International Flood Initiative

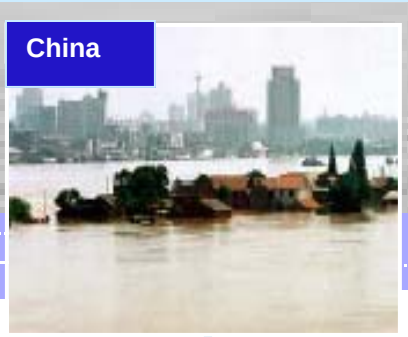
International Workshop
WATER AND DISASTERS
11-12 December 2004
The University of Western Ontario
London, Ontario, Canada

Andras Szollosi-Nagy

UNESCO International Hydrological Programme

Division of Water Sciences

Major floods and droughts worldwide in 2002



Flood Drought

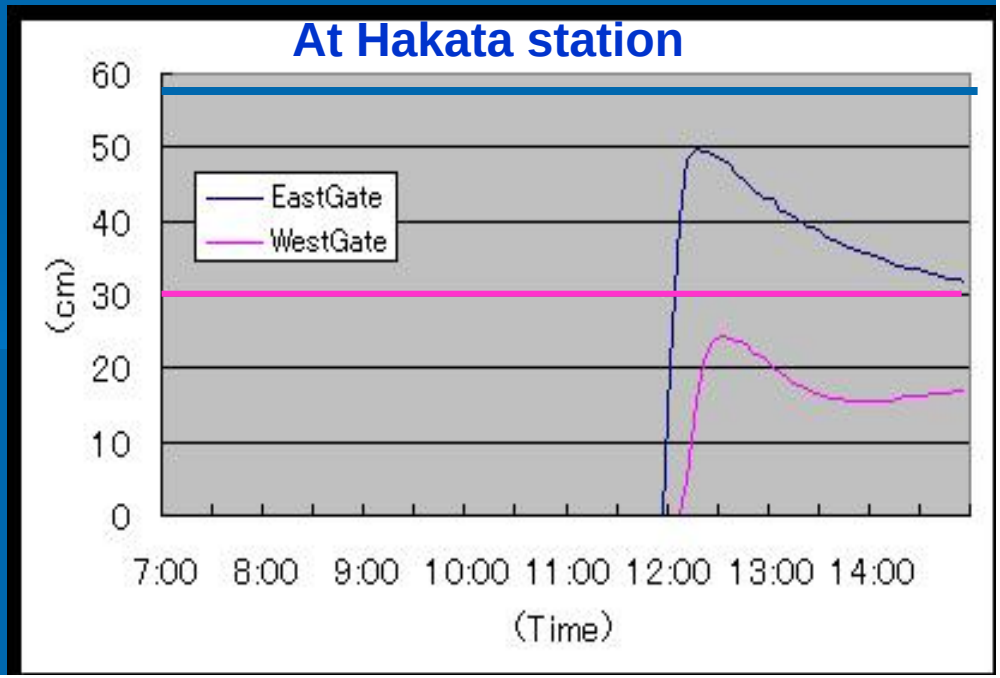
Austria
Czech
Russia
France
Turkey
Afghanistan
China
Korea
Senegal
Nepal
Bangladesh
India
Philippines
Ethiopia
Vietnam
Sri Lanka
Indonesia
Kenya
Micronesia

USA
Mexico
Haiti/ Jamaica
Ecuador
Peru
Bolivia
Uruguay

There is pressing need to develop advanced risk management on water hazard in order to secure human life and ensure sustainable socio-economic development and poverty alleviation.

