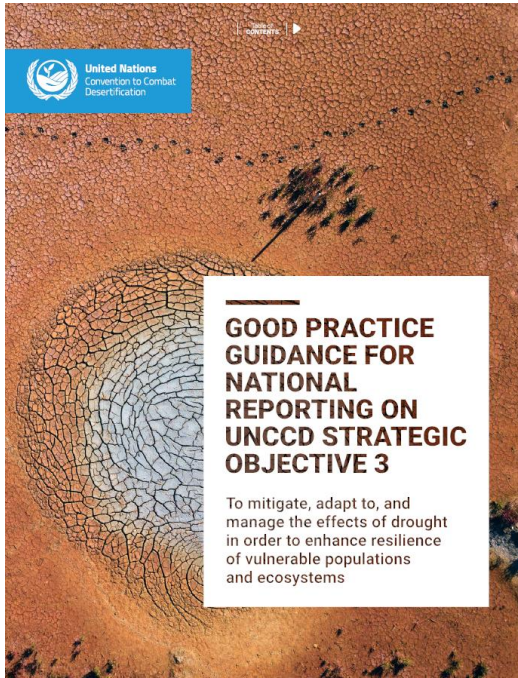
Blending and bias-correction approaches will be tested to see how they can improve local hydrological forecasts over south-east Asia and Sub-Saharan Africa



Global hydrological simulations can be improved by combining blending multi-model approaches with bias-correction ([Chevuturi et al., 2023](#)).

Blended forecasts better than the sum of their parts – Making toolkits and workflows available

Supporting UNCCD



*UNCCD Good Practice Guide for SO3
(drought status monitoring),*

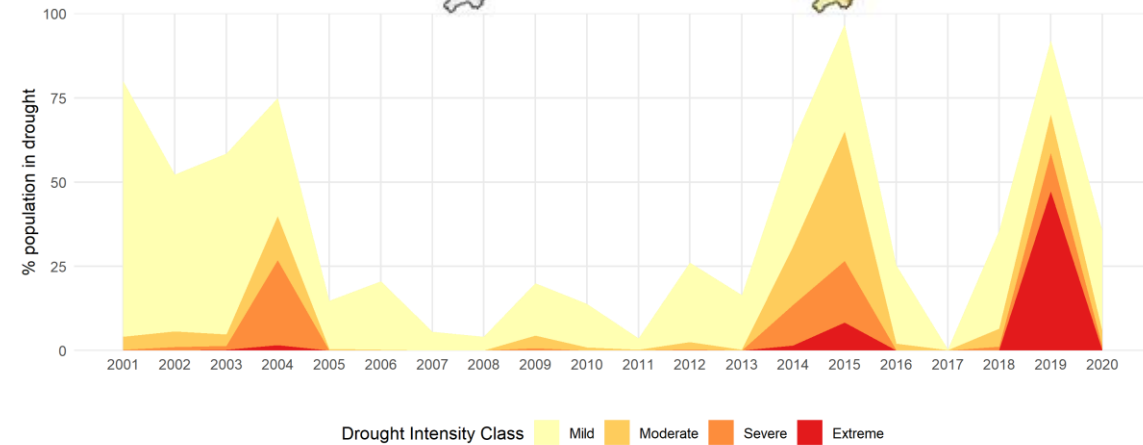
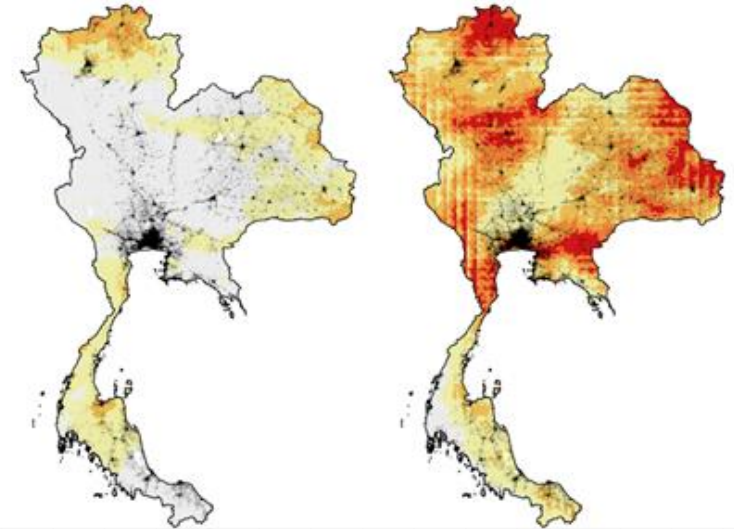
Lucy Barker et al. 2021, presented at COP in Abidjan, 2022



