CLIMATE, CONFLICT AND COOPERATION

Briefing of the General Assembly on Science-based Evidence in support of Sustainable Solutions

Trusteeship Council Chamber | U.N. Headquarters, New York | 07 February 2023

CLIMATE, CONFLICT AND COOPERATION

Presenters:

- Aaron Wolf *(Professor, Oregon State University; USA)*
- Dinara Ziganshina *(Director, Scientific Information Centre of the Interstate Commission for Water Coordination in Central Asia; Uzbekistan)*
- Charles J. Vörösmarty *(Professor, Advanced Science Research Center, City University of New York; USA)*

Respondents:

- Makane Moïse Mbengue *(Professor of International Law, University of Geneva; Switzerland)*
- Susanne Schmeier *(Professor of Int'l Water Law, IHE-Delft, The Netherlands)*

Water Conflict & Cooperation: Assumptions & Evidence

PREVAILING WISDOM:
"Issues over shared waters are not widespread"

EVIDENCE:

- 313 international basins
  - ½ land surface of earth
  - 40% of world population
  - 80% of freshwater flow
- 600 transboundary aquifers
- Lakes, wetlands
- Subnational issues

Water Conflict & Cooperation: Assumptions & Evidence

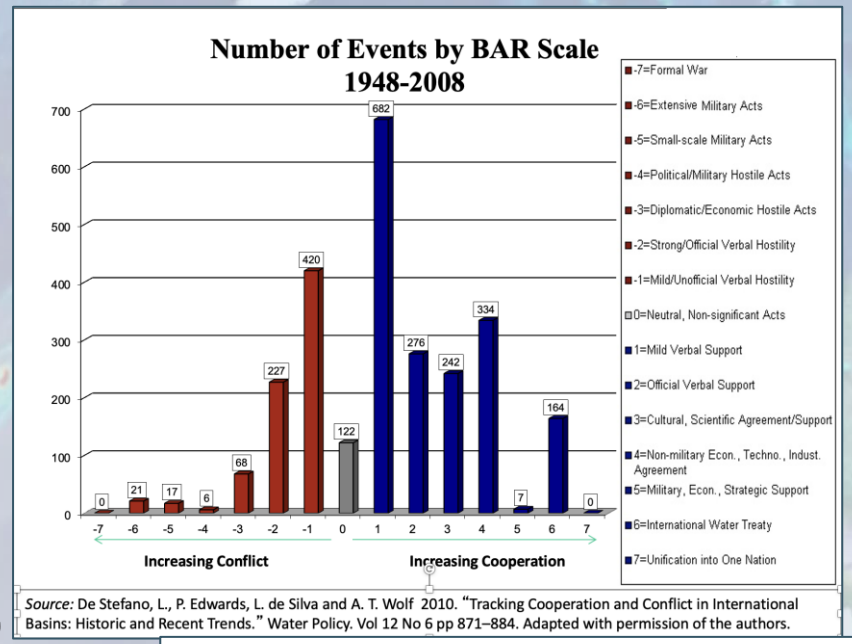
PREVAILING WISDOM:
"Conflicts over water are widespread, inevitable, intractable, and violent."

EVIDENCE:

- At the international scale:
  - 2/3% of interactions are cooperative
  - "Conflict" is mostly verbal (press and politicians)
  - 800 water-related treaties, generally adhered to, even through conflict

BUT

- Disputes seem to be increasing
- Not all cooperation is "good"
- Likelihood & intensity of conflict increases at sub-national level



Source: De Stefano, L., P. Edwards, L. de Silva and A. T. Wolf 2010. "Tracking Cooperation and Conflict in International Basins: Historic and Recent Trends." Water Policy. Vol 12 No 6 pp 871–884. Adapted with permission of the authors.

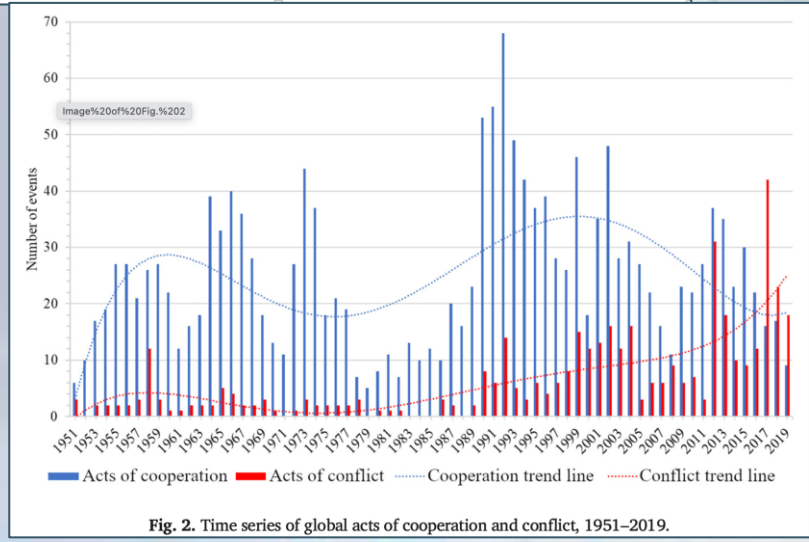


Fig. 2. Time series of global acts of cooperation and conflict, 1951–2019.

