Transboundary water cooperation in the European Union: a hydro-political gap assessment

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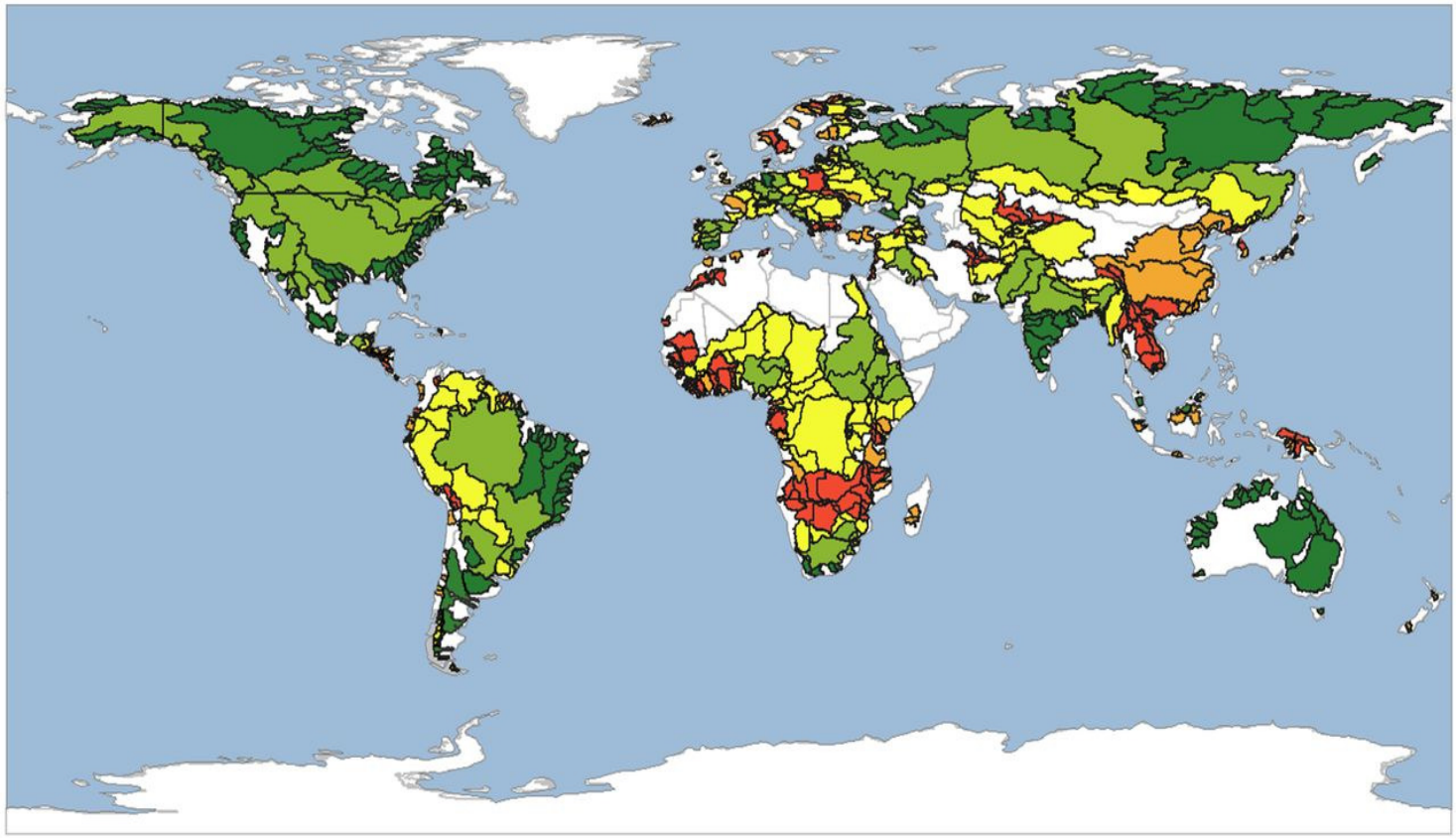
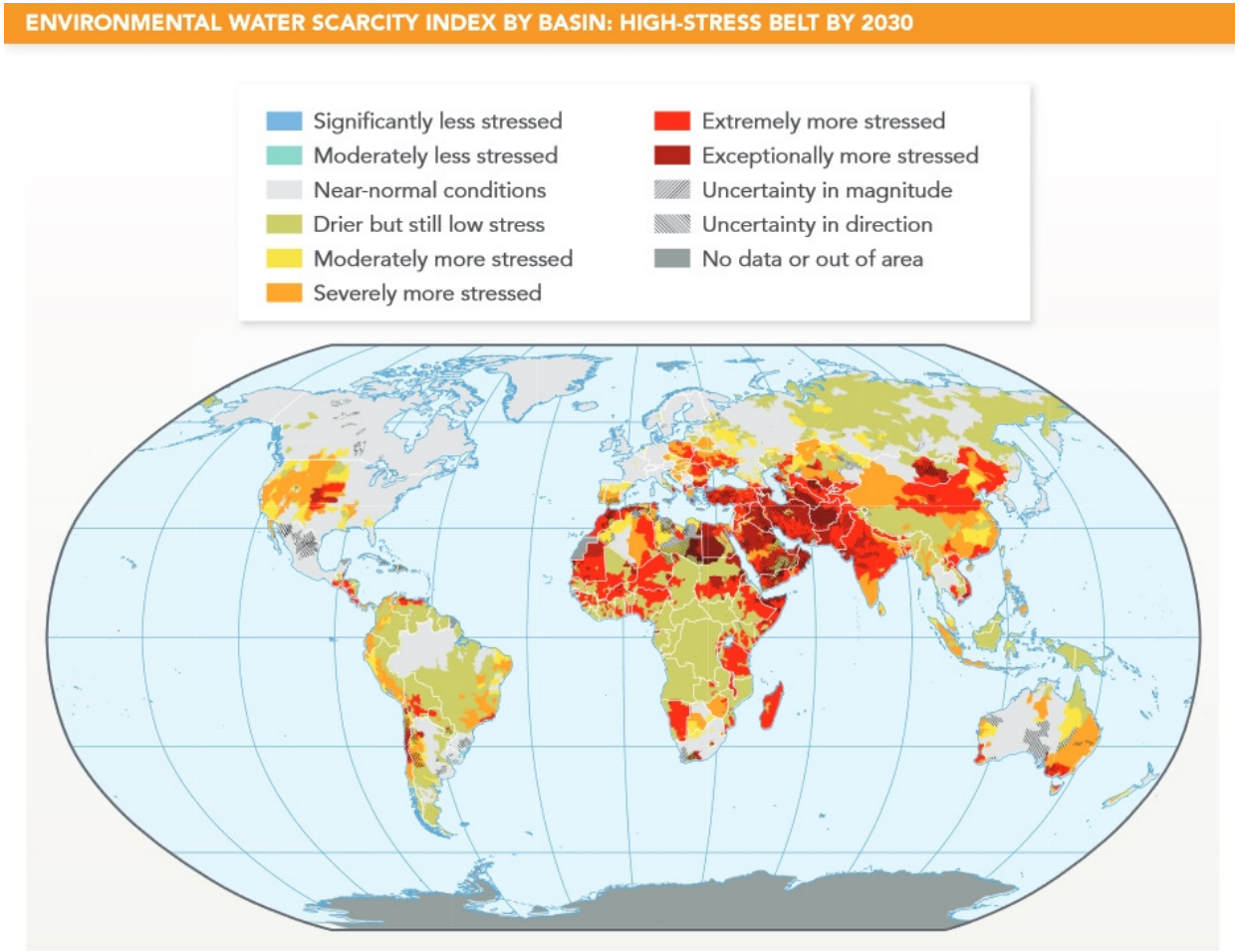
DANUBE REGION strategy
Water Quality

