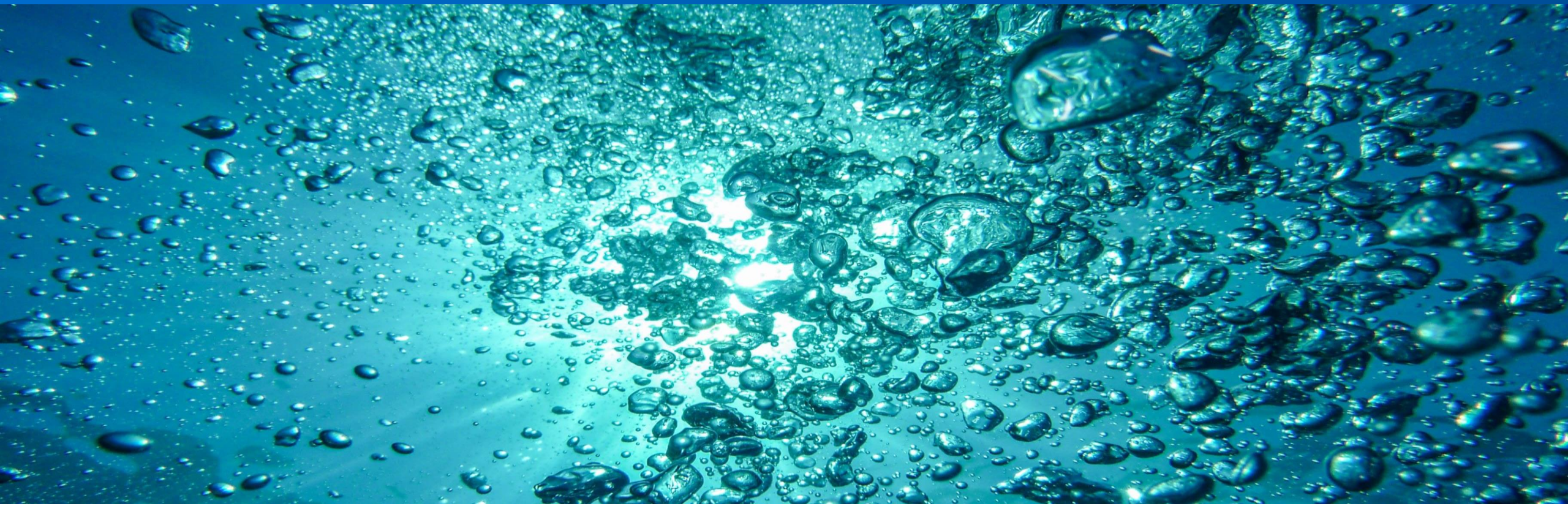
UNESCO's Intergovernmental Hydrological Programme
Strategic focus, 2022–2029



Susan Schneegans
UNESCO Office for the Pacific States, Apia,
20 February 2025

The UNESCO Water "Family"

3 IHP National Committees in the Pacific:

- **Papua New Guinea,**
- **Australia,**
- **New Zealand**

1 UNESCO chair in the Pacific in:
Water Economics and Transboundary Water Governance
based at Australian National University, Canberra

