Application of Water Quality Guidelines at Basin Level to protect Freshwater Ecosystems

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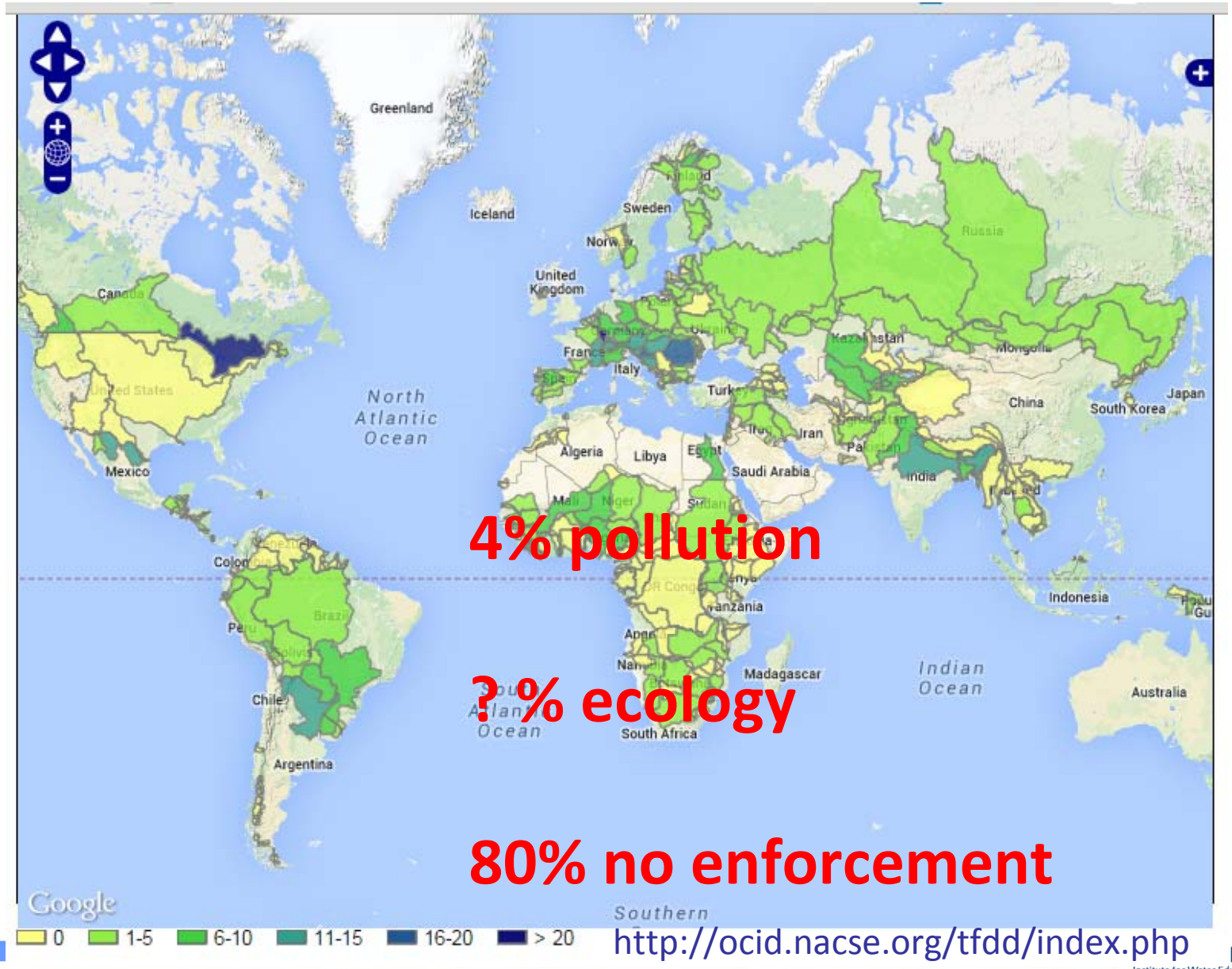
Number of water treaties in the world



