# Water as a Global Resource

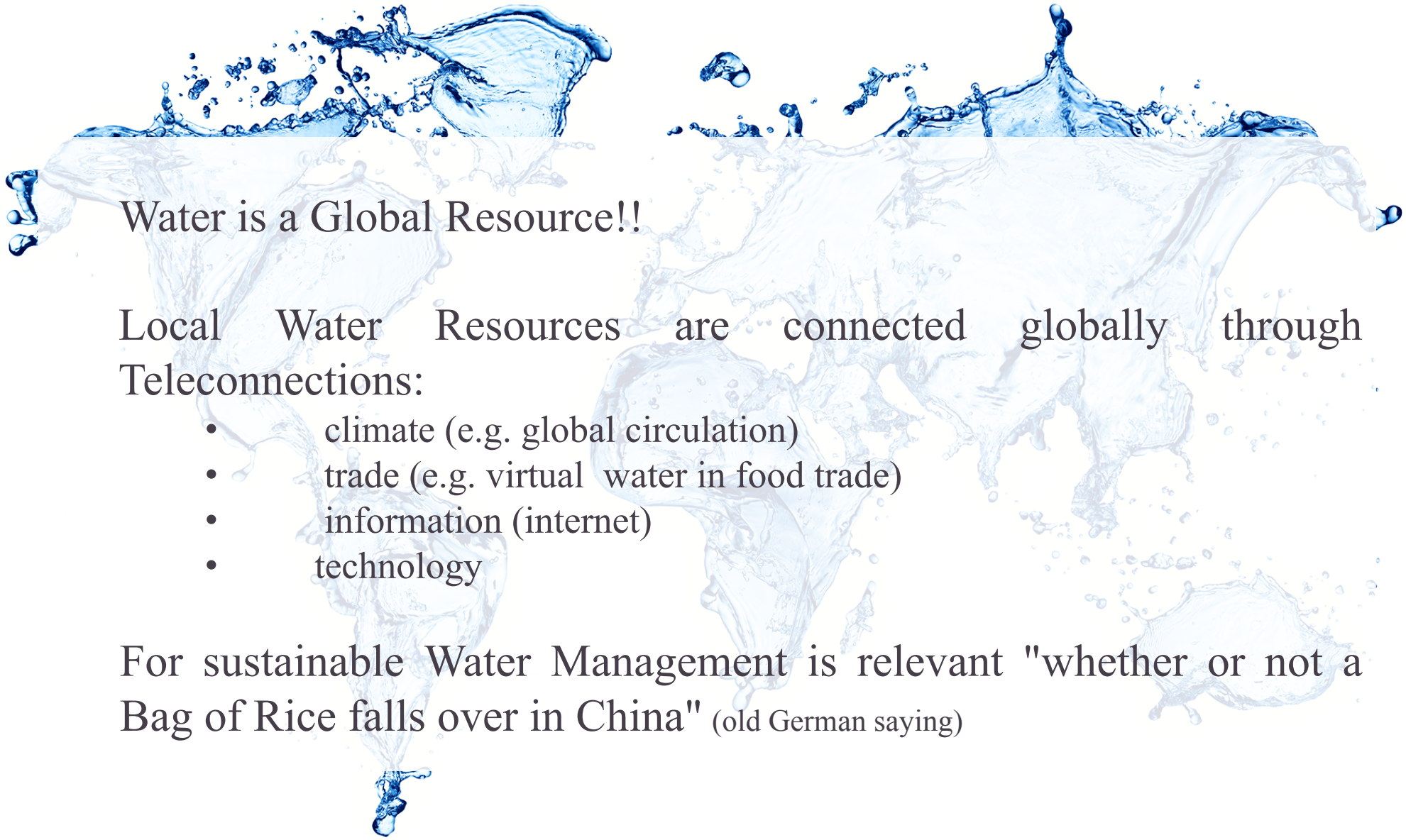
# Safeguarding water resources in a globalizing world

## Science-based Recommendations for taking Action in the Face of Water Resources and Economic Development

An Initiative of the Federal Ministry of Education and Research
GRoW WATER AS A GLOBAL RESOURCE
The Research Progam GROW - Water as a Global Resource

FONA Forschung für Nachhaltige Entwicklung
BMBF
Federal Ministry of Education and Research

# GROW Call to Action 2020



Water is a Global Resource!!