1 Regional Hydrologist:
UNESCO Office in Jakarta

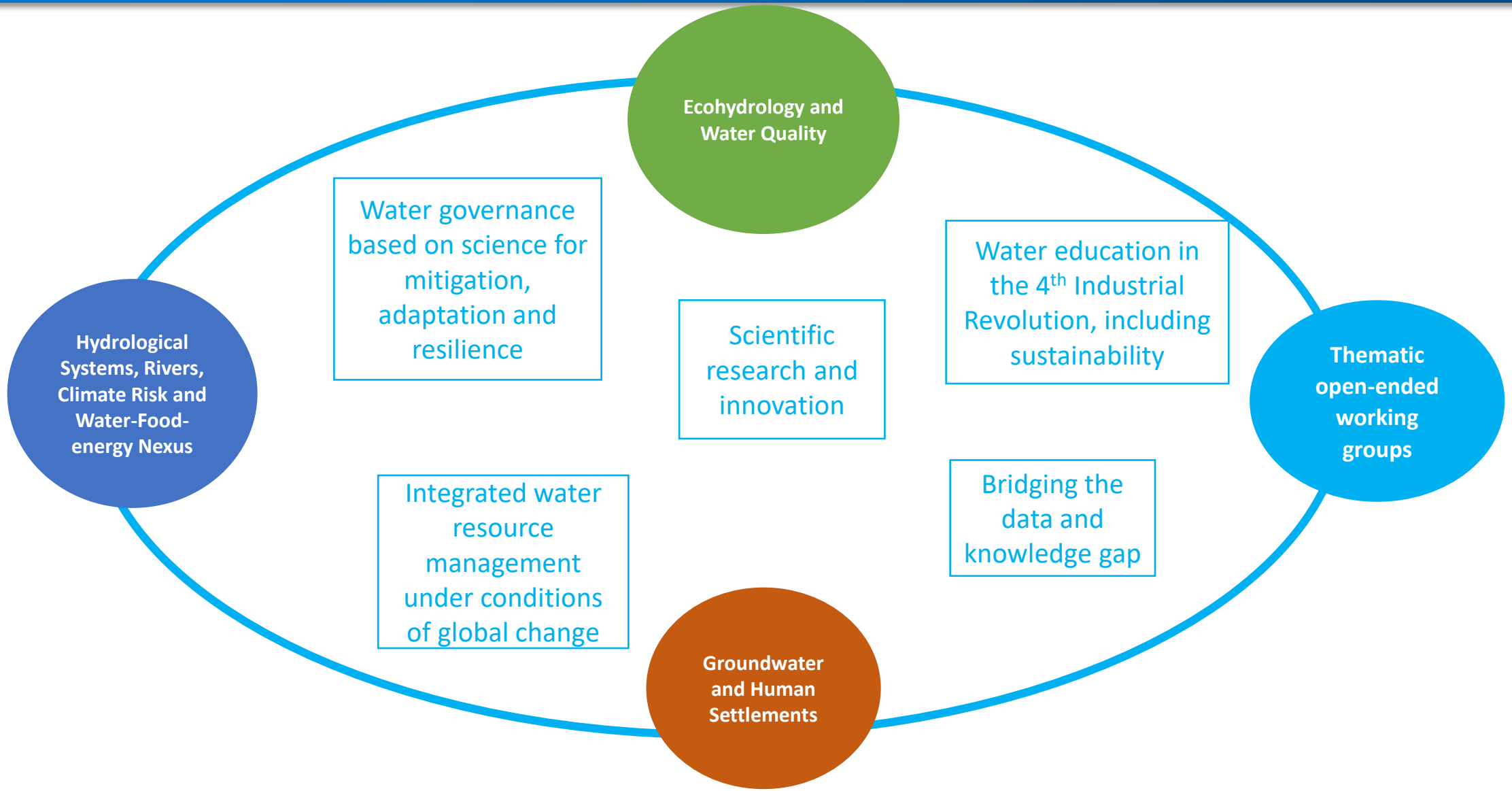
Science for a water-secure world in a changing environment

mobilizing international scientific cooperation to address challenges to water security through knowledge and innovation

strengthening science–policy interface to help decision-makers adapt their policies based on sound scientific evidence

organizing courses and workshops on water-related issues and providing resources and tools to ehnance water management and governance

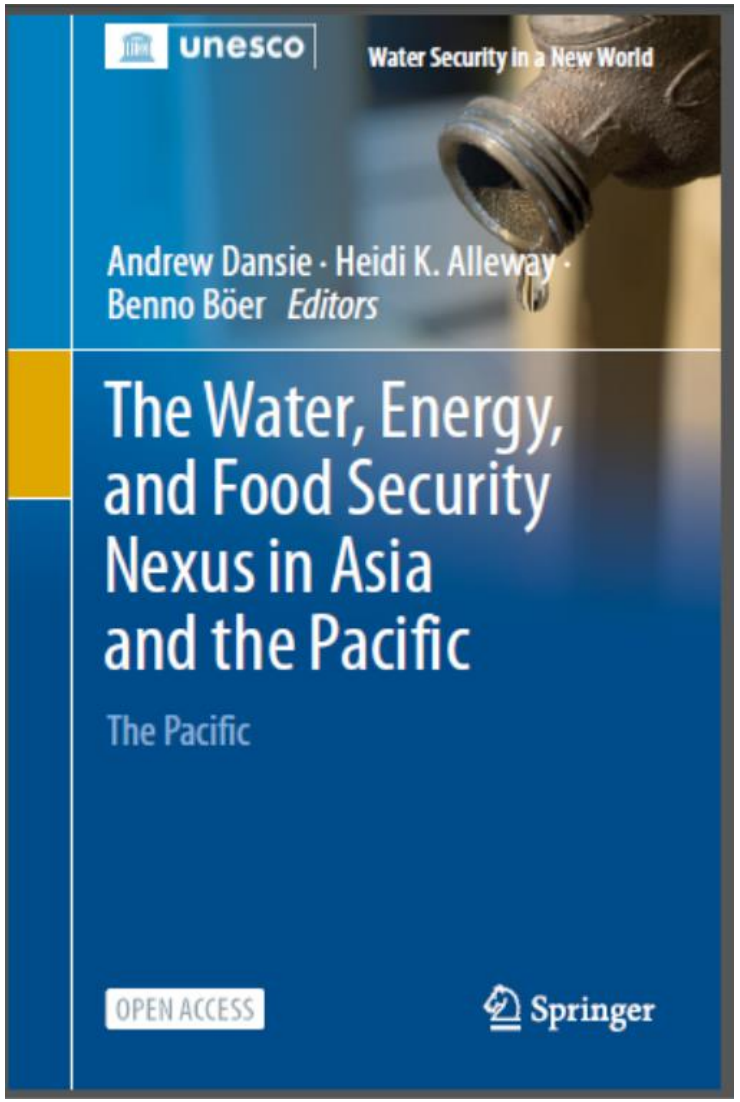
5 priority areas, 4 cross-sectoral working groups, 2022–2029