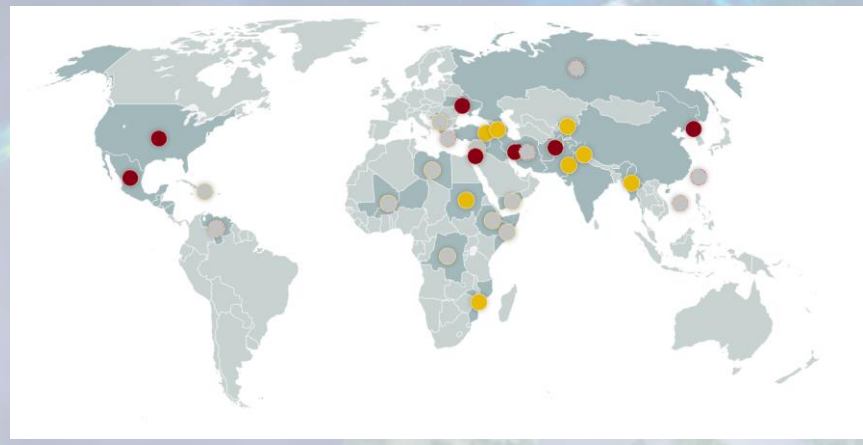
Source: Kåresdotter, E. et al. (2023) Water-related conflict and cooperation events worldwide. Science of the Total Environment, 868.

Water Conflict & Cooperation: Assumptions & Evidence

PREVAILING WISDOM:
"Water causes conflict, and climate change will make them worse."

EVIDENCE:

- Most indicators of conflict also indicate cooperation, eg. scarcity, floods, pollution
- Water & politics influence each other, positively and negatively
- Water can exacerbate tensions BUT can also create a pathway for dialogue and peacebuilding
- Not just another resource – can elevate conversations



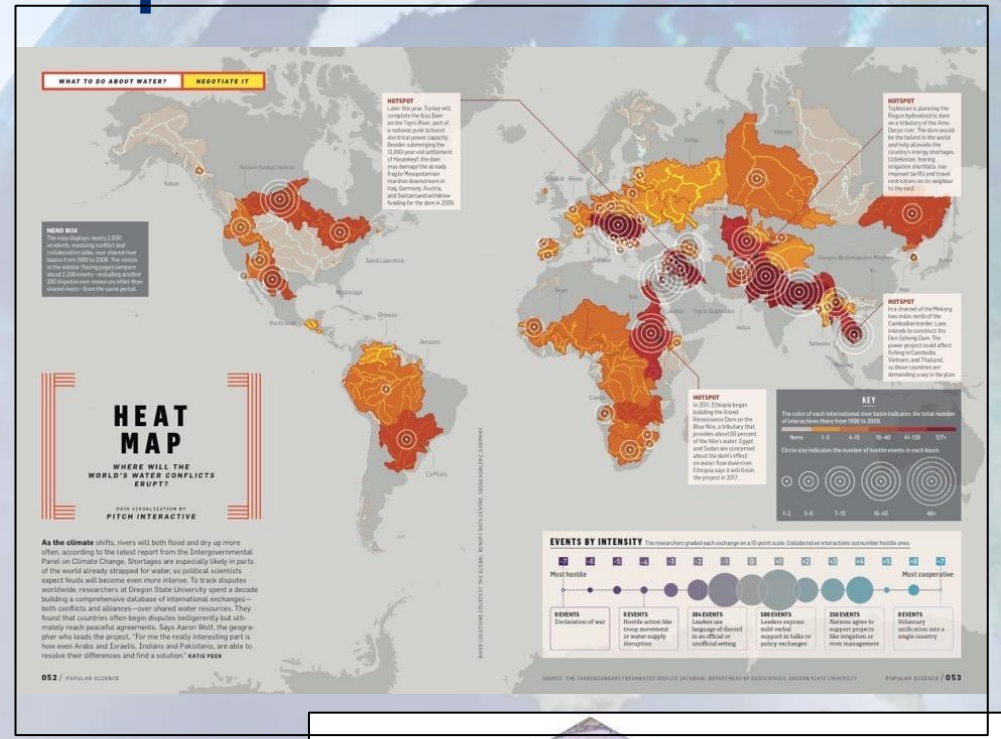
Sources: US Council on Foreign Relations. Preventive Priorities Survey, 2023; TFDD Water Diplomacy Database.

