Querschnittsthema SDGs

WANDEL framework (SDG6 & SDG7)

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GRoW QT-SDGs

WANDEL Goal

ENERGY needs WATER needs ENERGY

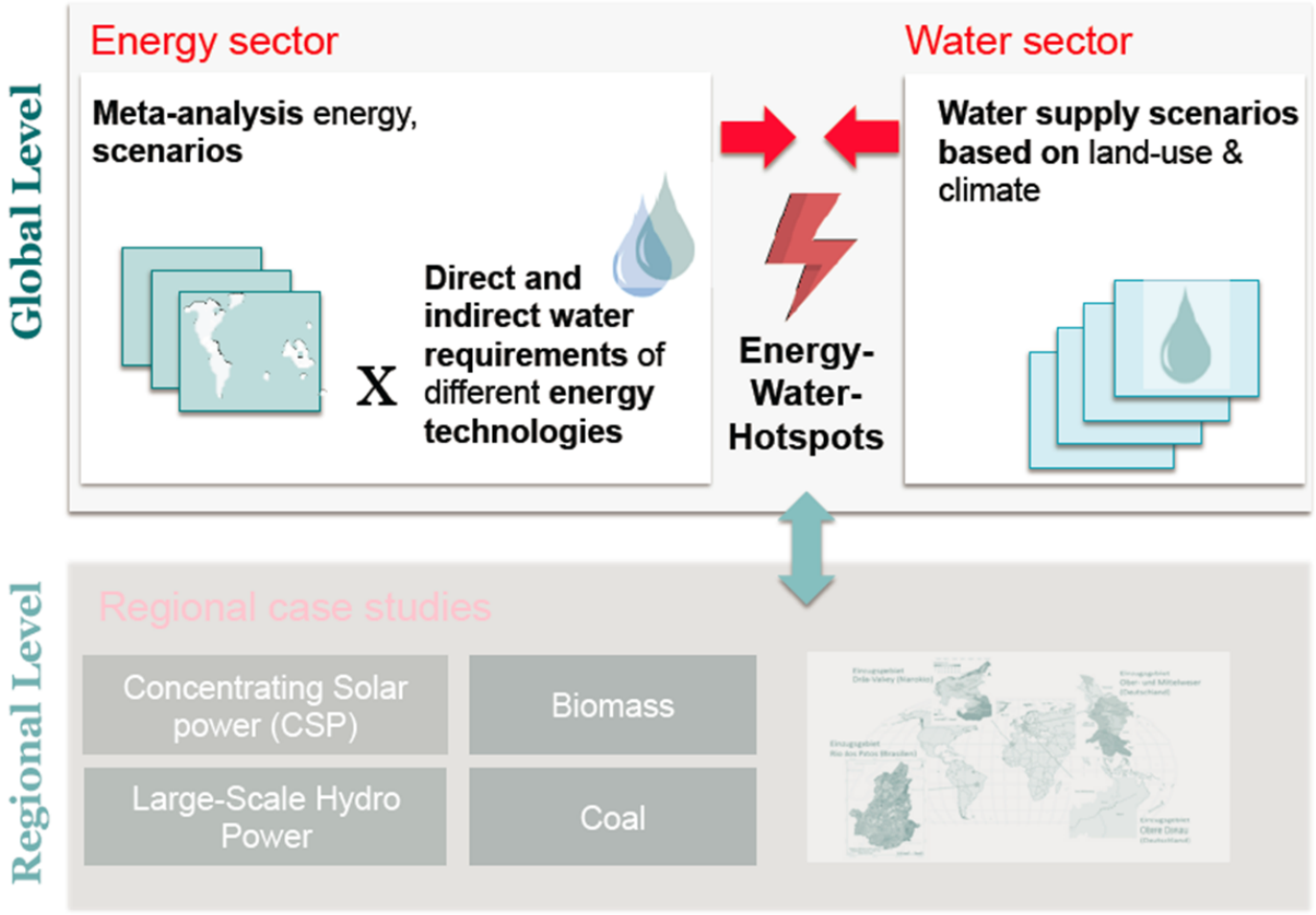
Will restrictions on water availability limit the use of KES and thus speed up the energy transition?