Available for download: Water, Energy Food Security Nexus (2024)

UNESCO has an open access policy for its publications:

https://link.springer.com/book/10.1007/978-3-031-25463-5

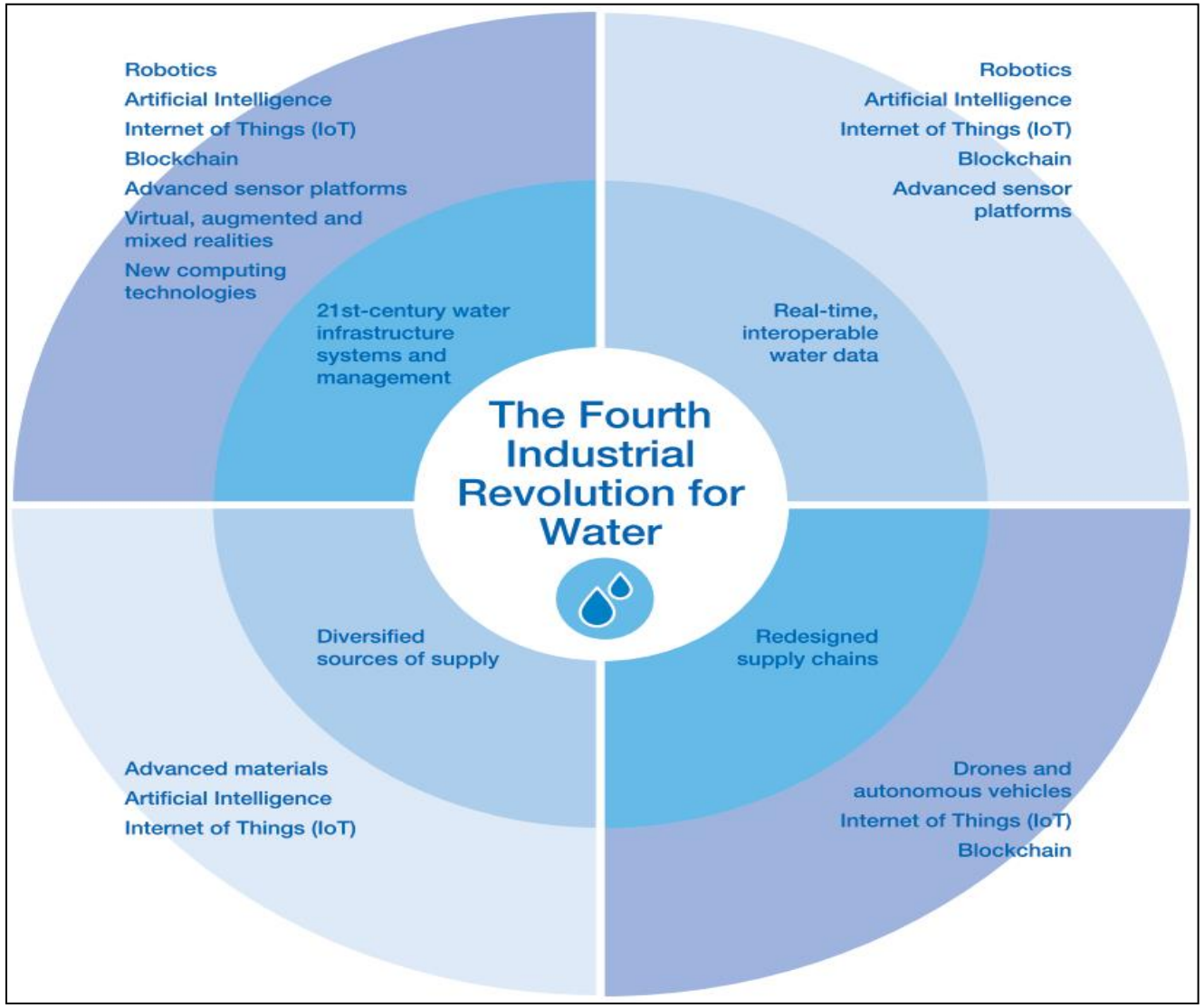


Hydrological applications of Industry 4.0 technologies for smart water management

- AI-based, real-time solutions, including **data-sharing tools** such as sensors, monitors/meters and geographical information systems.

- **AI-enabled modelling** on different scales can be used for forecasting, including for the development of early warning systems.
- **Internet of Things** can bridge the data gap, as this low-cost, low-power technology can be deployed in rural areas.

- **Internet of Things can be combined with machine learning and Blockchain** for smart urban water management.



Ecohydrology Demosite: Pelican Bay (Galápagos, Ecuador)

Major issues

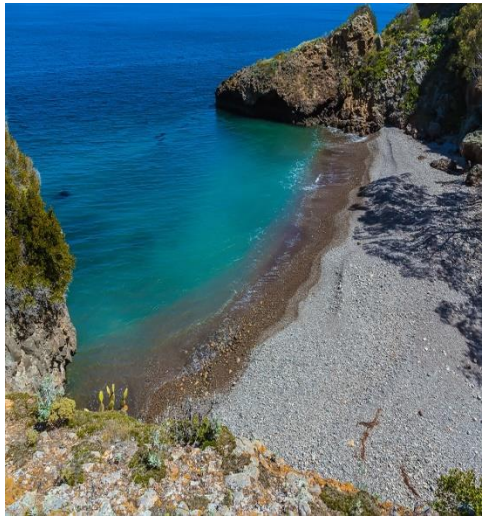
- Water quality affected by population increase and diffuse pollution from wastewater;
- Invasive species may jeopardize fog retention for aquifer recharge.

Main activities

- Monitoring and evaluation of water quality at key point.
- Quantification of available water in the aquifer.
- Training of farmers in ecohydrological techniques.
- Biological water treatment plant established
- Engagement with fish-gutting plant
- Elimination of invasive species from native ecosystems.

Main results

- 95% reduction in water contaminants from fish-gutting plant
- 45% of the Pelican Bay watershed conserved and under restoration
- Increased protection of *Scolesia spp* (IUCN Red List) thanks to agro-ecological programmes implemented with farmers