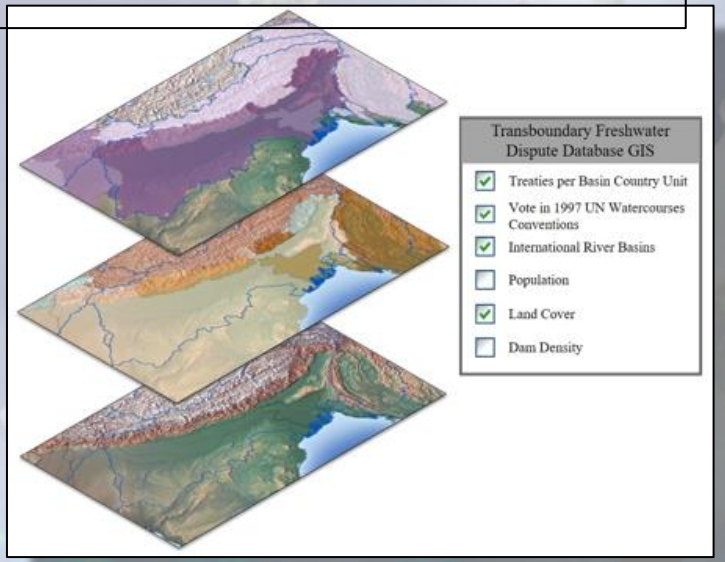
Water Conflict & Cooperation: Assumptions & Evidence

PREVAILING WISDOM:
"Conflicts are too complicated to monitor, and scarcity is the primary cause."

EVIDENCE:

- Depends on the rate of change in a basin *AND* its institutional capacity:
  - Sudden changes: upstream infrastructure, political change
  - Enhances resilience: robust agreements & RBOs, good working relations, healthy economies





Water Conflict & Cooperation: Assumptions & Evidence

RECOMMENDATIONS:

At the international level, monitoring and early warning are fairly straightforward, as are mitigation strategies:

- better conversations earlier
- resilient agreements & institutions
- poverty alleviation to enhance water security
- improved environmental and climate management

LAW AND DIPLOMACY

"Water is a challenging issue for international law"

Philippe Sands QC, 2010

- Shared waters pose **serious challenges to legal regulation**, given the need to address complex issues in a peaceful and sustainable manner
- **International law responded** to these challenges by identifying substantive and procedural rights and duties of states (*the normative frame for any actions*)
- **Substantive norms** of equitable and reasonable utilisation and no significant harm are context-dependent due to the need for a flexible all-encompassing approach
- Sound **procedural system** of cooperation is the must (*information, consultations, monitoring, assessment, notification, joint bodies*).

LAW AND DIPLOMACY

Joint bodies

- **Diversity and fit for purpose:** 120+ river commissions, diverse functions
- **Ability to transform**: Congo-Oubangui-Sangha Basin; Senegal, Lake Chad
- **Strength in technical expertise**: US-Canada, Mekong, Aral Sea; vulnerability assessments and adaptation strategies in Danube, Rhine, Mekong, Lake Victoria
- **Settling controversies**: Indus, US-Mexico
- **Challenges:** representation, scope, mandate and procedures to meet contemporary standards, funding, personnel, decreasing scientific capacities.

LAW AND DIPLOMACY

Integrated solutions through a multilevel approach

- Shared waters are subject to a **multi-level legal framework** at universal (*UN Watercourses Convention, UNECE Water Convention, conventions on biodiversity, desertification, wetlands, UNCCC, Draft Articles on the Law of Transboundary Aquifers*), regional (*e.g. UNECE MEAs, SADC*), basin levels (*e.g. Indus, Mekong, Columbia)*
- **Multiplicity of treaties** contributed to improved management and protection of shared waters and requires **more rigorous actions** from states and treaty bodies in increasing synergies and complementary **implementation**

LAW AND DIPLOMACY

Implementation and Compliance

- **Institutional** platforms and tools
- **Reporting** and monitoring
- Implementation and compliance **committees** under MEAs
- More UN member states are **encouraged** to
  - join water conventions and take part in their work
  - foster national implementation – the most advanced practices comes from national level (EIAs, minimum flows, etc)

LAW AND DIPLOMACY

Dispute prevention and resolution

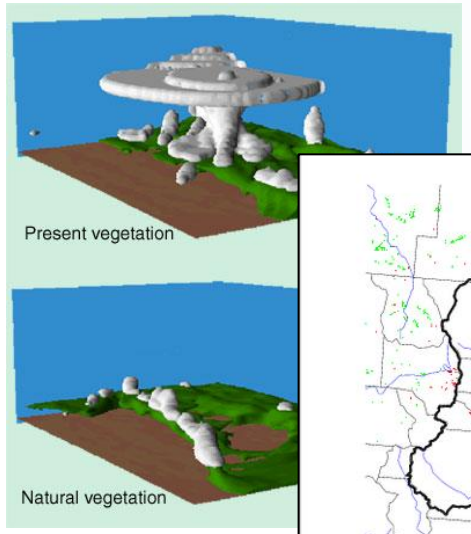
- A **multistep approach** to seek a solution:
  - **Joint institutions** or expert groups
  - **Diplomatic** means: negotiation, good offices, mediation, conciliation
  - A neutral **expert** (*Indus*) or an impartial **fact-finding** commission (*UN WC, Sava*)
  - **Judicial** through arbitration or courts (*ICJ: Gabčikovo-Nagymaros, Pulp-Mills and Silala; Kishenganga Arbitration*)
- **Need** for more effective integration of scientific experts in judicial settlement.