<https://www.ceh.ac.uk/news-and-media/news/new-guidance-global-drought-monitoring>

2008-2011

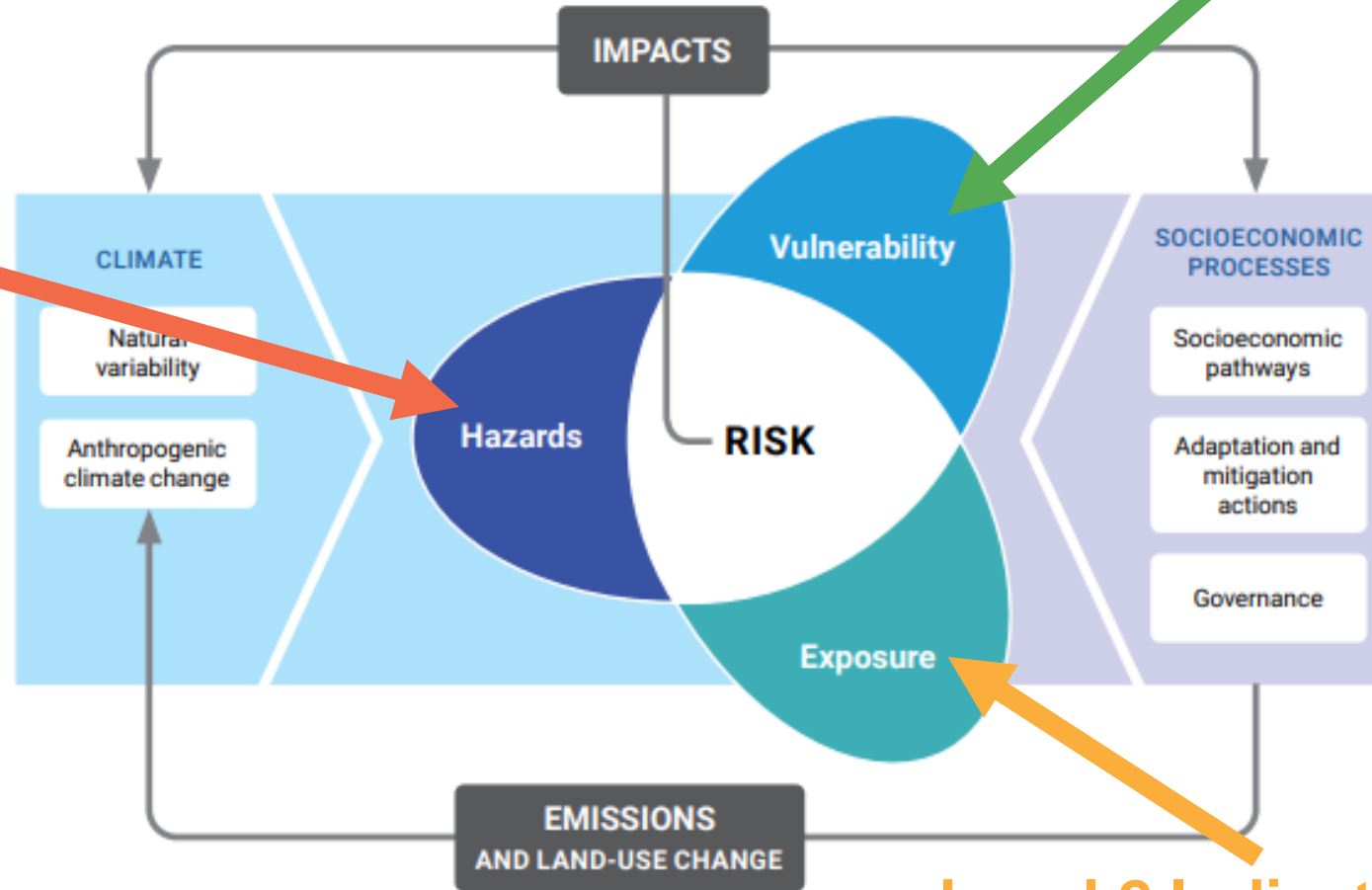
2012-2015



*Case study application of GPG to Thailand,
Incorporating hazard, exposure and vulnerability
(Barker et al. in prep)*