Asia–Pacific UNESCO ecohydrology demonstration sites

2	Australia	5	China
1	India	2	Indonesia
1	Malaysia	2	Pakistan
2	South Korea	1	Philippines

Basins/City/Urban : 5

Inland Wetlands : 8

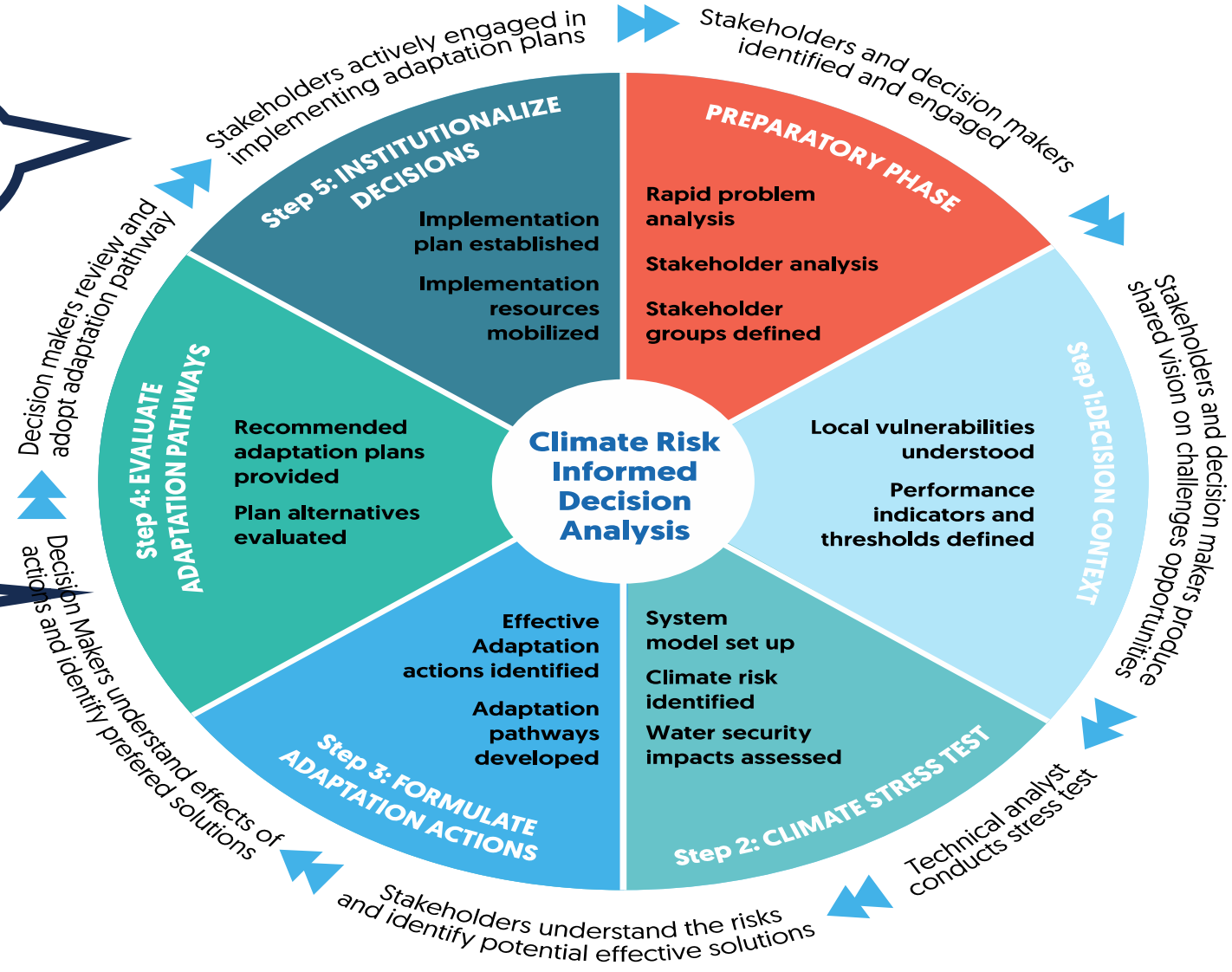
Rivers/Lakes : 3

Total = 16 | 5 new demosites in 2023

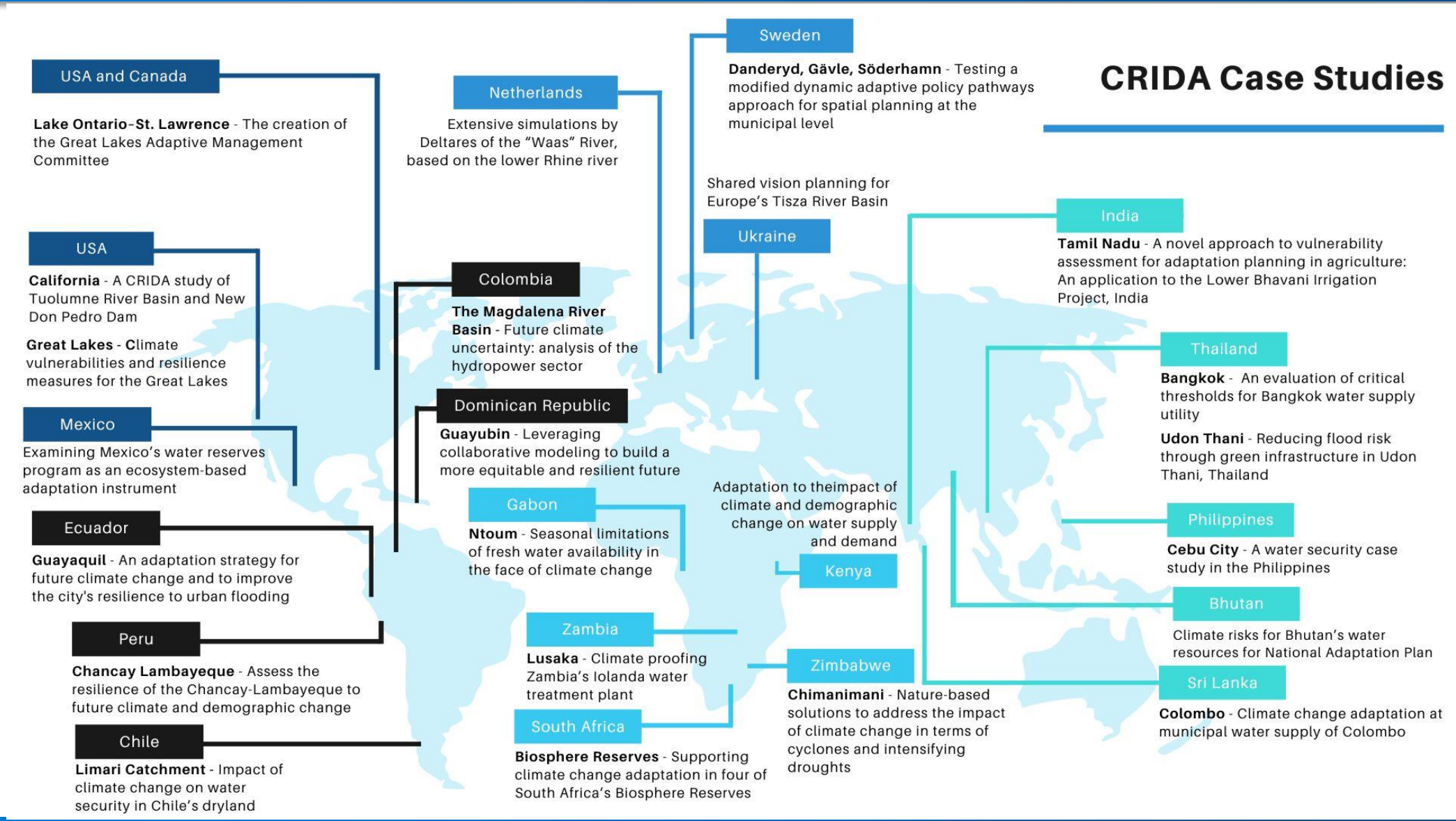
UNESCO's Climate Risk Informed Decision Analysis (CRIDA)