4% pollution

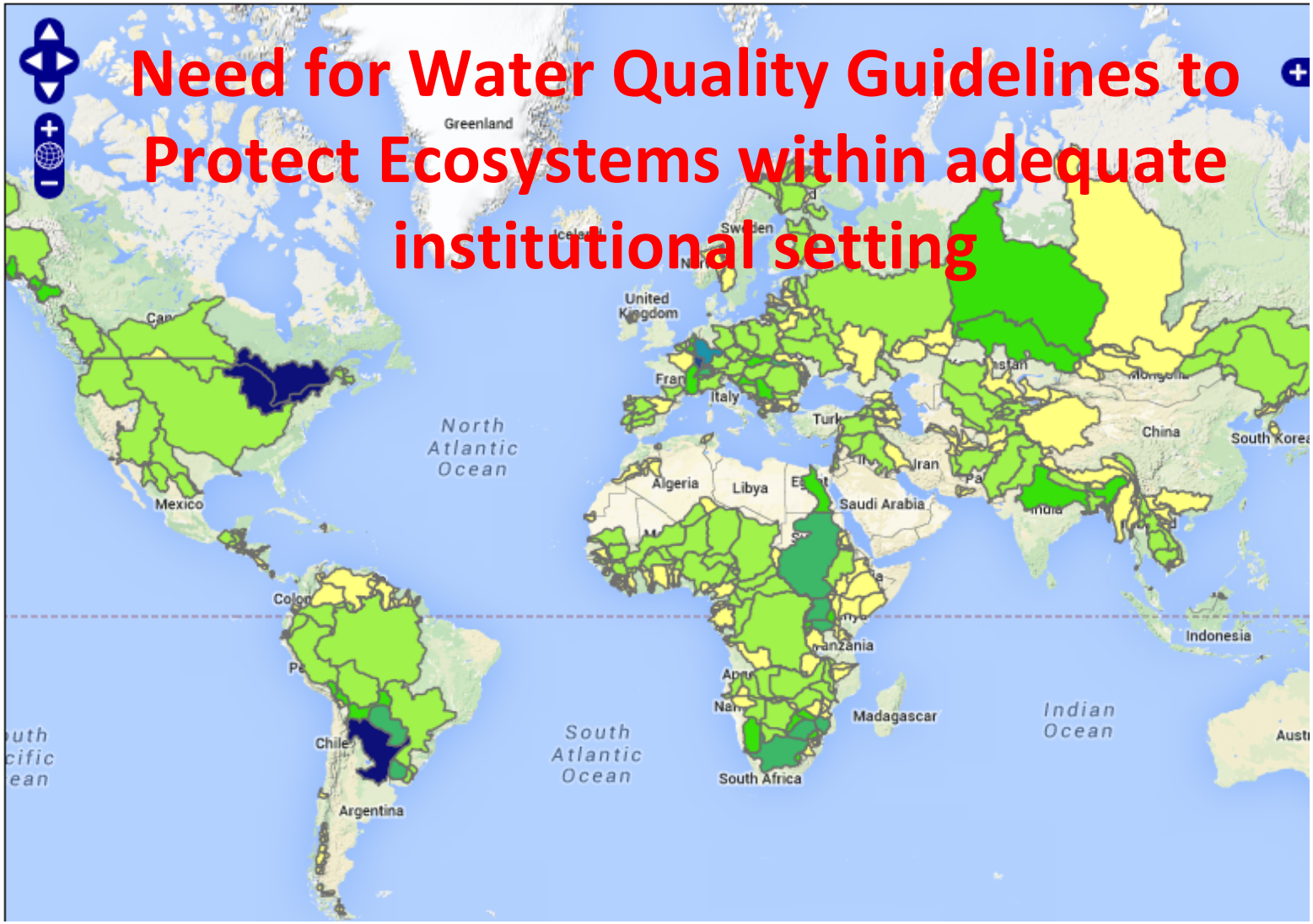
?% ecology

80% no enforcement

http://ocid.nacse.org/tfdd/index.php

IHE Institute for Water Education

Large diversity in structure and mandate of BO's



http://ocid.nacse.org/tfdd/index.php

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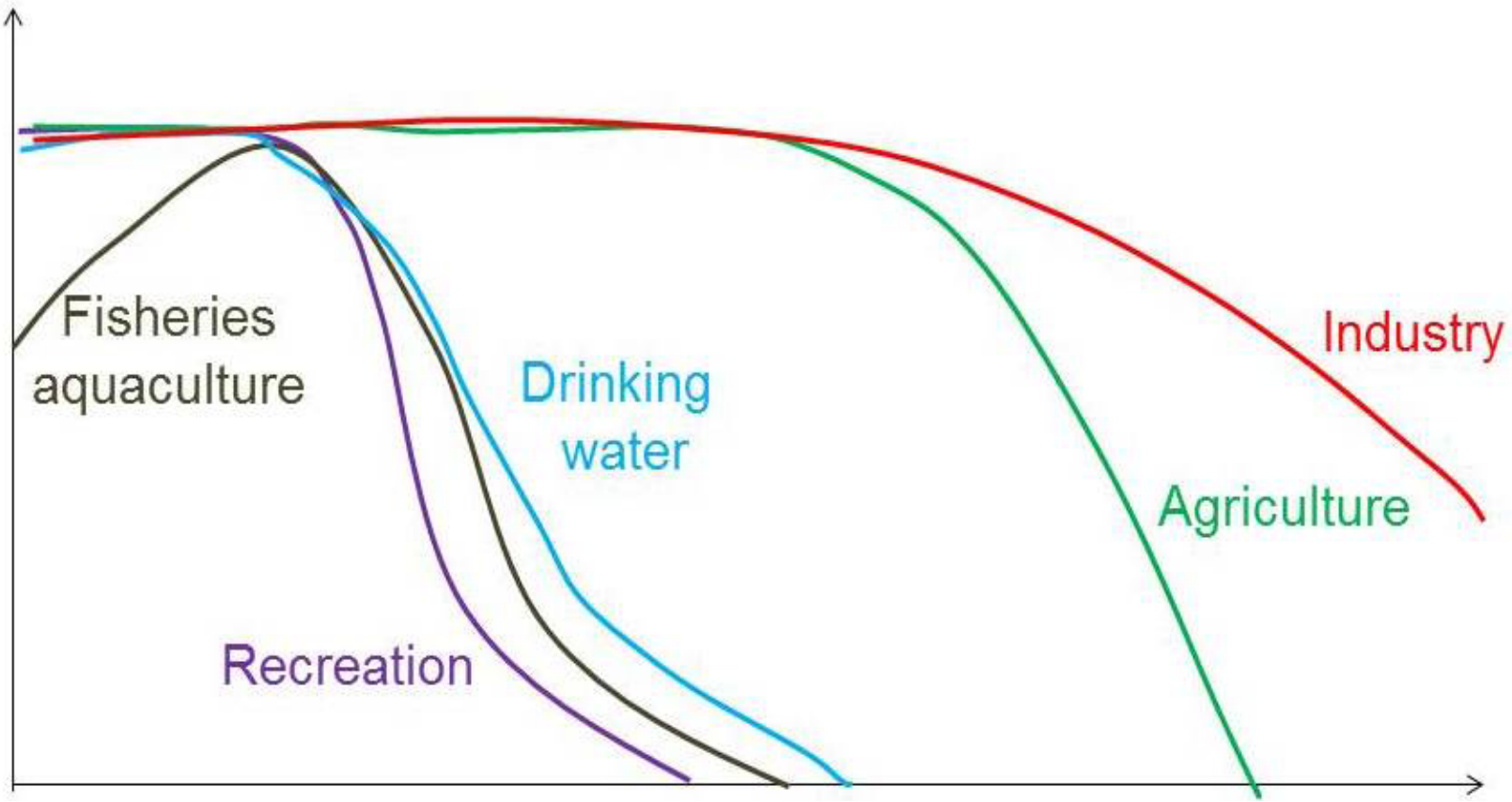
Mandate and tasks of BO

- Goal setting
- Monitoring
- Reporting
- Measures
- Compliance and Enforcement
- …..

Role for BO's to balance ecosystem quality versus other uses and interests

Potential uses related to ecosystem quality



High ecosystem integrity	Minimal to moderately disturbed	Highly disturbed	Does not sustain freshwater life

