United Nations Educational Scientific and Cultural Organization

Water

Transboundary waters: UNESCO IHP's Contribution to Science and Policy

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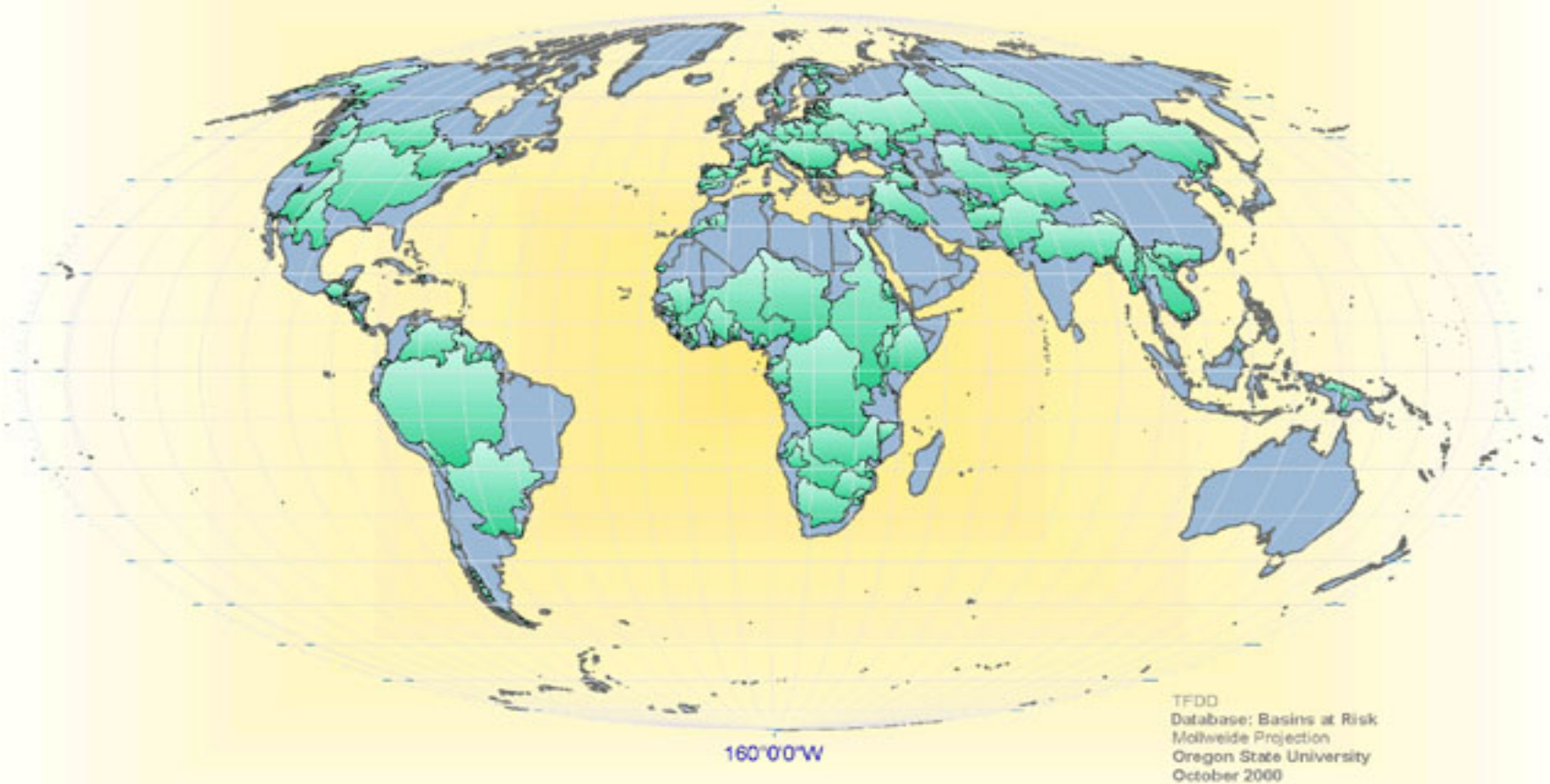
UNESCO, Division of Water Sciences

United Nations Educational
Scientific and Cultural Organization

Water

International Basins of the World



United Nations Educational Scientific and Cultural Organization

Water

UNESCO'S Intergovernmental Scientific Cooperative Programme in Hydrology and Water Resources

The International Hydrological Programme (IHP) is the only global intergovernmental programme of the UN system devoted to water research, water resources management, and education and capacity building for over 30 years.