UNCCD GPG: Current and future developments

Figure 1
IPCC risk framework



Source: Adapted from IPCC 2014a

Level 1 Indicator

- Use of Standardised Precipitation Evapotranspiration Index (SPEI)
- Options for monitoring other types of drought
- Evaluate potential for integrated hazard indicators

Level 3 Indicator

- Improved (local) datasets
- Expert knowledge in factor selection and weightings
- Include ecosystem vulnerability
- Validation of results against impacts

Level 2 Indicator

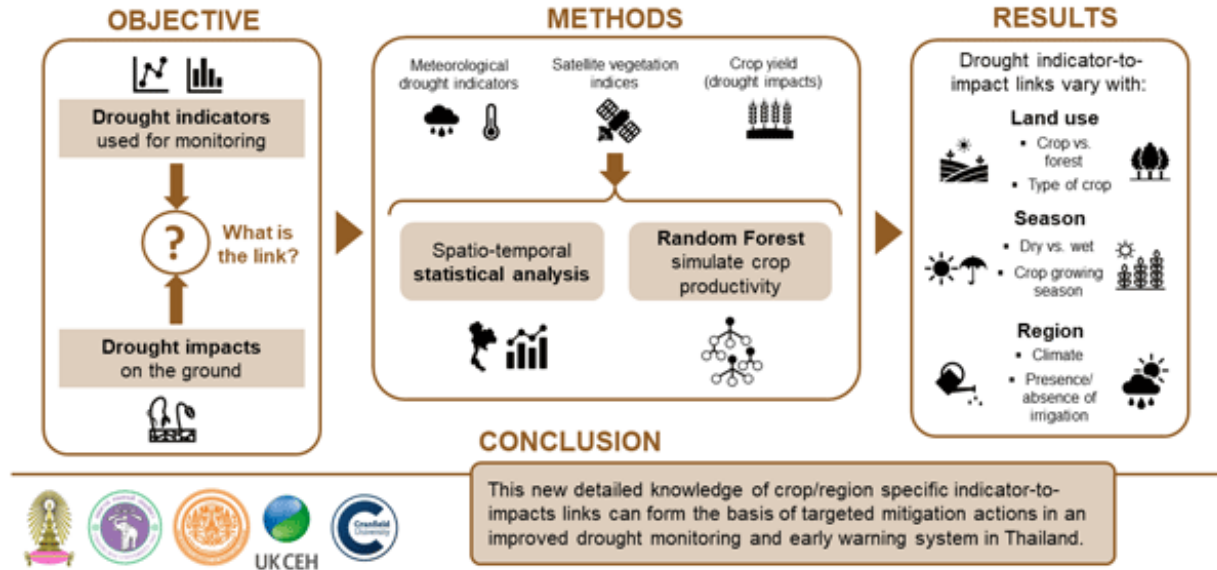
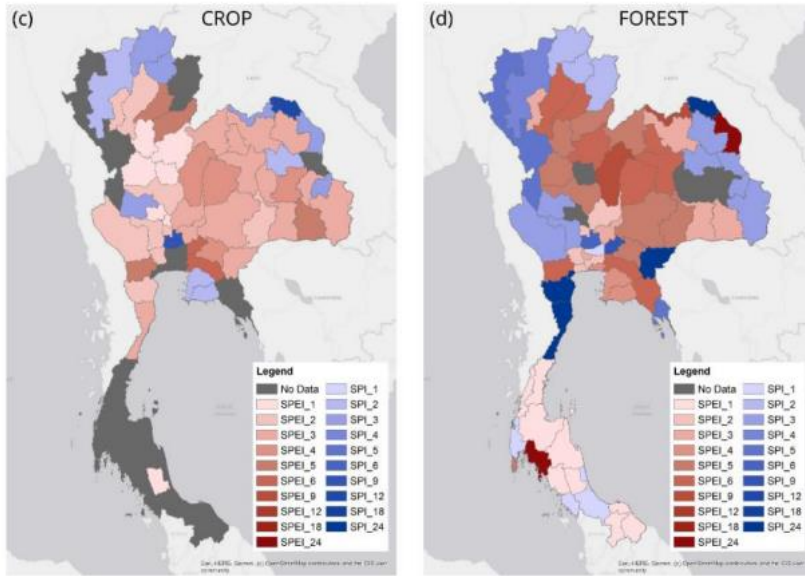
- Additional factors
- Ecosystem exposure as a key priority