Transboundary water governance in the Anthropocene

Transboundary and federal rivers in the world



Impact on freshwater resources



Impact on political stability

GLOBAL TRENDS 2030:

ALTERNATIVE WORLDS

a publication of the National Intelligence Council

"Water may become a more significant source of contention than energy or minerals out to 2030 at both the intrastate and interstate levels."

The key isses of hydro-political resilience or vulnerability

- climate change and other drivers have a strong potential to alter current hydro-political balances
- "*very rapid changes*, either on the institutional side or in the physical system, *that outpace the institutional capacity to absorb* those changes, *are at the root of most water conflict*" (Wolf et al)
- existing transboundary arrangements can come into question, even in areas that have exemplified cooperation in the past
- Question: how to ward off the potential destabilising impacts and adapt to permutations in the complex geopolitical and environmental systems of shared river basins?

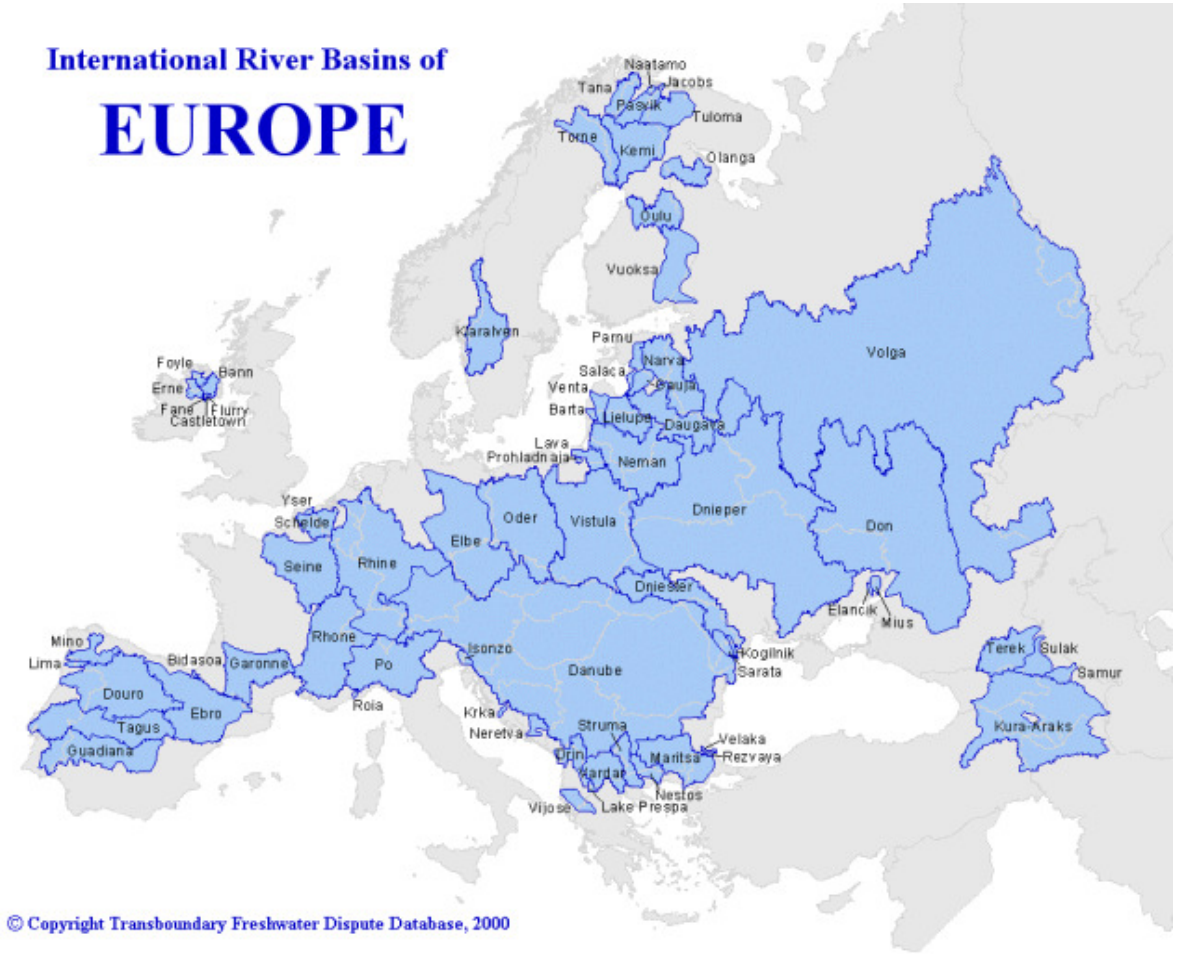
The assessment matrix

- presence of a *water treaty*
- mechanisms for *water allocation*
- mechanisms for *variability management*
- *conflict resolution mechanisms*
- presence of a *river basin organisation*