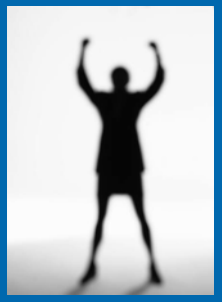
- Urban expansion taking place downward → Underground flood risk
- Recent developments → Long term risks are not experienced

Fukuoka simulation



Volume of water entered into underground space:

- 2,017 m3 (simulated volume)
- 1,320 m3 (total pumped water station)



CENTRAL TENET

Humans are changing the global water system in a globally-significant way

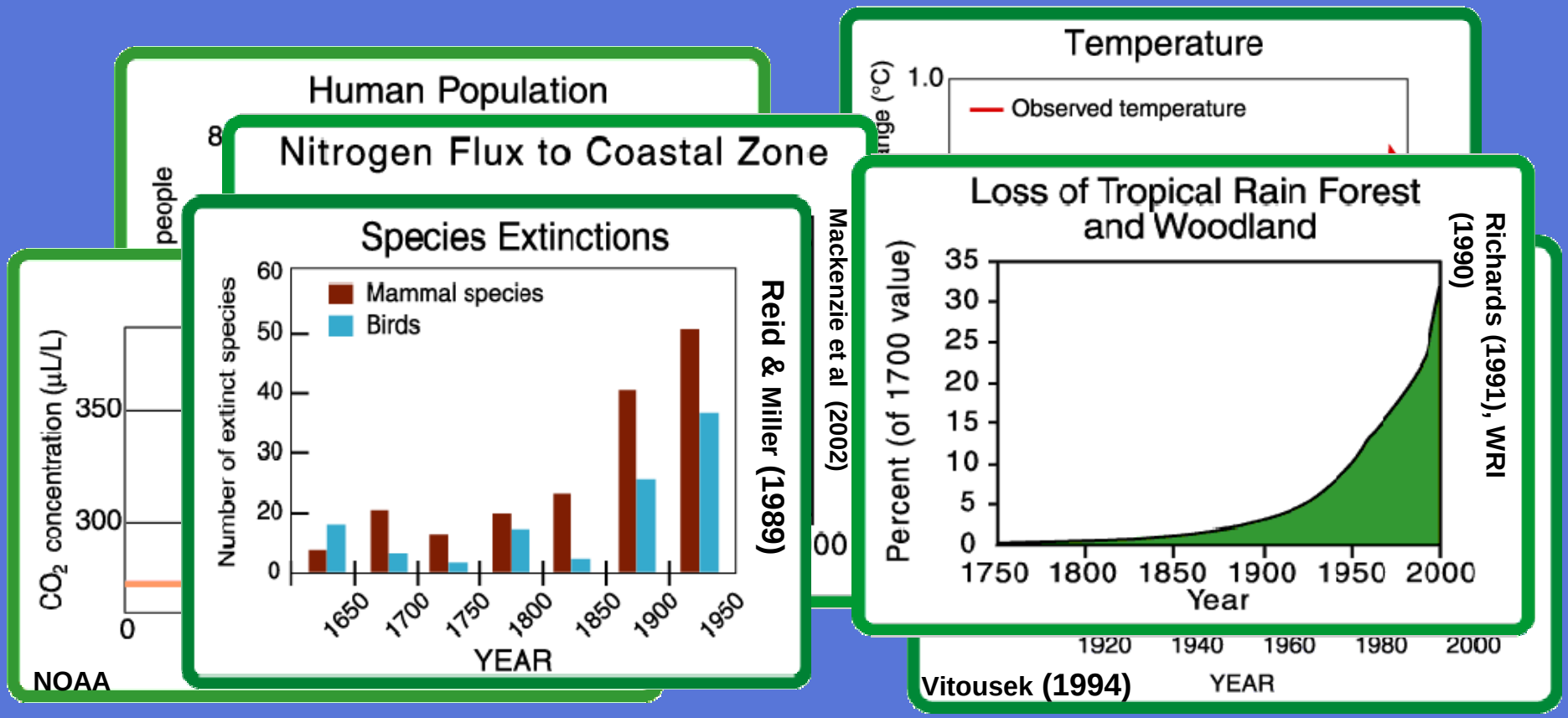
without…..

adequate knowledge of the system and thus its response to change

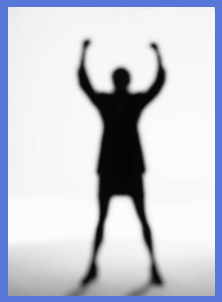
What is Global Change?