The programme, tailored to Member States's needs, is implemented in six- year phases- allowing it to adapt to a rapidly changing world.

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Freshwater at UNESCO: "The three plus one pillars"

- **International Hydrological Programme- IHP**
  IHP Secretariat : Paris+ Field Offices of UNESCO National Committees in 164 Member States

- **UNESCO-IHE Institute for Water Education:**
  postgraduate education for water professionals (Delft, The Netherlands)

- **UN World Water Assessment Programme:**
  periodic compilation of the World Water Development Report (WWDR) — two issues (2003, 2006), next issue in 2009

- **Network of 17 water centers under the auspices of UNESCO (+ 10 more in the pipeline)**

IHP Cross-Cutting and Associated Programmes

Cross-Cutting

Flow Regimes from International Experimental Network Data

- A global network to share data, monitoring and modeling techniques for scientific understanding of the water cycle

Hydrology for the Environment, Life and Policy

- Promoting Integrated Water Resources Management through stakeholder Driven Best Practice Examples

Associated Programmes

IFI	-	International Flood Initiative
ISI	-	International Sediment Initiative
JIHP	-	Joint International Isotope Hydrology Programme
ISARM	-	Internationally Shared Aquifer Resources Management
G-WADI	-	Global Network on Water and Development information in Arid Lands
GRAPHIC	-	Groundwater Resources under the Impact of Human Pressure and Climate change
PCCP	-	From Potential Conflict to Cooperation Potential
UWMP	-	Urban Water Management Programme
WHYMAP	-	World Hydrogeological Map

Seventh Phase of IHP (2008-2013)
Water Dependencies: Systems under Stress and Societal Responses

Cross-cutting IHP programmes

- HELP
- FRIEND

THEME I:
Adapting to the Impacts of Global Changes in River Basins & Aquifer Systems

THEME II:
Strengthening Water Governance for Sustainability

THEME III:
Ecohydrology for Ecosystem Sustainability

THEME IV:
Water and Life Support Systems

THEME V:
Water Education for Sustainable Development

Key Theme: Associated IHP programmes

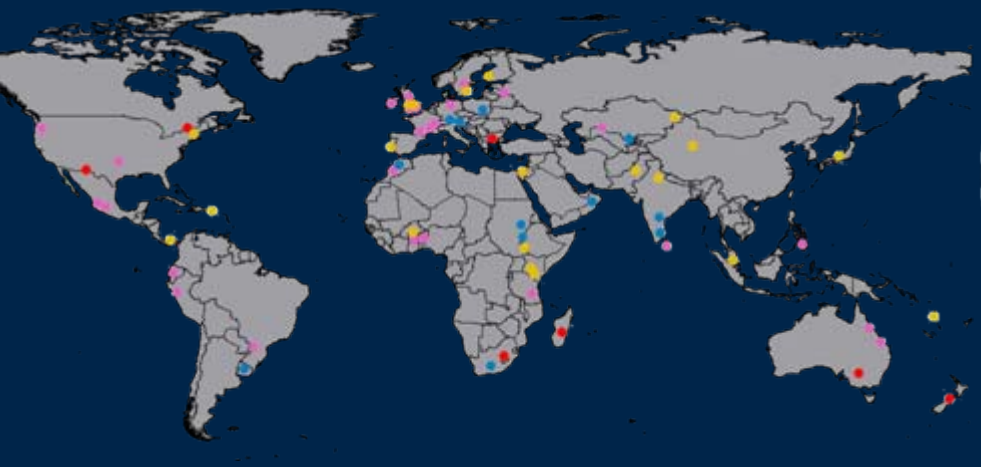
- IFI
- ISI
- PCCP
- JIIHP
- ISRAM
- G-WADI
- UWMP
- GRAPHIC
- WHYMAP