Local Water Resources are connected globally through Teleconnections:

- climate (e.g. global circulation)
- trade (e.g. virtual water in food trade)
- information (internet)
- technology

For sustainable Water Management is relevant "whether or not a Bag of Rice falls over in China" (old German saying)

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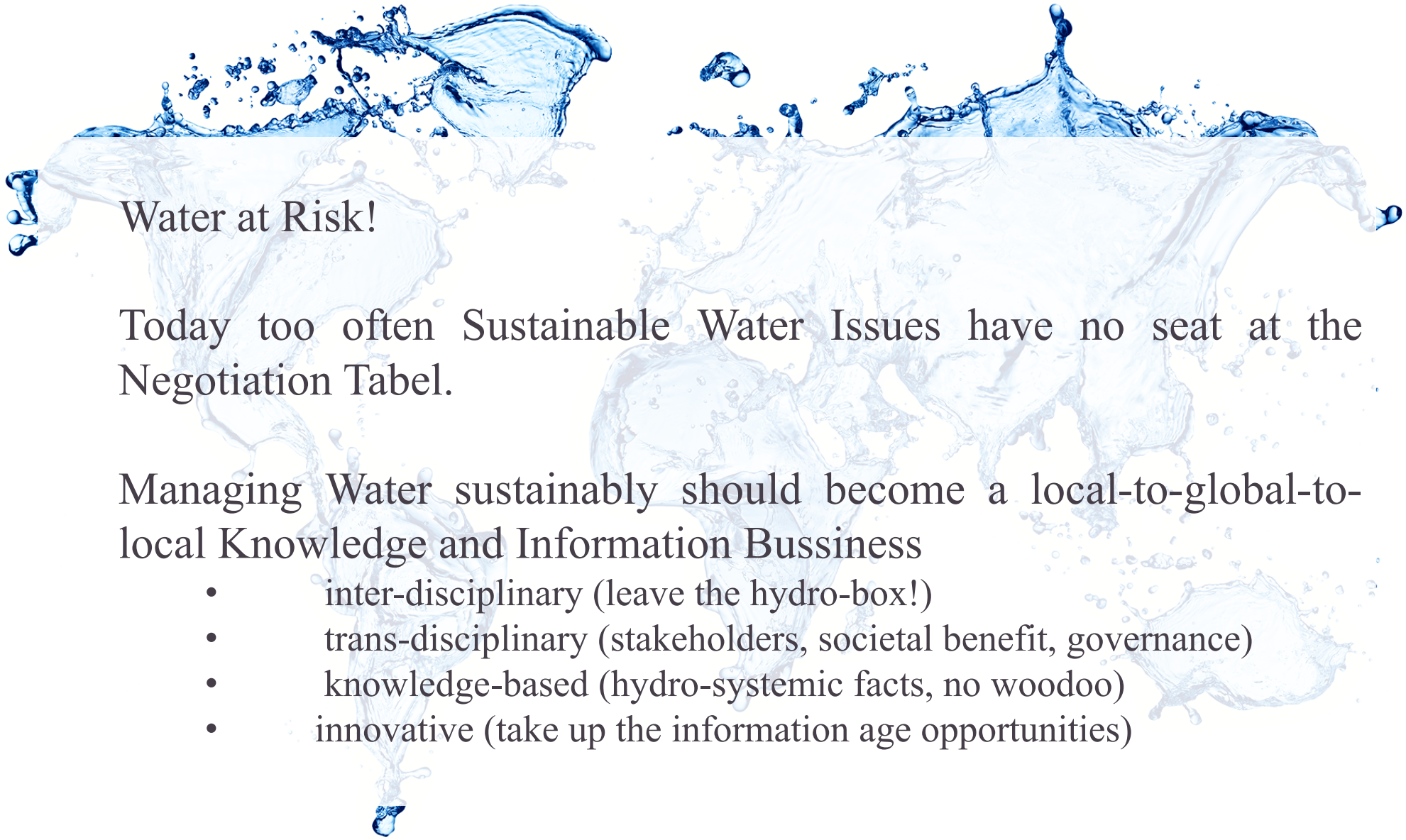

Water at Risk!

Today too often Sustainable Water Issues have no seat at the Negotiation Tabel.