Since 2018, has been implemented in 20 countries

Methodology endorsed by World Bank and Green Climate Fund



UNESCO's Climate Risk Informed Decision Analysis (CRIDA)



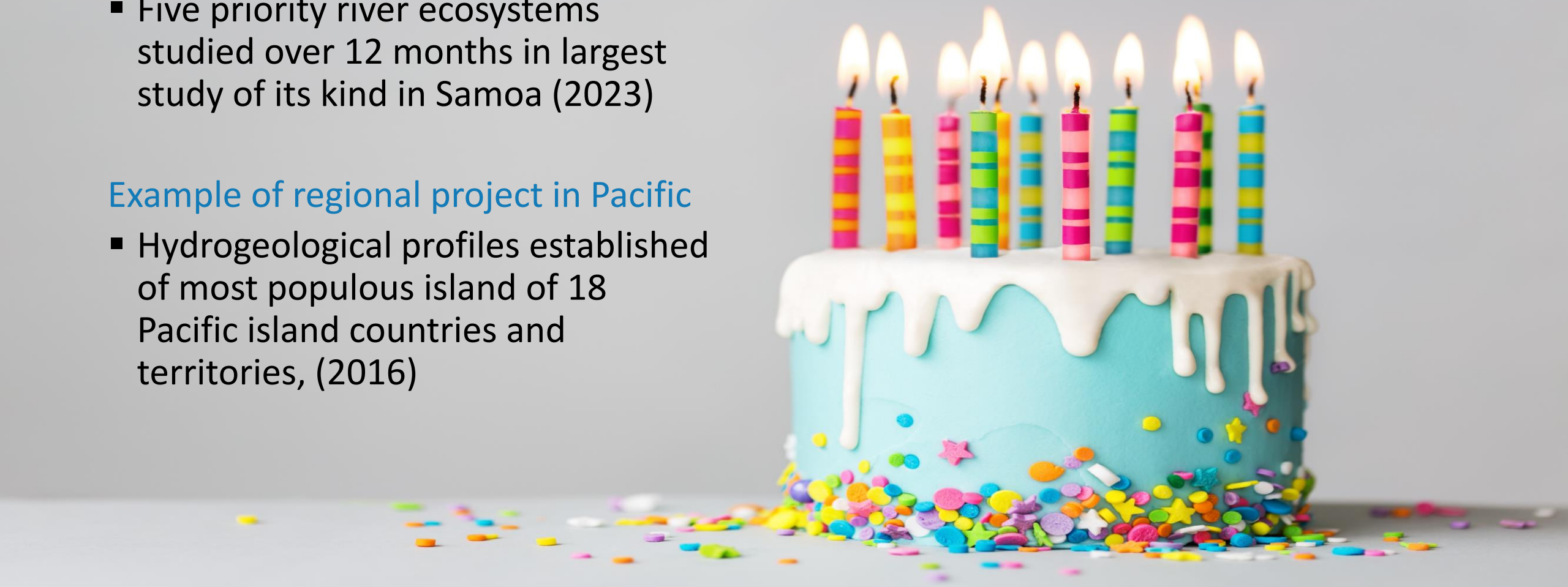
UNESCO’s Intergovernmental Hydrological Programme is 50!