Can restrictions on water availability delay or even hinder the implementation of a global energy transition?

Governance WATER- & ENERGY-SECURITY

global → regional → global

Working across scales



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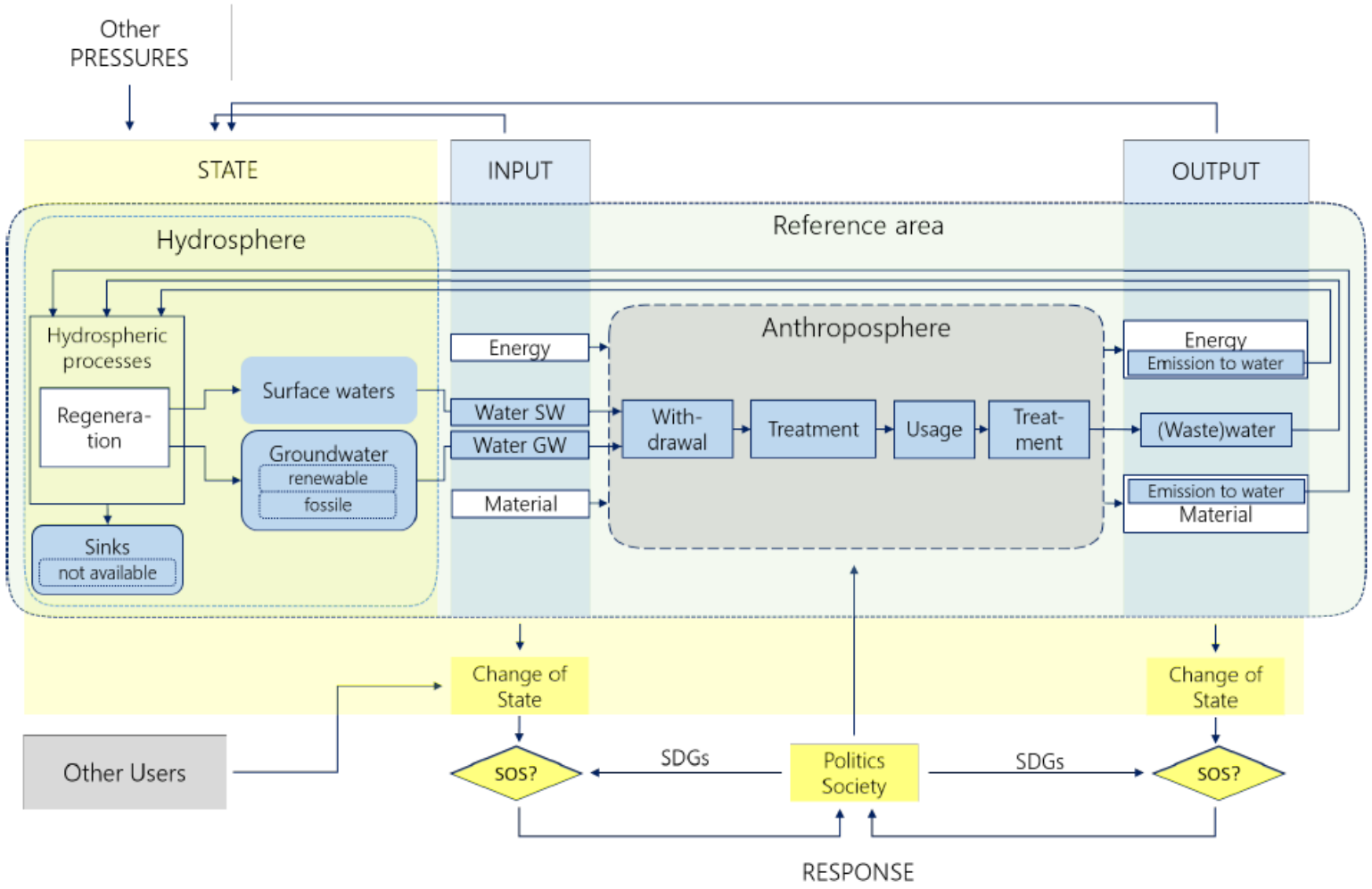
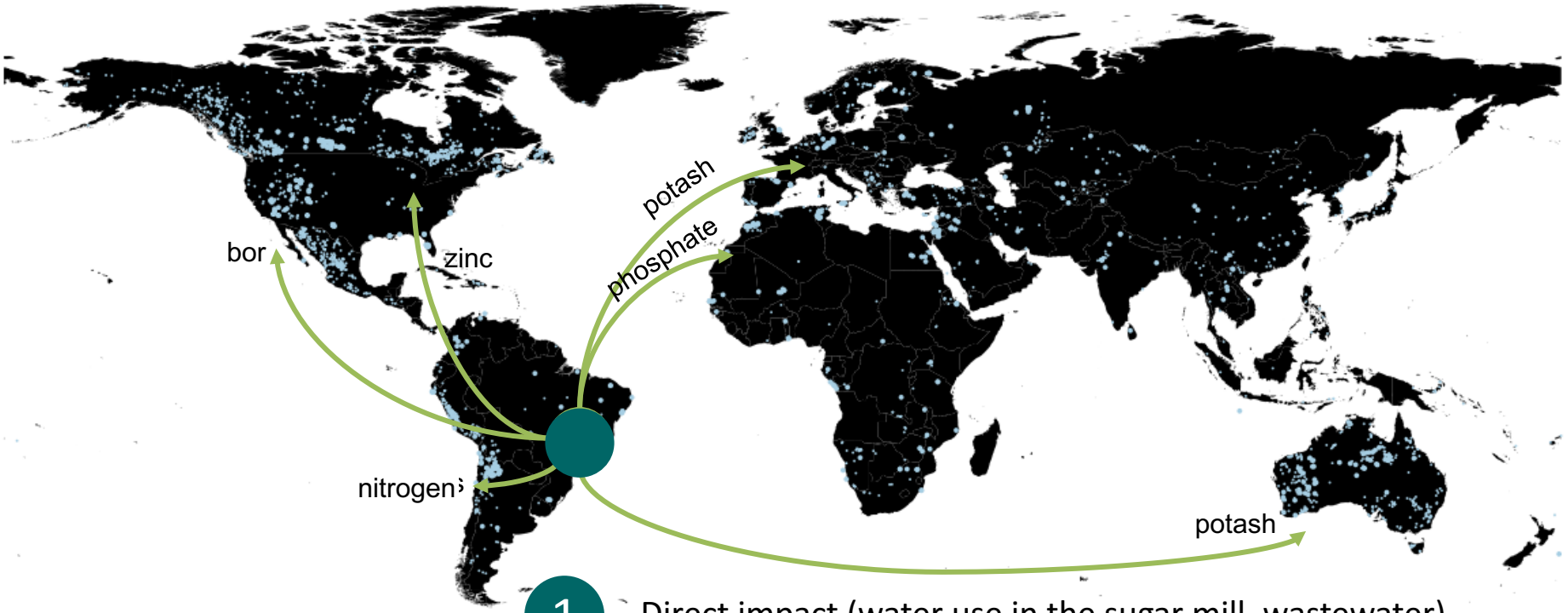
WANDEL Framework