Managing Water sustainably should become a local-to-global-to-local Knowledge and Information Bussiness

- inter-disciplinary (leave the hydro-box!)
- trans-disciplinary (stakeholders, societal benefit, governance)
- knowledge-based (hydro-systemic facts, no woodoo)
- innovative (take up the information age opportunities)

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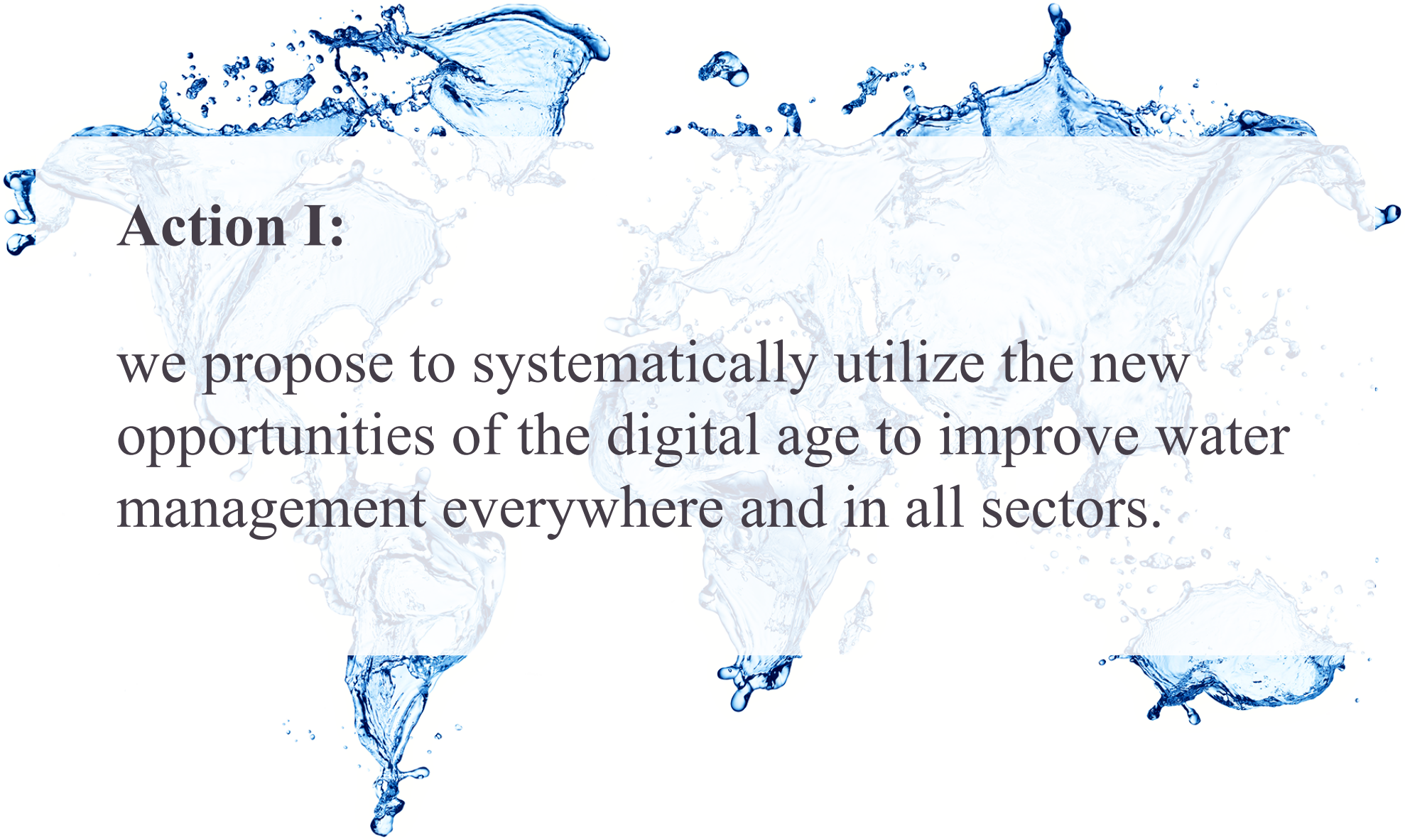

## Action I:

we propose to systematically utilize the new opportunities of the digital age to improve water management everywhere and in all sectors.

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## Action II:

we propose to integrate sustainable local water management into global supply chains.