Distribution of treaties and river basin organisation components by continent (%)

Individual treaty and RBO components	Basin continent				
	Africa	Asia	Europe	N. America	S. America
At least one water treaty	50	40	69	64	32
Allocation	25	25	33	42	14
Variability mgmt.	20	18	34	15	6
Conflict resolution	35	25	49	44	15
At least one RBO	40	19	32	56	22

The situation in Europe



Variable	What is already happening	What could happen
River flow	Climate change induced long-term trends in river flows are difficult to detect due to substantial natural variability and modifications from water abstractions, man-made reservoirs and land-use changes. Nevertheless, **increased river flows during winter** and **lower river flows during summer** have been recorded since the 1960s in large parts of Europe.	Climate change is projected to result in **strong changes in the seasonality of river flows** across Europe. Summer flows are projected to decrease in most of Europe, including in regions where annual flows are projected to increase.
River floods	More than 325 major river floods have been reported for Europe since 1980, of which more than 200 have been reported since 2000. The rise in the reported number of flood events over recent decades results mainly from better reporting and from land-use changes.	Global warming is projected to intensify the hydrological cycle and **increase the occurrence and frequency of flood events** in large parts of Europe. Pluvial floods and in particular flash floods, which are triggered by local intense precipitation events, are also likely to become more frequent throughout Europe. In regions where snow accumulation during winter is projected to decrease (e.g. north-eastern Europe), the risk of early spring flooding could decrease. However quantitative projections for flood frequency and intensity are uncertain.
Droughts	Europe has been affected by **several major droughts** in recent decades, such as the catastrophic drought associated with the 2003 summer heat wave in central parts of the continent and the 2005 drought in the Iberian Peninsula. Severity and frequency of droughts appear to have increased in parts of Europe, in particular in southern Europe.	Regions most prone to an **increase in drought hazard** are southern and south-eastern Europe, but minimum river flows are also projected to decrease significantly in many other parts of the continent, especially in summer.
Water temperature	Water temperature in major European rivers and lakes has increased by 1–3 °C over the last century	Lake and river surface water temperatures are projected to increase with further increases in air temperature.
Lake and river ice cover	The duration of ice cover on European lakes and rivers has shortened at a mean rate of 12 days per century over the last 150–200 years.	**A further decrease in the duration of lake ice cover** is projected.
Freshwater ecosystems and water quality	Cold-water species have been observed to move northwards or to higher altitudes. Changes in life cycle events (phenology) have been observed. Phytoplankton and zooplankton blooms in several European lakes are now occurring one month earlier than 30–40 years ago. Biological invasions of species (including toxic species) that originate in warmer regions have been observed.	The observed changes are projected to continue with further projected climate change. Increases in nutrient and dissolved organic carbon concentrations in lakes and rivers may occur, but management changes can have much larger effects than climate change.

Do we have a problem? – the results

The matrix

- existence of a basin treaty,
- requirements on water allocation,
- water quality management,
- risk management cooperation,
- variability management,
- cooperation relating to water infrastructure development,
- conflict resolution mechanisms,
- institutional framework (existence of a supranational body)

The framework

- UNECE Transboundary Water Convention (1992)/UN International Watercoureses Convention (1997)
- Basin treaties and organisations
- EU law

The UN Framework

- Water allocation
  - Equitable and reasonable utilisation/no harm… little practical relevance
- Water quality
  - Strong ecological focus
- Risk management
  - Emergency cooperation/notification
- Variability management
  - Completely lacking from the legal texts, but good initiatives on climate adaptation in UNECE
- Water infrastructure development
  - Covered
- Dispute settlement
  - Covered