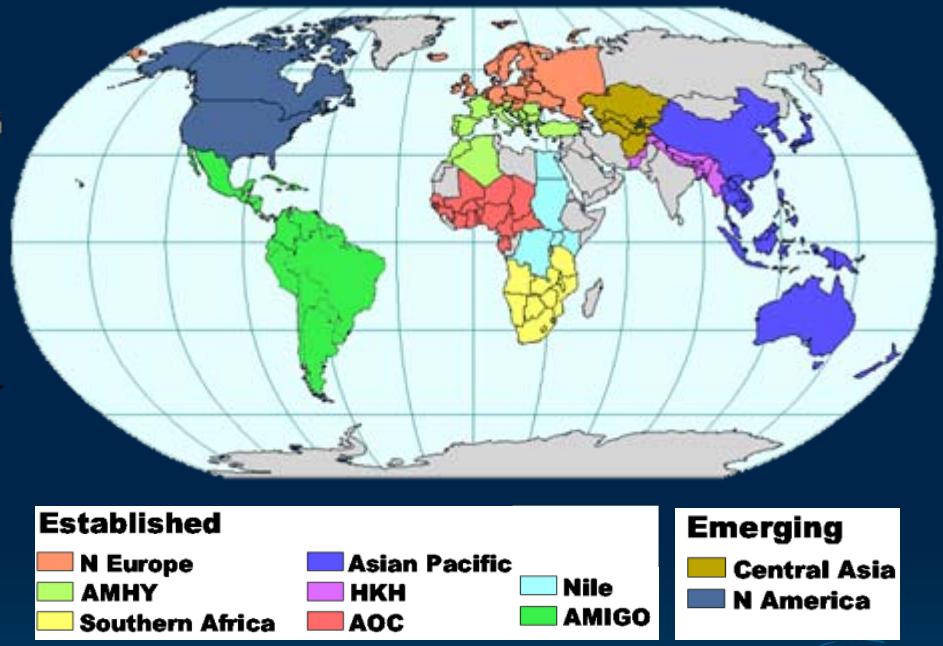
Hydrological Research

Water Resources Management

Education & Capacity Building

FRIEND and HELP Global Networks





HELP *Network of Basins – Promoting Integrated Water Resources Management through Stakeholder Driven Best Practice Examples*

FRIEND – *A global network of regions to share data, monitoring and modeling techniques for scientific understanding of the water cycle*

North America:

Lake Champlain (USA-Canada)
Lake Ontario (USA-Canada)
Mystic (USA)
Upper Washita (USA)
Willamette (USA)
Upper San Pedro (USA-Mexico)
Luquillo Mountains (Puerto Rico)

Central and South America:

Lerma-Chapala (Mexico)
Cupatitizio (Mexico)
Chaguana (Ecuador)
Panama canal (Panama)
Jequetepeque (Peru)
Tacuarembo (Uruguay)
Sao Francisco Verdadeiro (Brazil)

Europe:

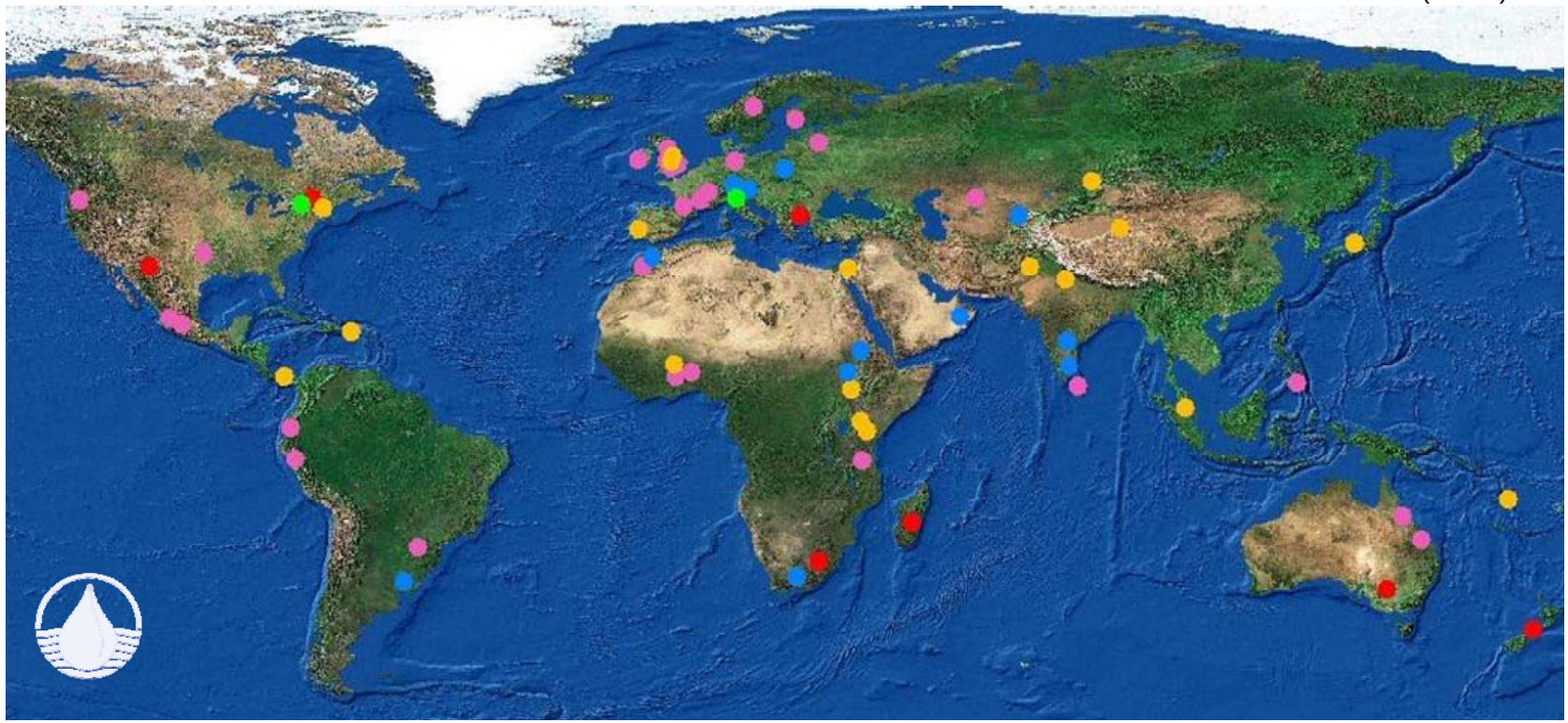
Karjaanjoki (Finland)
Eman (Sweden)
Nestos/Mestas (Greece-Bulgaria)
Dragonja (Slovenia)
Upper Danube (5 countries)
Pilica (Poland)
Pays de Savoie/Lac Leman (France)
Hérault (France)
Rhône (France)
Liguria-Veneto (Italy)
Saale (Germany)
Motala (Sweden)
Oona (Ireland)
Eden (UK)
Frome-Piddle (UK)
Welland (UK)
Pang-Lambourn (UK)
Tern (UK)
Severn (UK)
Thames (UK)
Guadiana (Portugal)

Middle East:

Khalil/Besor (Israel-Palestine)
Barka (Oman)

HELP Basins Classification

- Demonstration
- Operational
- Evolving
- Proposed
- Associated HELP Activities



Africa:

Bouregreg (Morocco)
Drâa (Morocco)
White Volta (Ghana)
Upper Ouémé (Benin)
Atbara (Ethiopia-Eritrea-Sudan)
Ewaso Ng'Iro (Kenya)
Lake Navaisha (Kenya)
Nakambé (Burkina Faso)
Gash (Sudan Ethiopia)
Blue Nile (Sudan-Ethiopia)
Mandaratsy (Madagascar)
Olifants (South Africa)
Thukela (South Africa)
Greater Ruaha (Tanzania)

Asia:

Lake Peipsi/Chudskoe (Estonia-Russia)
Indus (Pakistan)
Aral sea (central Asia)
Irtysh (Kazakhstan-China-Russia)
Chirchick (Uzbekistan)
Tarim (China)
Gagas (India)
Kaluvelly (India)
Brahmani-Baitarani (India)
Langat (Malaysia)
Uda Walawe (Sri Lanka)
Davao (Philippines)
Yasu (Japan)

Australasia :

Murrumbidgee (Australia)
Fitzroy (Australia)
Burdekin (Australia)
Motueka (New Zealand)
Talise (Vanuatu)

Water Related centers

The UNESCO-IHE Institute for Water Education is the largest water education facility in the world and the only institution in UN system authorized to confer accredited Master and PhD degrees. The Institute is instrumental in strengthening the efforts of other universities and research centres to increase the knowledge and skills of professionals working in the water sector.