Impact-based monitoring and forecasting



Indicator-to-impact links to help improve agricultural drought preparedness in Thailand

Tanguy et al, 2023



Tanguy et al., 2023, NHESS
 Linking hydrometeorology, vegetation and crop yields to improve early warning

Indicator-> impact projects underway in:

- [UK](#)
- Europe? (collaboration with DitA)
- SE Asia
- West Africa

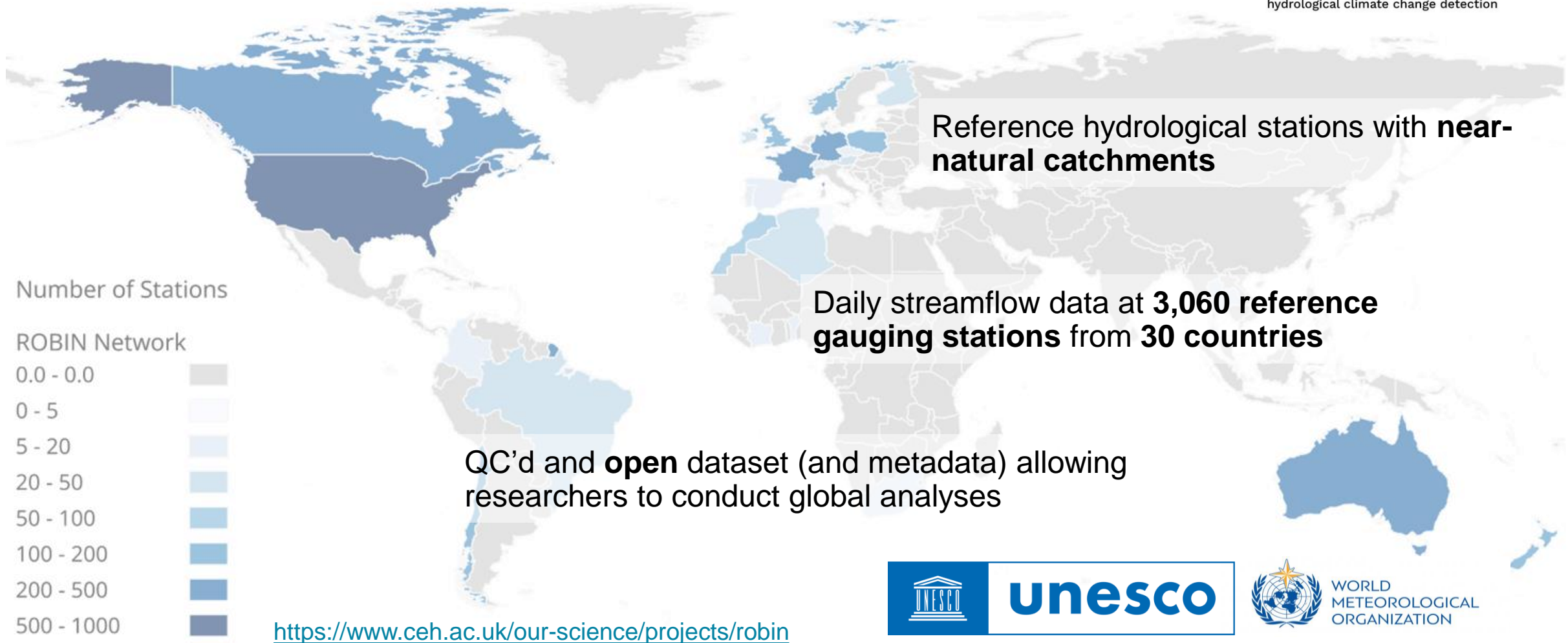


The ROBIN Network

Steve Turner et al. and the ROBIN Team (50+ authors!).
Submission to Nature Scientific Data SI by end May
Presented at EGU Vienna



Reference observatory of basins for international
hydrological climate change detection



Thank you

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