- Global Change is more than Global Climate Change
- It has natural PLUS human/social dimensions
- A constellation of changes, many global in domain

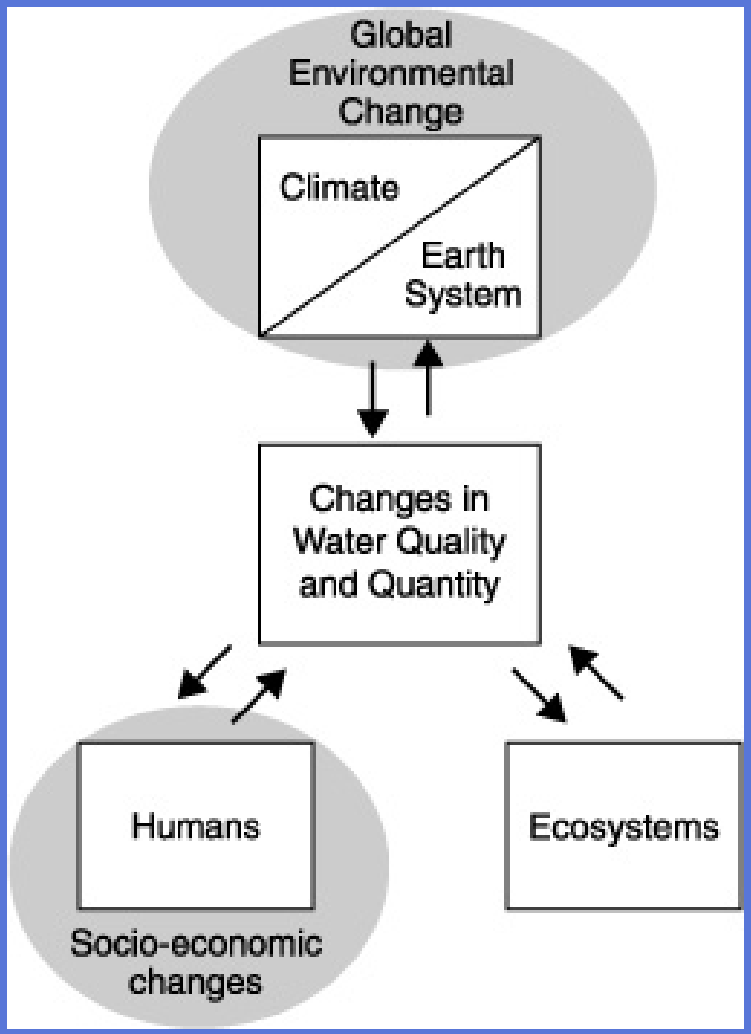
For example, we see large changes in:



The Global Water System

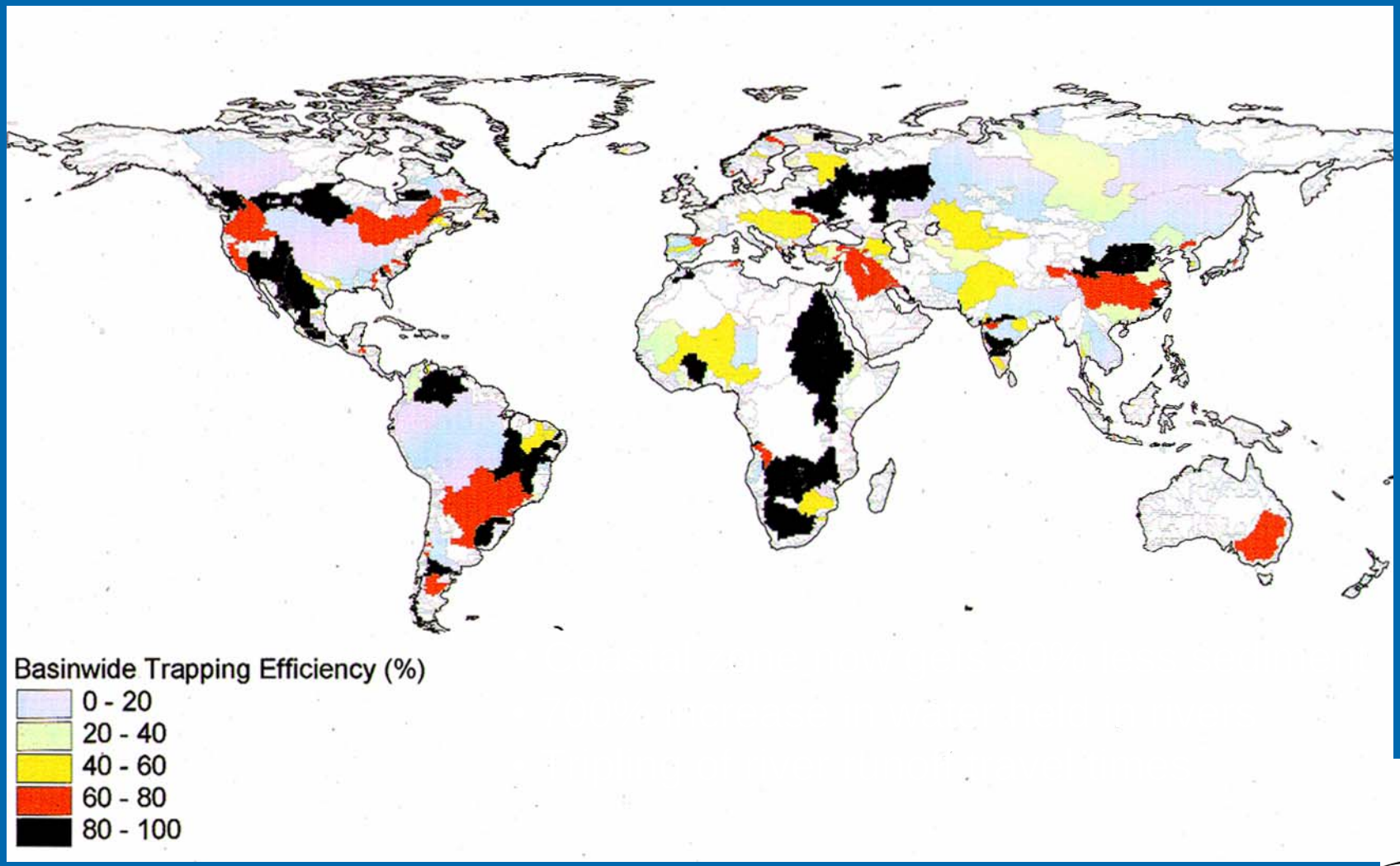


- Water ***Cycling*** Deeply Embedded in Earth System
- Interconnections are Strong
- Change to One Part Reverberates Throughout