LAW AND DIPLOMACY

Recommendations on law and diplomacy

- International law should be better **used and further developed** in line with diplomacy to strength cooperation over shared waters through:
  - **Developing legal norms** (past practices and forward-looking norms, incl. on groundwater, virtual and atmospheric water)
  - **Building normative communities** (well-developed treaty regime & synergies)
  - **Enhancing legal consciousness and public concise** (socialization and mutual learning through joint education, research, professional development)
- It is essential to **raise the profile of water** in UN and other global agenda (*Statements made by the EECCA countries at the UN GA in 1992-2020 illustrate low attention*, http://cawater-info.net/expert-platform/eecca-un-ga-1992-2020_e.htm)

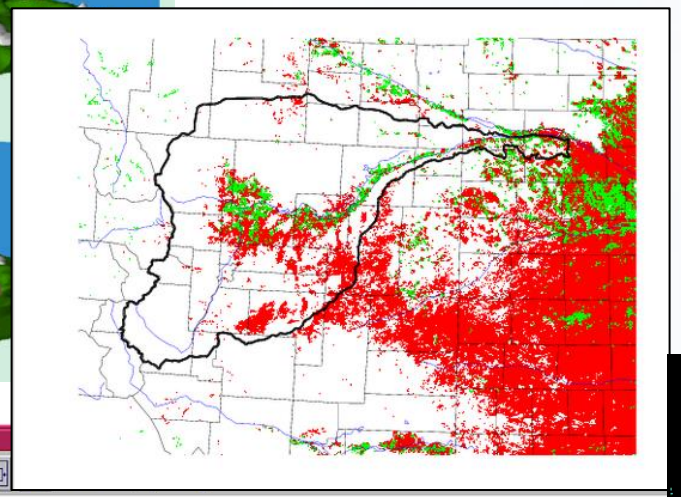
CONTRIBUTIONS FROM THE EARTH SCIENCES

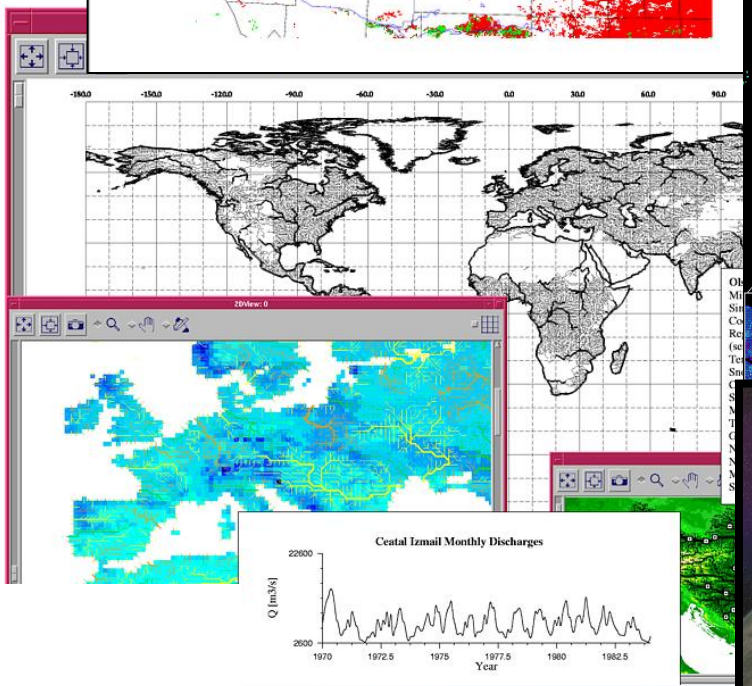


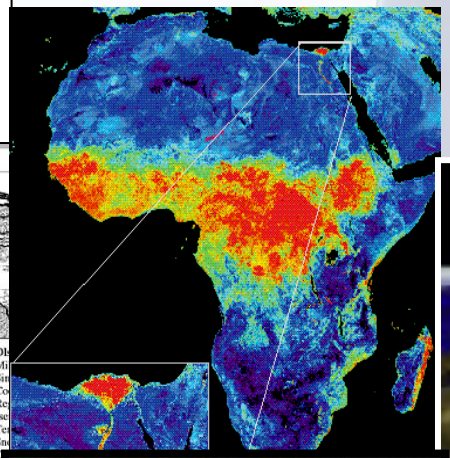
Approaching a Unified View of the Global Hydrologic Cycle

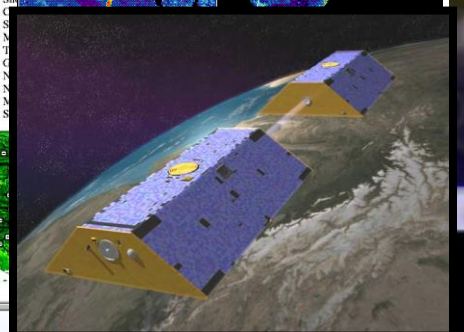
- Operational satellite-based monitoring of the hydrosphere
- Geo-spatial physical, biochemical, human activities data
- Simulation models and data analytics