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## Action III:

we propose to take action to strengthen and consequently implement transparent and science based water governance.

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## Science Recommendations

Fully develop *Big Environmental Data Science* for the Benefit of Sustainable Water Management from local to gobal

- satellite observations
- numerical multi-model simulations on all scales - digital twins
- intelligent sensor networks
- free and open data
- communication

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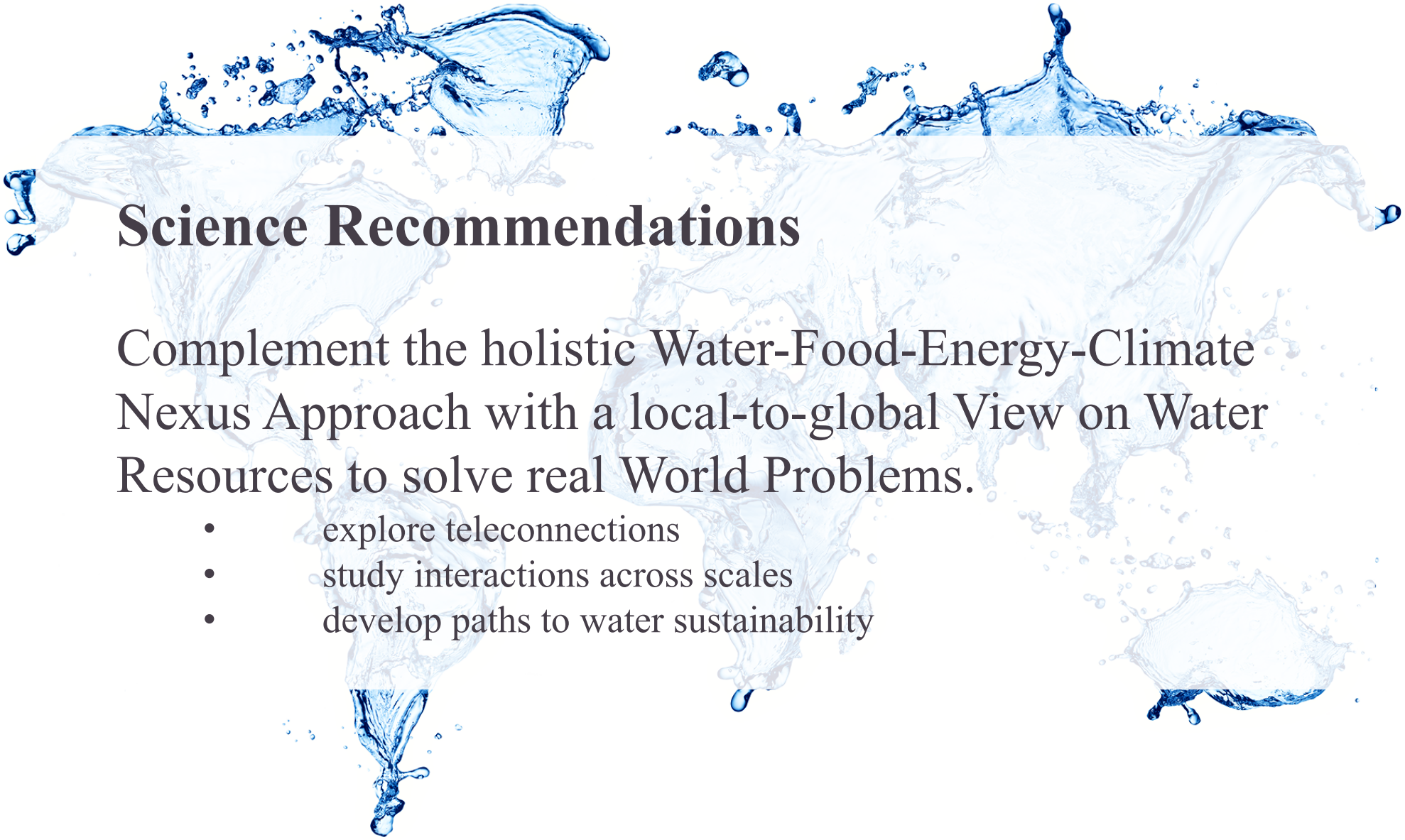

## Science Recommendations

Complement the holistic Water-Food-Energy-Climate Nexus Approach with a local-to-global View on Water Resources to solve real World Problems.