Water-related institutes and centres under the auspices of UNESCO work on relevant thematic and geographic priorities in their areas of expertise. Since Member States have recognized the potential of these centres, the network has been rapidly expanding

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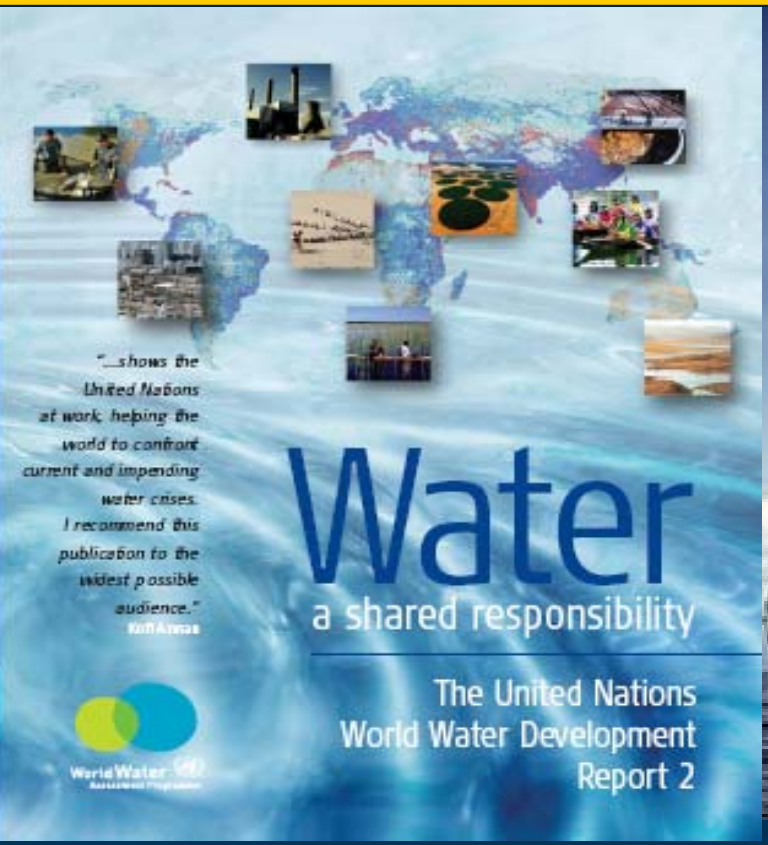
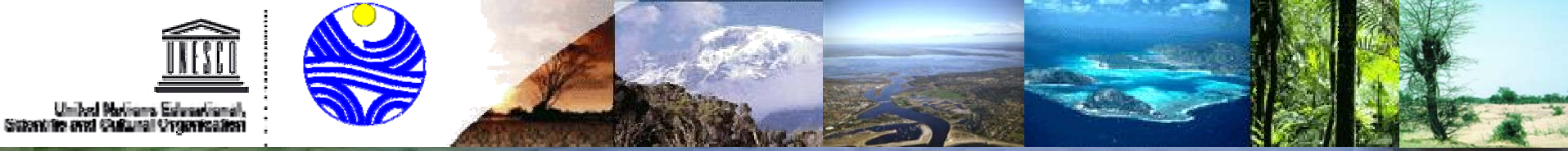
IHP