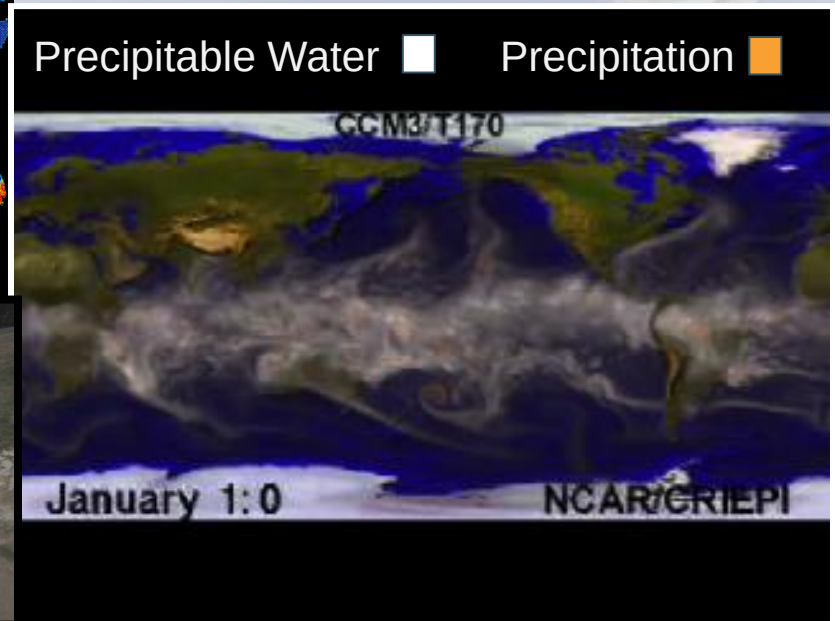
…are creating new ways to view the "global water crisis"…to inform policy, improve management and foster cooperation











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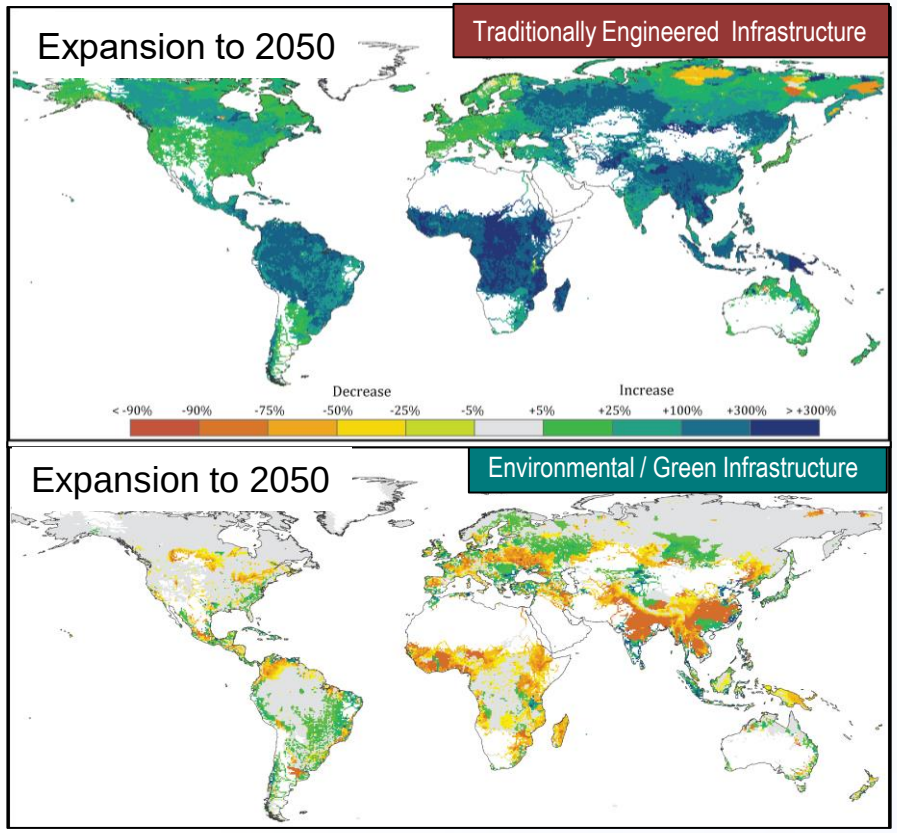
TWO MAJOR “INFRASTRUCTURES” WILL DETERMINE THE ATTAINMENT OF FUTURE WATER SECURITY AND POTENTIAL FOR DISPUTES