Human Fingerprint on Land-to-Ocean Linkages

--Intercepted sediments that "nourish" our coastlines

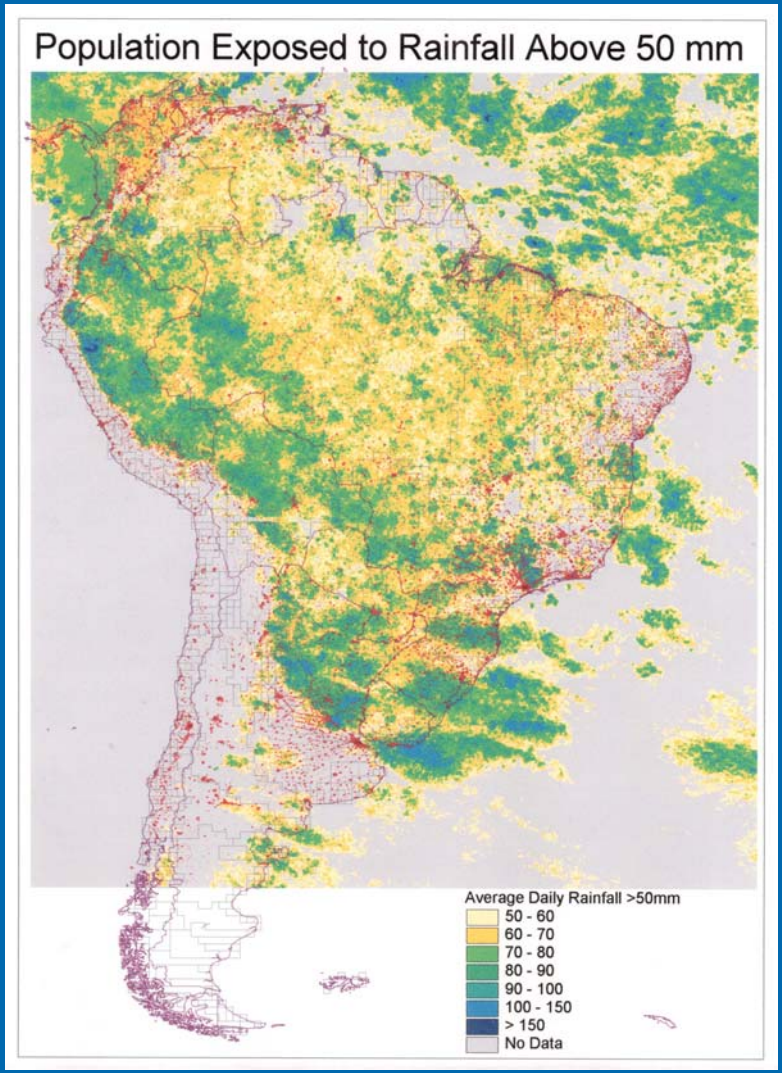


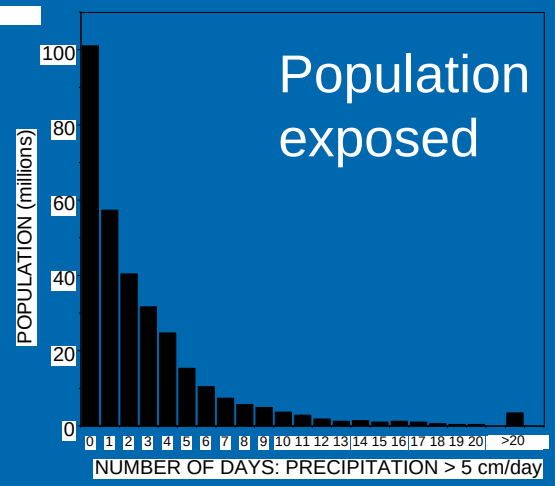
UNH

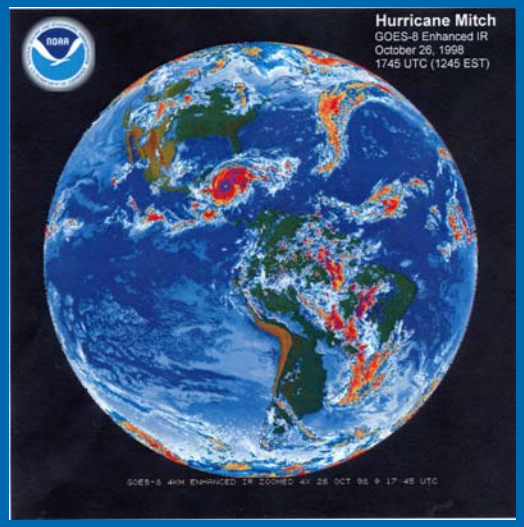
Vörösmarty et al. 2003

Water Means Hazards, Too

- Will climate become more variable?
- Will people move into harm's way?