- Central role: using the Water Footprint as indicator
  - Determining the direct impacts of energy systems on water resources (water quantity and quality)
  - Determining the indirect impacts of energy system on water resources along process chain (water quantity and quality)
- Additional indicator set to support the management of trade-offs and synergies to achieve the combined aims of water and energy security
- Energy-specific environmental impact study
- Scenario analysis (2030/2050)
  - Scenarios for: energy, technology, climate change, socio-economic development, land use change

Water Footprint



Future direct & indirect impacts, case study level



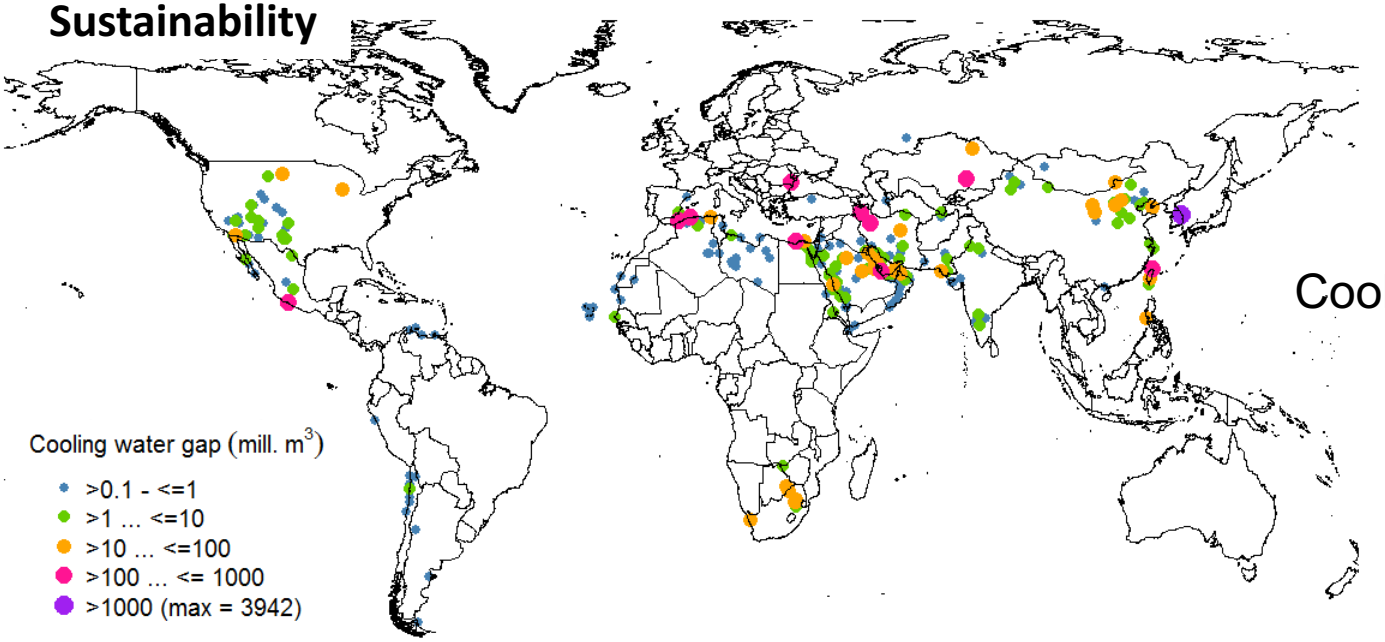
1 Direct impact (water use in the sugar mill, wastewater)