The State of The World's Freshwater Resources



World Water Assessment Programme (WWAP)- Hosted and led by UNESCO



From Potential Conflict

to Co-operation Potential

Water for Peace

a contribution to

World Water Assessment Programme

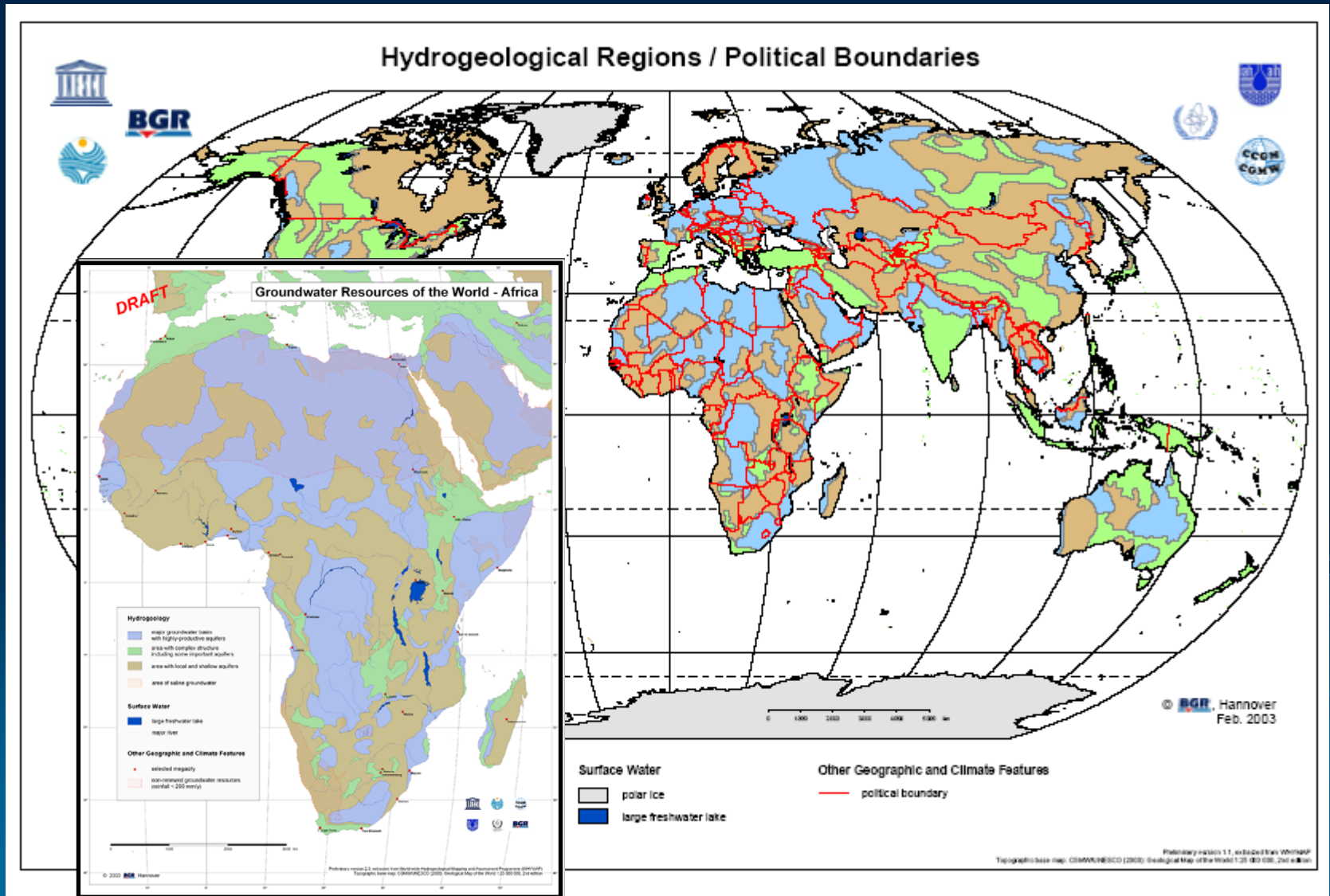
ISARM Portal: www.isarm.net

ISARM

ISARM - Internationally Shared (Transboundary) Aquifer Resources Management: Multidisciplinary aspects

- **Legal**
  - **eg Treaties, interstate agreements**
- **Scientific**
  - **Hydrology, hydrogeology, conceptual modelling**
- **Socio-economic**
  - **Water security, accesibility, efficiency, poverty reduction**
- **Institutional Capacity Building**
  - **Awareness raising, counterpart agencies**
- **Environmental**
  - **Sustainability, biodiversity, risks, vulnerability**