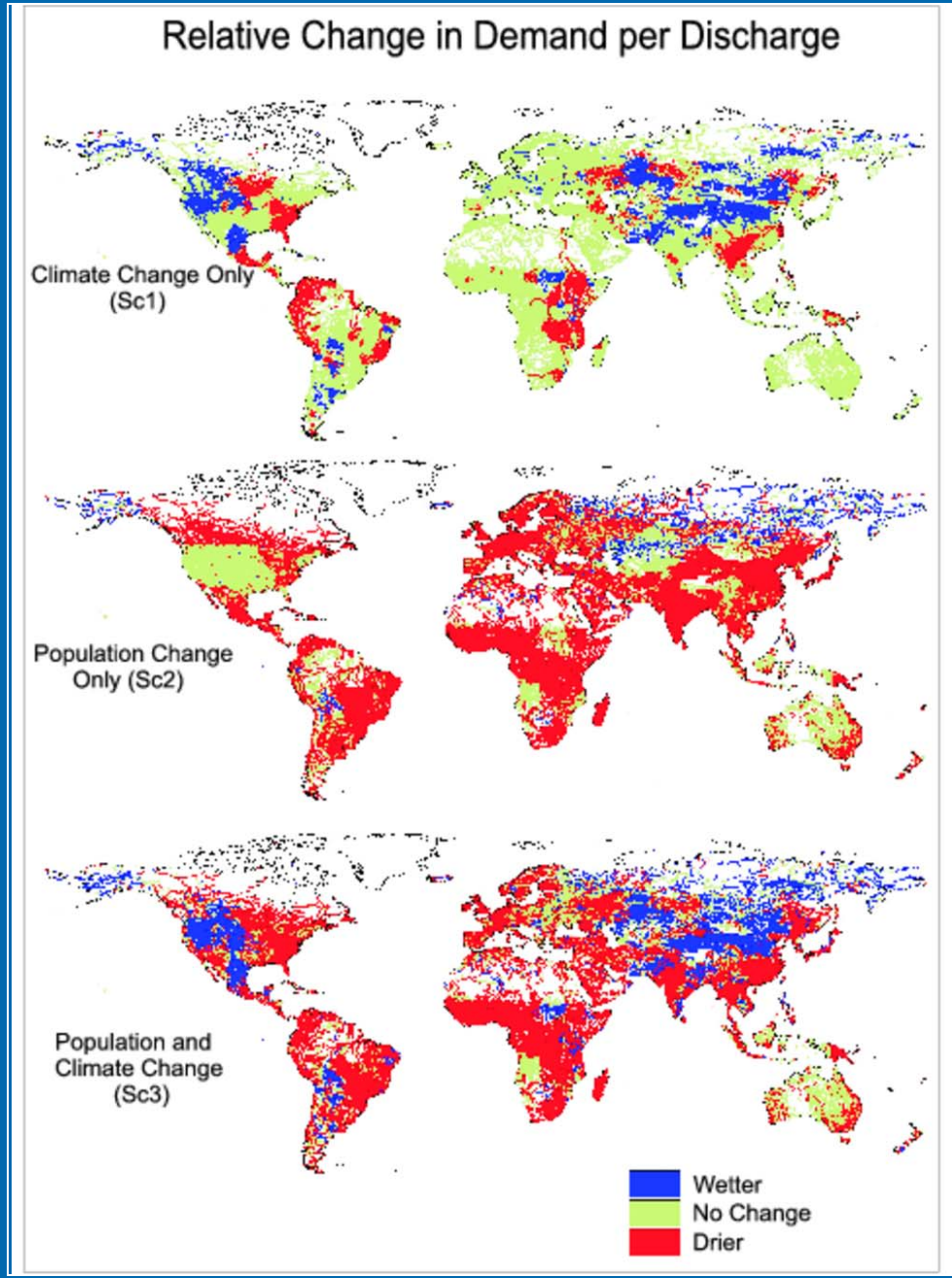






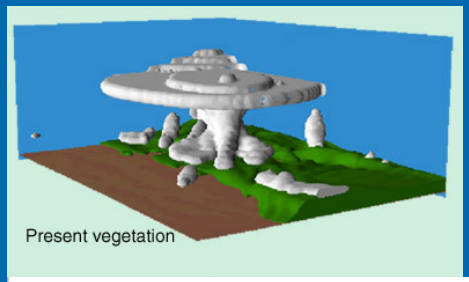
Water Stress Changes to 2025

- 80% of future stress from **population** & **development**, not **climate change**!
- Correct Priorities?
  85% US global change research funding to climate and carbon