2 Direct impact (water use for sugar cane irrigation; water quality)

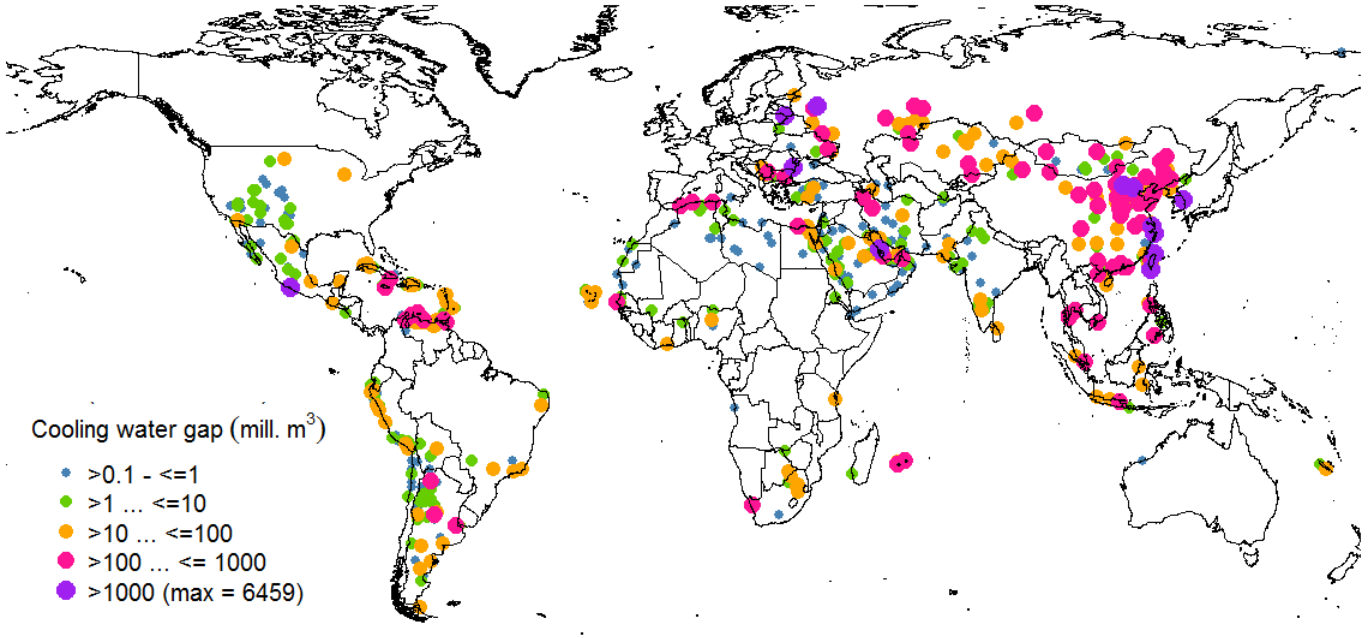
3 Indirect impact (water use for fertilizer demand, e.g. bor, nitrogen phosphate, potash, zinc, water use & water pollution