Example of national project in Pacific

- Five priority river ecosystems studied over 12 months in largest study of its kind in Samoa (2023)

Example of regional project in Pacific

- Hydrogeological profiles established of most populous island of 18 Pacific island countries and territories, (2016)



National project: UNESCO supported first large-scale study of rivers on Savai'i

- Study conducted by Scientific Research Organisation of Samoa

- Findings and recommendations shared with relevant government agencies

Main Findings

Physico-chemical contamination

» Pesticides from farming and other development activities found in waterways

» Saltwater intrusion detected in certain freshwater springs – usually due to close proximity

Biological contamination

» Significant contamination was usually attributed to nearby developments such as farming or residential area

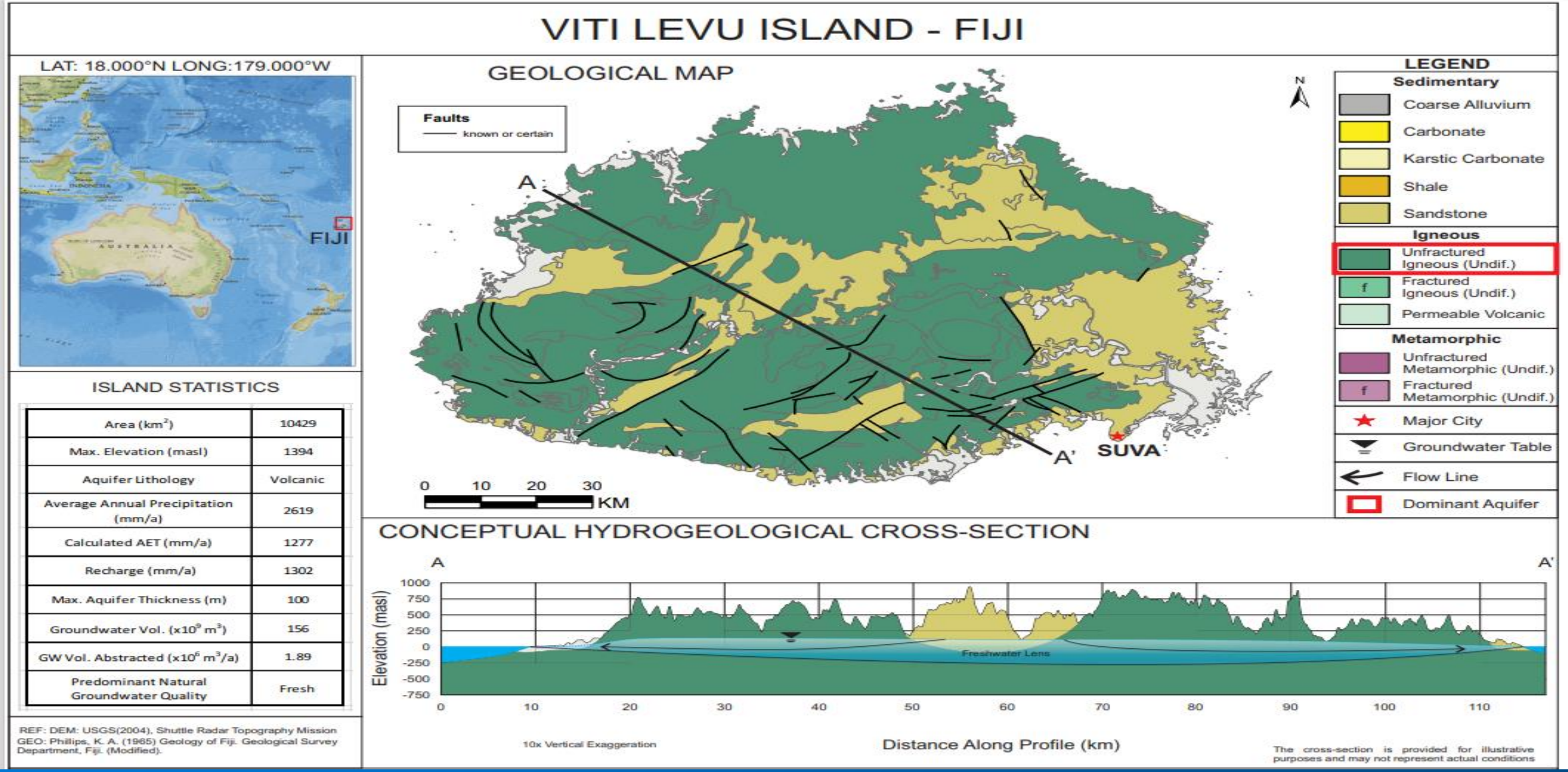
Climate change impact

» High levels of biological contamination corresponded with periods of heavy rainfall, indicating runoff into water systems as a major concern