Groundwater Map of the World



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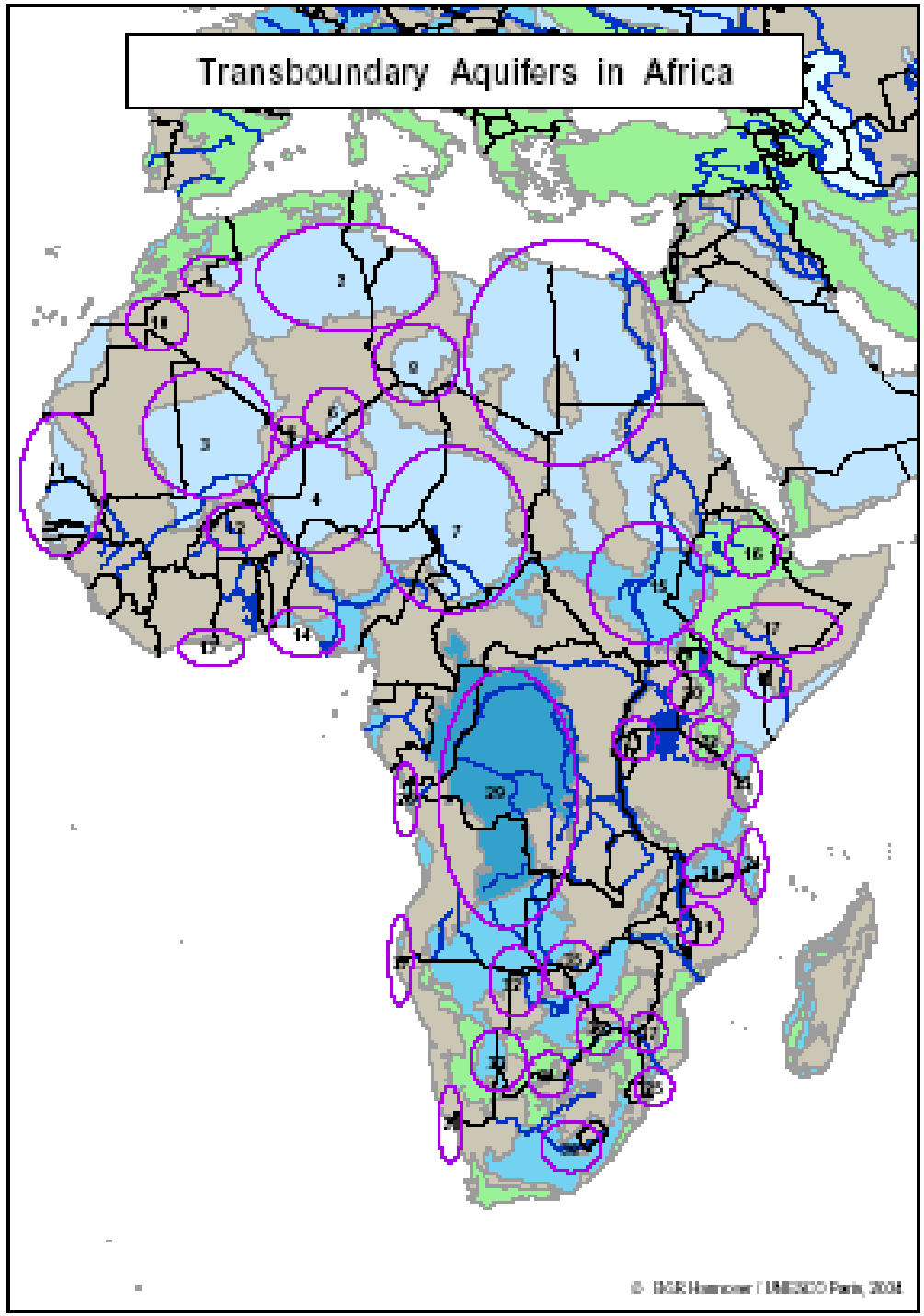
IHP