- explore teleconnections
- study interactions across scales
- develop paths to water sustainability

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## Science Recommendations

Explore ways to organize global supply chains and related trade in a way to support sustainable water use.

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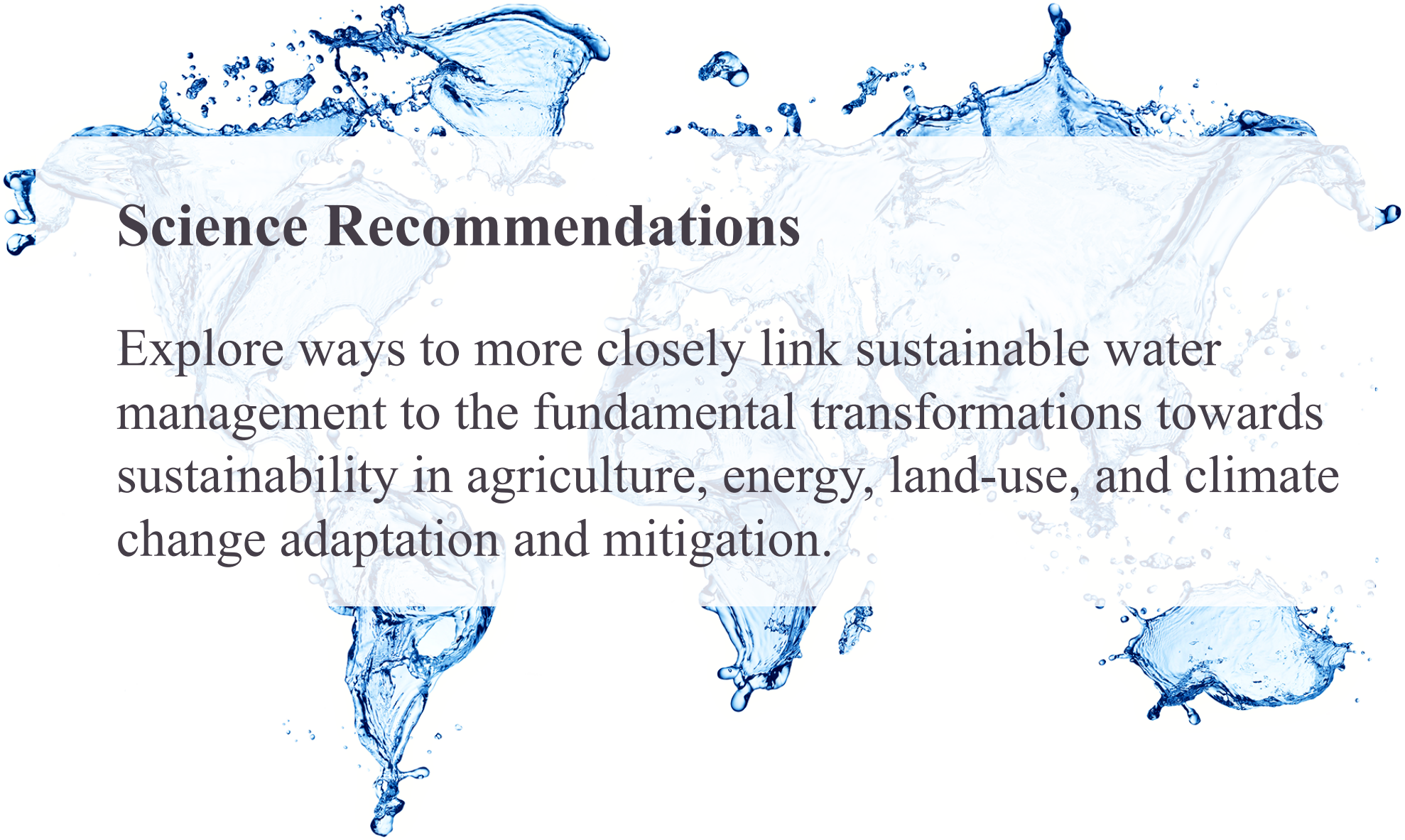

## Science Recommendations

Explore ways to more closely link sustainable water management to the fundamental transformations towards sustainability in agriculture, energy, land-use, and climate change adaptation and mitigation.