THESE OPERATE MOST EFFICIENTLY AND COST-EFFECTIVELY WHEN CO-MANAGED FOR SUSTAINBILITY

From: Vörösmarty et al., Global Env. Change, 2021

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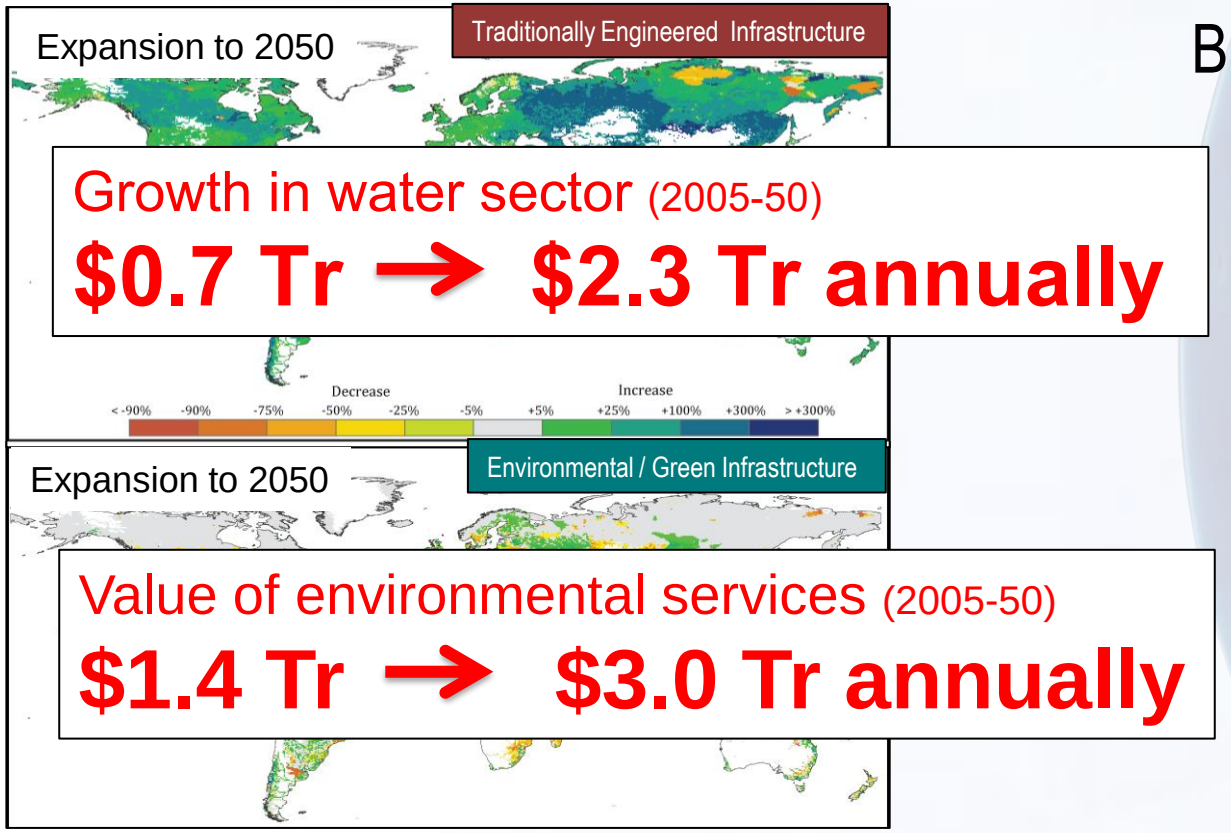


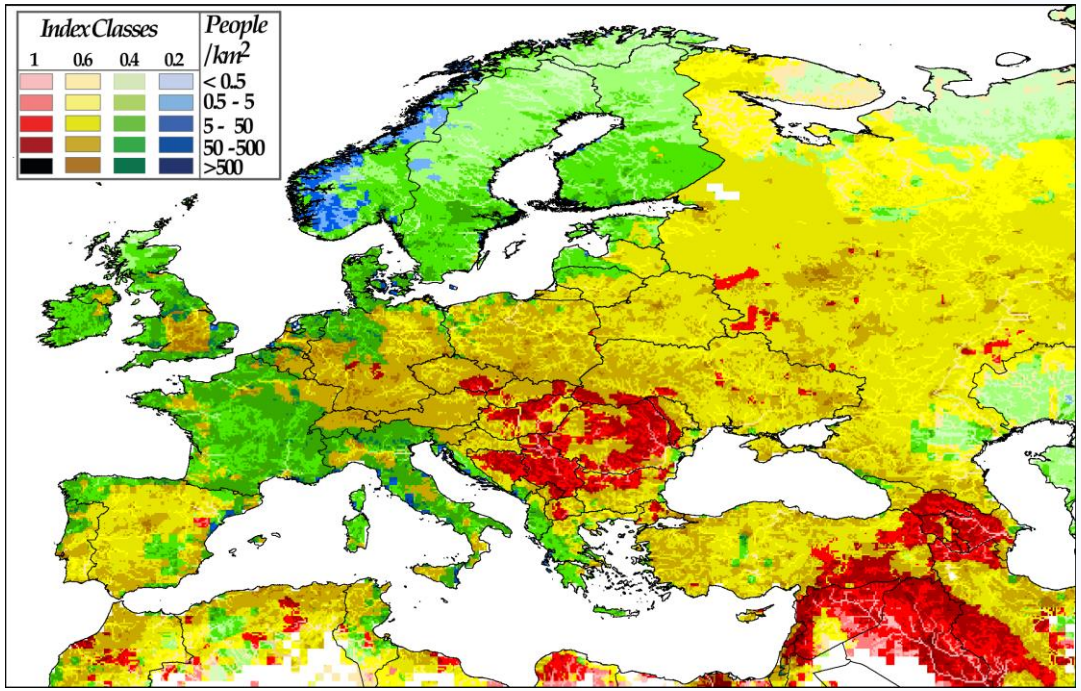
From: Vörösmarty et al., Global Env. Change, 2021

BUT WILL OPERATE IN THE CONTEXT OF

- Financial investment capacity
- Environmental stewardship
- Climate shocks
- Transboundary complexity
  Upstream/downstream contrasts in populations, socio-economics, institutions
- Technical capacity