UNESCO ISARM AFRICA

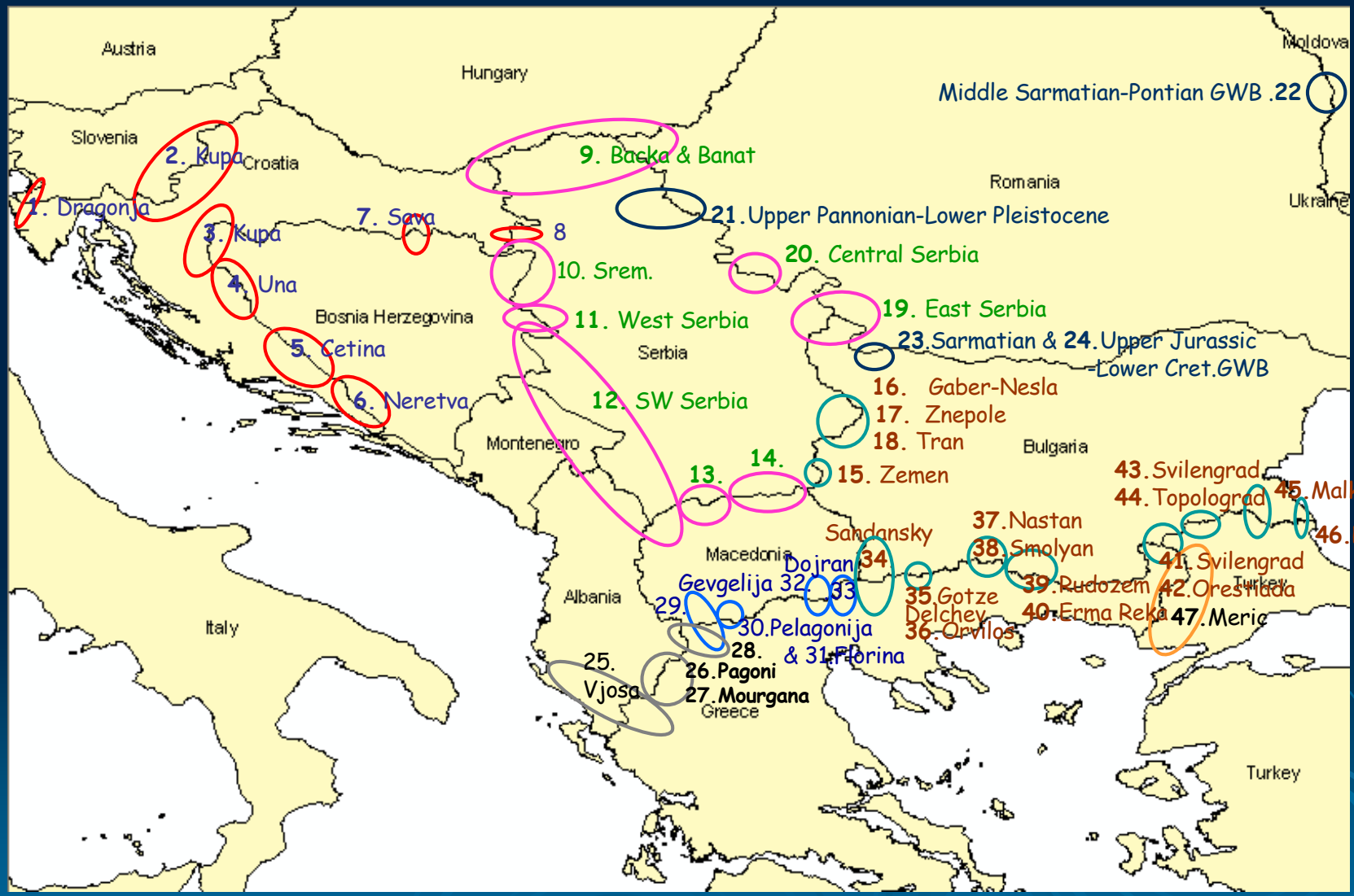
39 transboundary aquifers inventoried

Many countries and large urban conglomerations in Africa depend to a major extent or entirely on groundwater and the large shared aquifer resources represent often the only source for drought security and life sustenance of large populations in semi-arid areas



UNESCO ISARM in the BALKANS

47 transboundary aquifers inventoried



UNESCO Chair/International Network of Water-Environment Centres for the Balkans (INWEB), Aristotle University of Thessaloniki, Thessaloniki, Greece.

Concluding Message

UNESCO is leading trans-disciplinary global effort to manage shared waters by brining together:

- **Water Science**
- **Water Law**
- **Socio-economics**
- **Institutional Capacity Building**
- **Environmental Management**
- **Water Diplomacy**

Because

Shared Waters = Shared Opportunities