Selection of Indicators and Monitoring

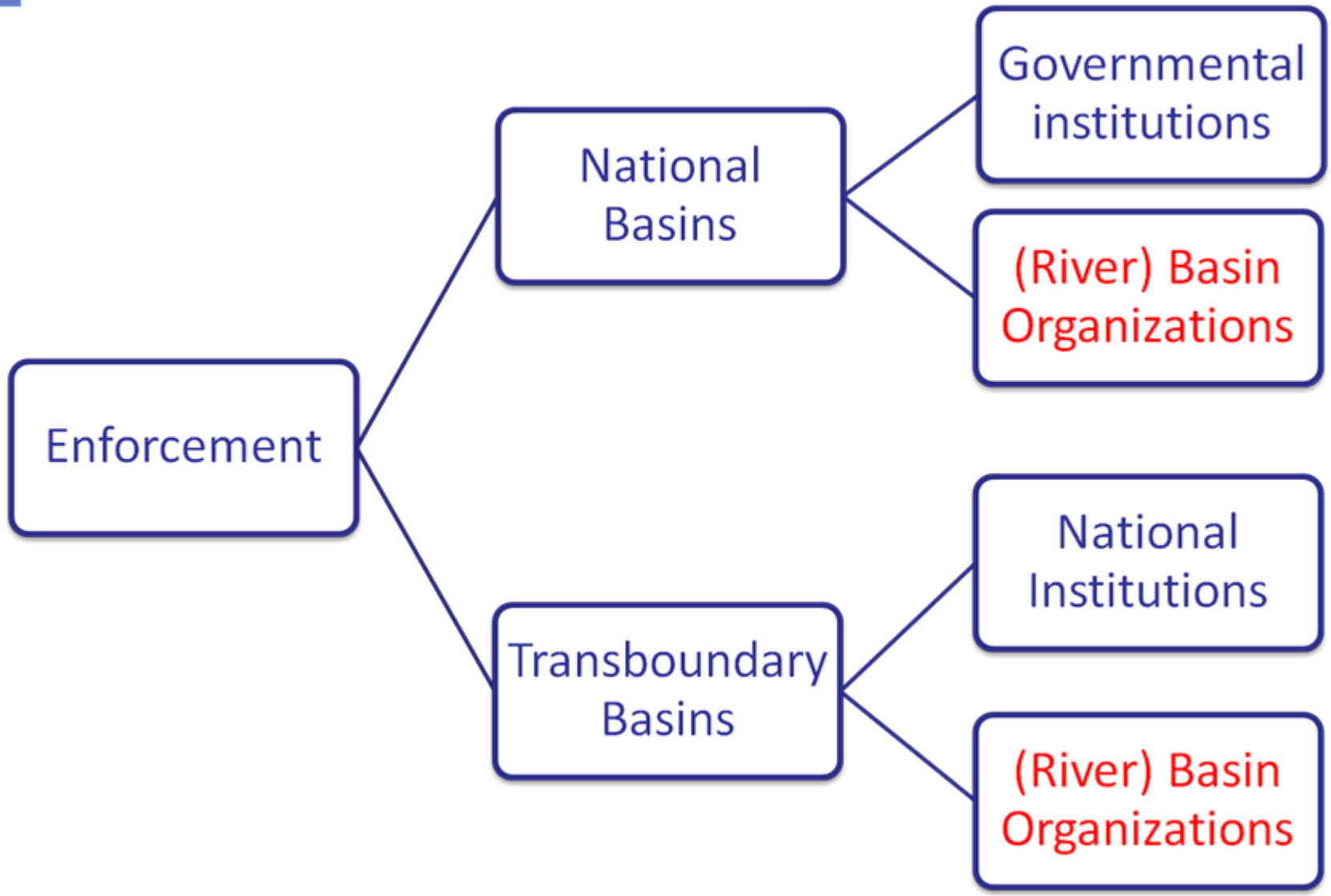
A few countries / regions (EU!) have set indicators

Biological	Fish
	Invertebrates
	Algae
	Macrophytes
Physico-chemical	Metabolic
	Trophic
	Toxicants
Hydrogeomorphic	Aquatic habitats
	Riparian habitats

Criteria

- O_2, Nutrients — Guidelines available
  Site specific application needed
- Toxics — Not site specific
  Different guidelines available
  Harmonize!!
- Biological — Site specific
  Need for reference values, within or with similar basins

Enforcement



Recommendations

- Assessment for aquatic ecosystems includes physio-chemical, biological and hydromorphological indicators
- Reference values are needed for biological indicators
- Develop international water quality criteria for toxic substances in fresh water ecosystems
- Provide a common terminology concerning water quality assessment

Recommendations

- Strengthen the mandate and cooperation between authorities, stakeholders and states in basin organizations to protect and restore aquatic ecosystems by
  - Long-term goals
  - Technical and financial capacity
  - Stakeholder engagement
  - Cooperation in monitoring, data-analysis, reporting, dissemination of results
  - Clear enforcement