Future direct impacts, global level

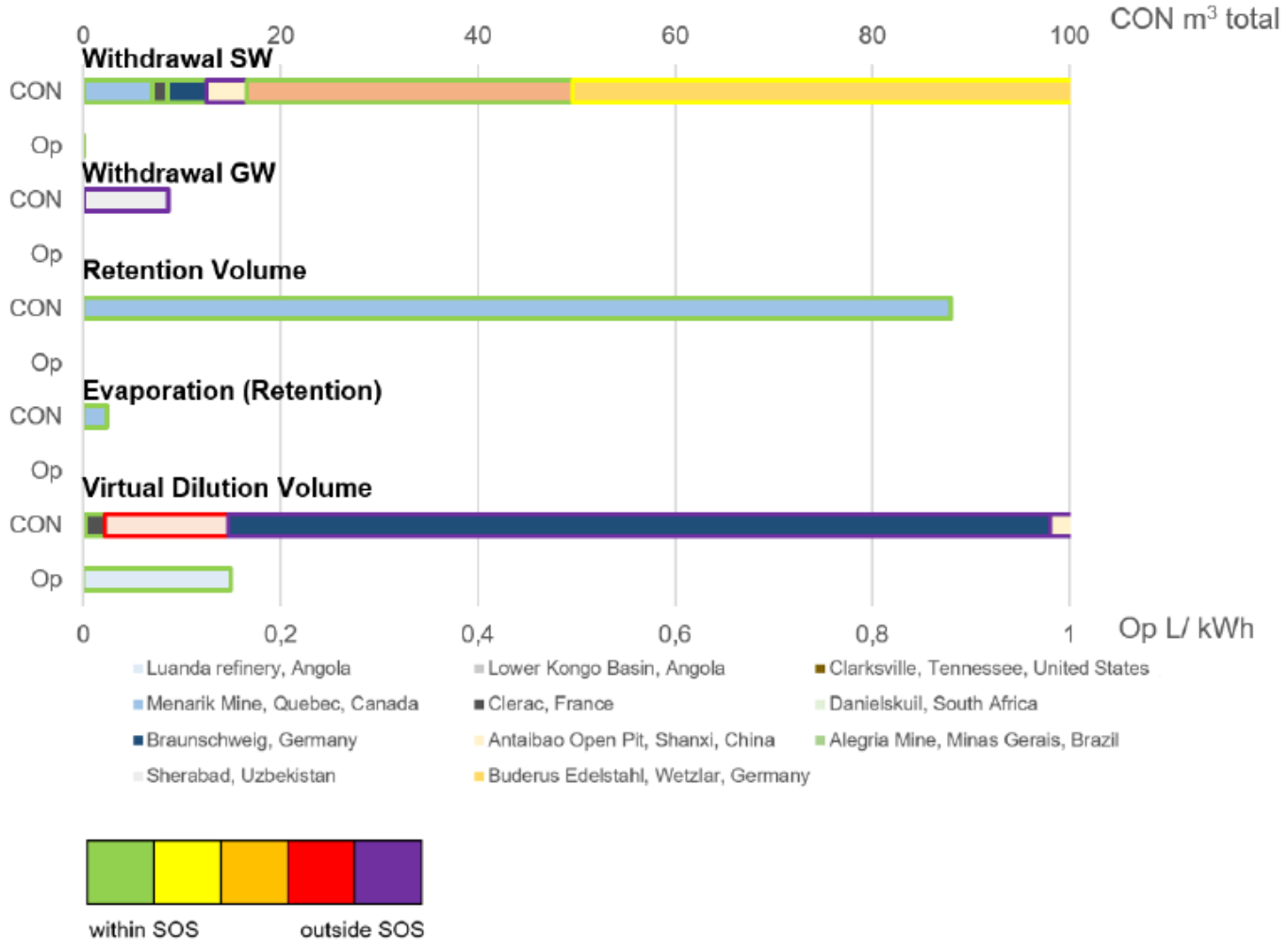
Sustainability



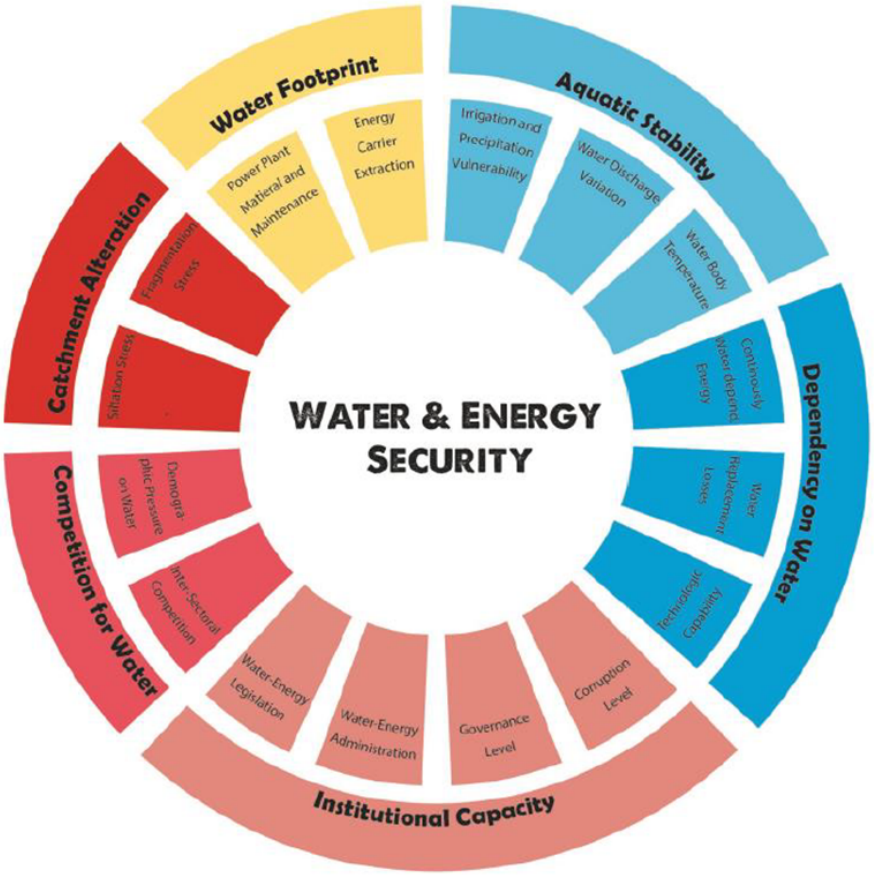
Cooling water gap (2050)



WF assessment



Indicator set to demonstrate trade-offs and synergies



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