Communities reducing contamination

Less contamination of spring pools maintained by community

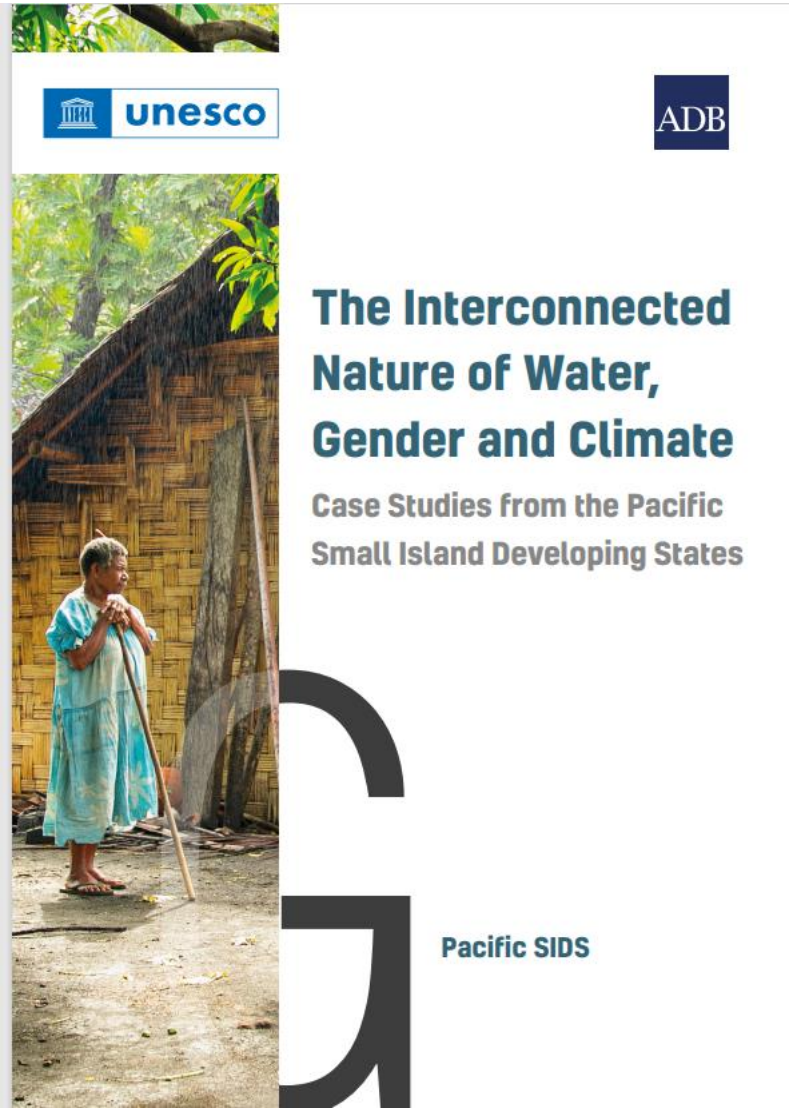
Regional project: Aquifers of 18 Pacific countries & territories mapped



New publication: water, gender and climate

Women have low representation in village water committees and water-related training, despite their prominent responsibility for household water management

UNESCO methodology for collecting sex-disaggregated water data used to compile these 4 case studies from Fiji, Kiribati and PNG.



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Narrowing gender gap among water professionals

- UNESCO launched **global call for action** in 2021: Accelerating gender equality in the water domain
- UNESCO leads **Multi-stakeholder Coalition for Water and Gender,** addressing gender gap in water profession. Its commitments part of *Water Agenda* adopted by UN Water Conference (2023).
- 28–31 January 2025: UNESCO co-organized with University of Pisa **first International Workshop on Water and Gender** for 50 women from government water agencies, researchers and practitioners from 18 countries. Meeting outcome to be published soon.

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Intergovernmental
Hydrological Programme

Thank you

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