CONTRIBUTIONS FROM THE EARTH SCIENCES

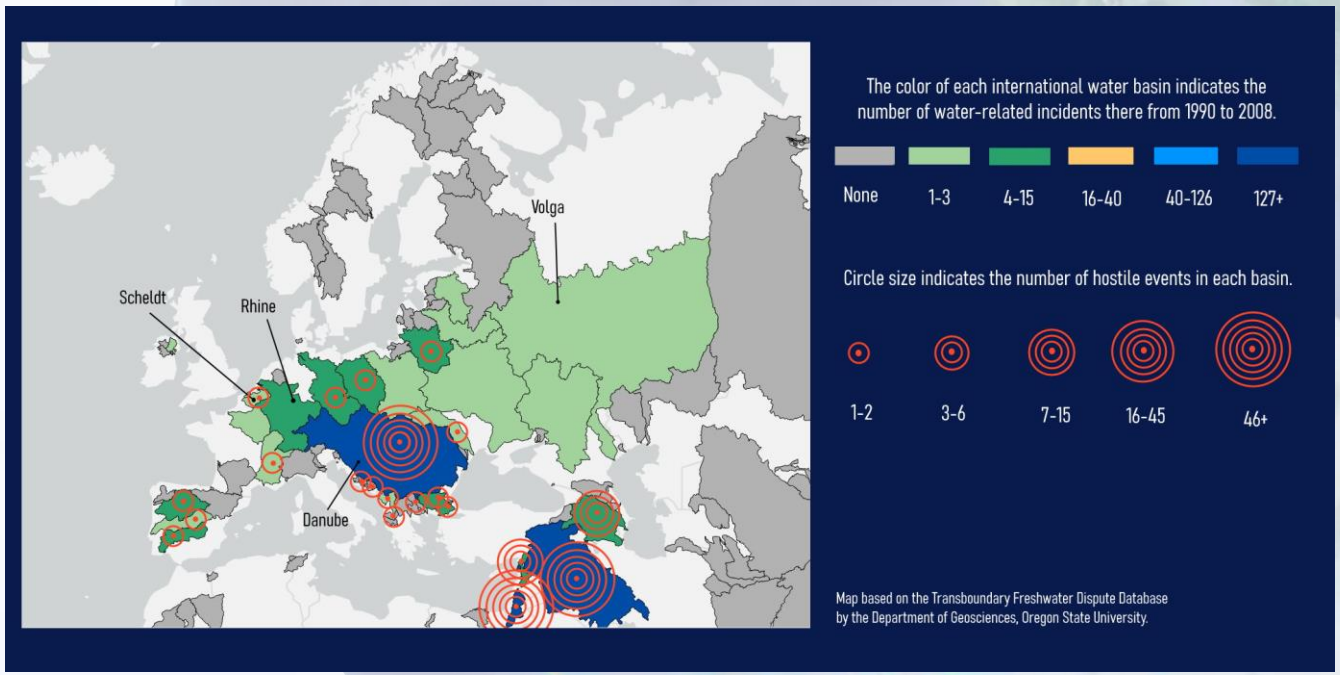
WATER-CONFLICT INDEX



Low (blue)
Low-Moderate (green)
Moderate (yellow)
High (red)

- Climate-environment-demographic-institutional factors all contribute
- This is a context mapping / “spatial hypothesis” in need of testing