European basin treaties

Basin	Year (adoption)	Water quantity and allocation	Environmental quality	Risk management	Variability management	Infrastructure development	Basin organisation	Dispute settlement
Danube	1994	Only sporadic references to water quantity / basic principles of equitable and rational water use	Cooperation over water quality issues are at the core of the convention.	Preventing and controlling hazards from and mutual assistance is a core commitment of the parties	Only as regards risk management. No reference to hydrological variability in general or drought.	Prior information and consultation. (Art. 3, 11)	International Commission for the Protection of the River Danube (ICPDR)	Negotiations first. After 12 months of notification to ICPDR mandatory submission to ICJ or arbitration
Elbe	1990	Water quantity and allocation are not mentioned.	Pollution prevention, control, monitoring are to be developed	Uniform warning and alert system to be developed	None	Planned new works to be “discussed” by RBO	International Commission for the Protection of the Elbe	None
Oder	1996	No reference to allocation.	Pollution prevention, control, monitoring are to be developed	Uniform warning and alert system to be developed	None	Planned new works to be “discussed” by RBO	International Commission for the Protection of the Oder	None
Rhine	1998	No specific reference to water rights or allocation.	Pollution prevention, control, monitoring are to be developed	Alert in case of accidents	None	None	International Commission on the Protection of the Rhine (ICPR)	Negotiations or arbitration

European basin treaties

Basin	Year (adoption)	Water quantity and allocation	Environmental quality	Risk management	Variability management	Infrastructure development	Basin organisation	Dispute settlement
Meuse	2002	Reference to sustainable and integrated water mgmt. No reference to allocation.	Cooperation under the WFD, one single RBMP	Cooperation in floods and accidents	Future cooperation on drought prevention	Future cooperation on major works of transboundary impact	International Commission of the Meuse	Negotiations or other acceptable means
Sava	2002	The convention covers transboundary impacts of both quantitative and qualitative nature. Provision of sufficient water quantity for ecosystems and navigation	Art. 2., 3 and reference to the implementation of the WFD.	General exchange of information on all hazards	The convention addresses in a general manner extraordinary impacts on the water regime	Detailed rules in Protocol	International Sava River Basin Commission	Detailed rules for dispute settlement: - negotiations - third party involvement / ICJ or arbitration - fact finding expert committee
Albufeira Convention (Miño, Duero, Tajo, Guadiana)	1998	Principles and contains detailed provisions on water sharing between Spain and Portugal	Covers water quality and ecological aspects	Detailed cooperation on all transboundary risks.	Covers exceptional situations (pollution accidents, floods, droughts and water scarcities)	Covered in detail	Comísion de Ríos Internacionales	Negotiations/arbitration

EU water law

- Water allocation
  - Only UNECE Transboundary Water Convention
- Water quality
  - Strong ecological focus
- Risk management
  - Sophisticated system of risk mgmt cooperation
- Variability management
  - None (except for floods)
- Water infrastructure development
  - Covered
- Dispute settlement
  - Only „good offices” under WFD and CJEU

Conclusions

Important vulnerability gaps identified :

- *the absence of water quantity management* from European treaty framework and EU law, apart from such basic principles as equitable and reasonable utilisation or the no-harm rule,
- *the absence of water allocation mechanisms:* apart from a small number of bilateral treaties, no rules and mechanisms are in place in Europe to govern water allocation between riparians,
- *variability management* is almost completely limited to flood prevention and control. Neither substantive rules, nor procedures are in place to address the impact on freshwater availability of other hydrological extremes,
- *the dispute settlement mechanisms of the EU are inadequate* to channelize and resolve significant water disputes among European riparians. The EU legal system puts the European Commission at the centre of law enforcement. Moreover, EU law generally prohibits arbitration or recourse to the International Court of Justice in the context of major basin treaties. The option of member state-to-member state litigation before the European Court of Justice does not offer a viable alternative.