THE OBSERVATIONS



From: Vörösmarty et al., Hungarian J. of Hydrology, 2021

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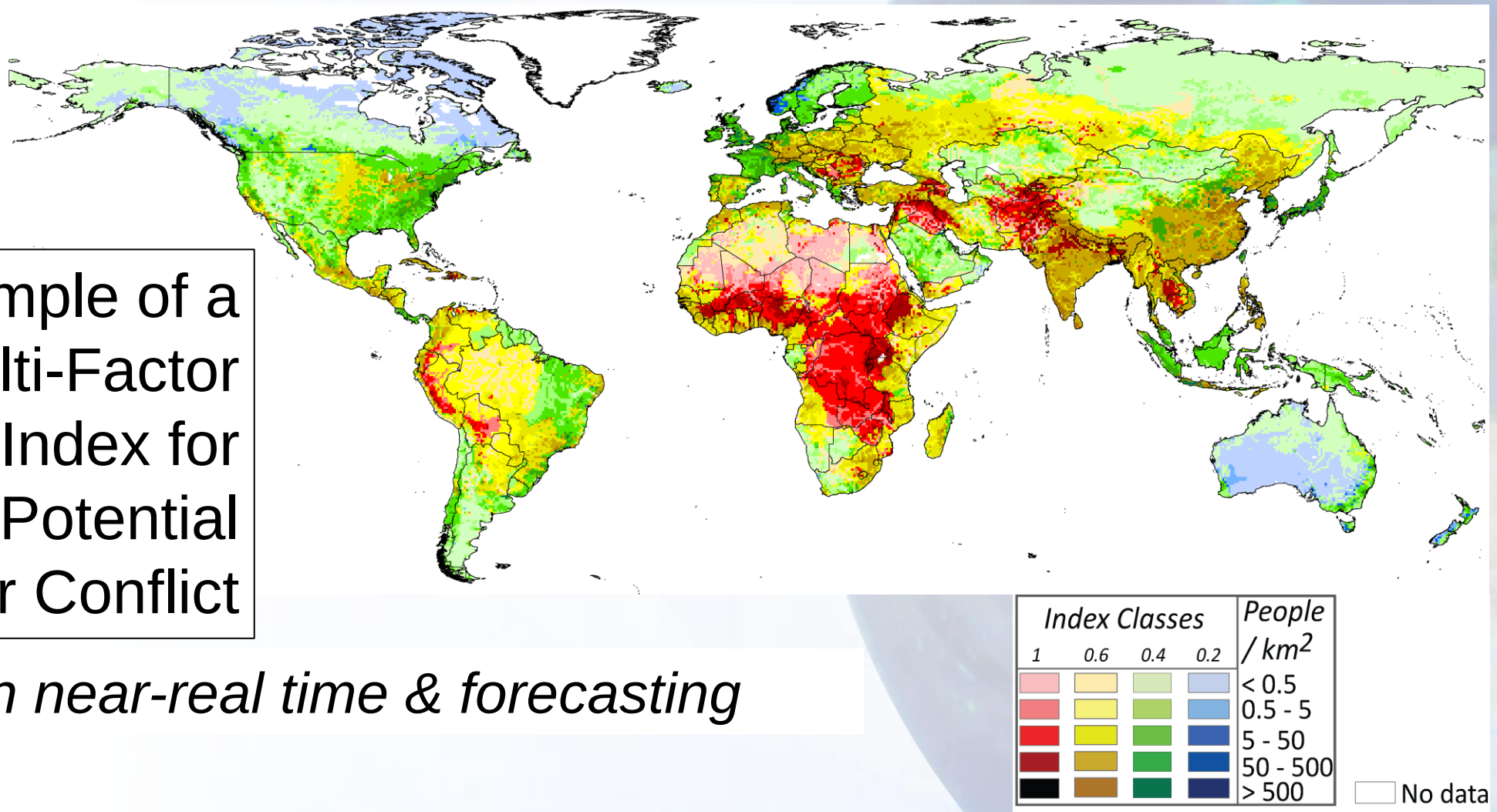
Population served by water source area under potential conflict level:
low (blue), low-moderate (green), moderate (yellow), and high (red)



Example of a Multi-Factor Index for Potential Water Conflict

in near-real time & forecasting

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Recommendation for Science-Based Water Conflict Detection and Avoidance

- Expand *monitoring* and *research* into the state-of-the-resource, its governance, and its links to environmental integrity....in near real-time
- Establish the:

Global Collaboratory for Water Science and Diplomacy

- **A collaboratory** → networked facility with real and virtual components
  - Supports rich and recurring human interactions on a common topic area
  - Spans distance and is ideal for transcontinental cooperation
  - Provides systematic data & toolkits for consensus research & policy formulation

(Adapted from Science of Collaboratories, University of Michigan)

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Recommendation for Science-Based Water Conflict Detection and Avoidance

- Expand *monitoring* and *research* into the state-of-the-resource, its governance, and its links to environmental integrity
- Establish the:

Global Collaboratory for Water Science and Diplomacy

....a science-based meeting grounds for UN member states and agencies, water researchers, policymakers, practitioners & educators to create a *integrated* knowledge hub for improved water and climate diplomacy

Respondent Comments: Prof. Dr. Makane Moïse Mbengue

- Strengthen the science-policy interface in water diplomacy (in particular, with respect to climate change impacts)
- Ensure effective integration of experts in water diplomacy (in particular, in relation to water disputes)
- Develop mechanisms that provide technical assistance with regards to implementation of water instruments (e.g., Implementation Committee of UNECE Water Convention)
- Use more modeling of water variability in water diplomacy
- Enhance capacity-building in developing countries in relation to science-based water diplomacy

Respondent Comments: Prof. Dr. Susanne Schmeier

- Worldwide, cooperation over water prevails over disagreements; however, risks of disagreements is on the rise due to climate change, economic pressures…
- Water often drops of the agenda of decision-makers as other, seemingly more urgent crises take over
- But water is at heart of many of these crisis and the world remains in a crisis response mode instead of shifting towards true resilience
- While cooperation beyond the absence of conflict generates multiple benefits, this is often not recognized or acted upon
- Considerations beyond the water sector often shape decisions on (non-)cooperation – water has no voice
- Institutions and governance capacity are crucial for preventing, mitigating and resolving conflicts over shared water
- Evidence-based decision-making at all governance levels is needed to address conflict risks and ensure cooperation
- This needs to be better communicated to policy makers and a general public through a common message (“the 1.5 degree equivalent for water”)

Question and Answer Period

Panel Summary and Recommendations

- While cooperation overall prevails over conflict, this is not and will not remain a given
- Efforts by the global community and all relevant actors are needed to promote cooperation and manage conflict
- Recommendations
  - Acknowledging and increasing the benefits of cooperation for people, ecosystems, economies, countries and the global community as a whole
  - Supporting institutions for preventing, mitigating and resolving conflicts over shared water
  - Developing evidence-based system to understand and monitor water conflict risks and cooperation opportunities (Global Collaboratory for Water Science and Diplomacy)

Source: UNESCO