UNH

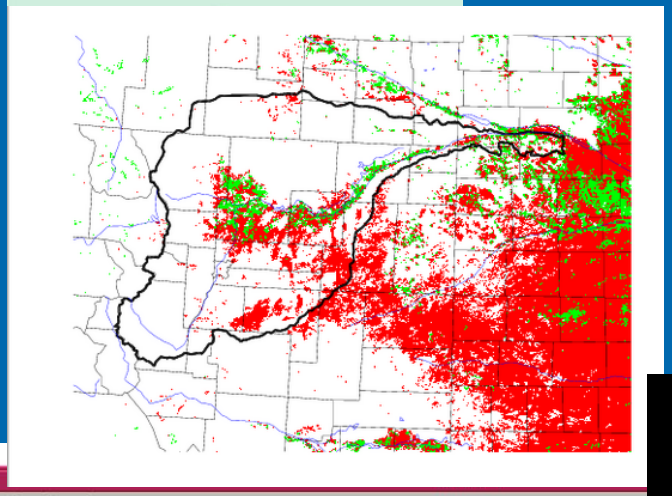
Vörösmarty et al. 2000

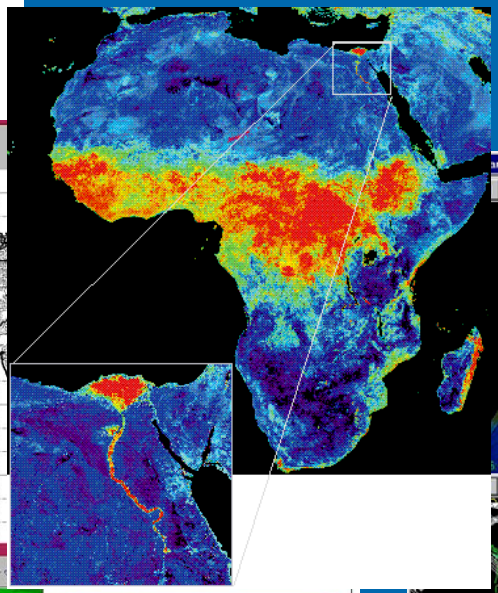


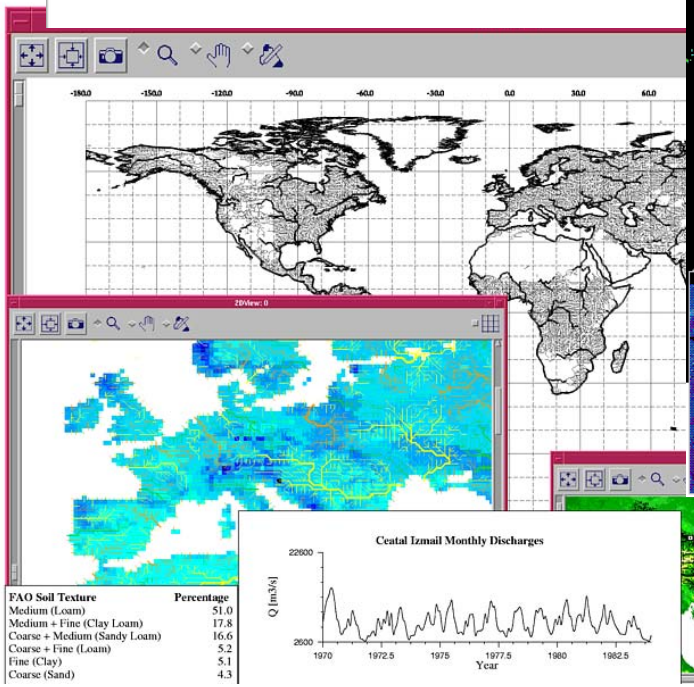
High Technology Earth Systems Tools

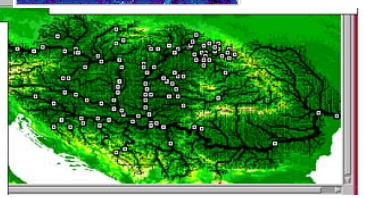
- Satellite data
- Simulation models
- Geospatial analysis tools

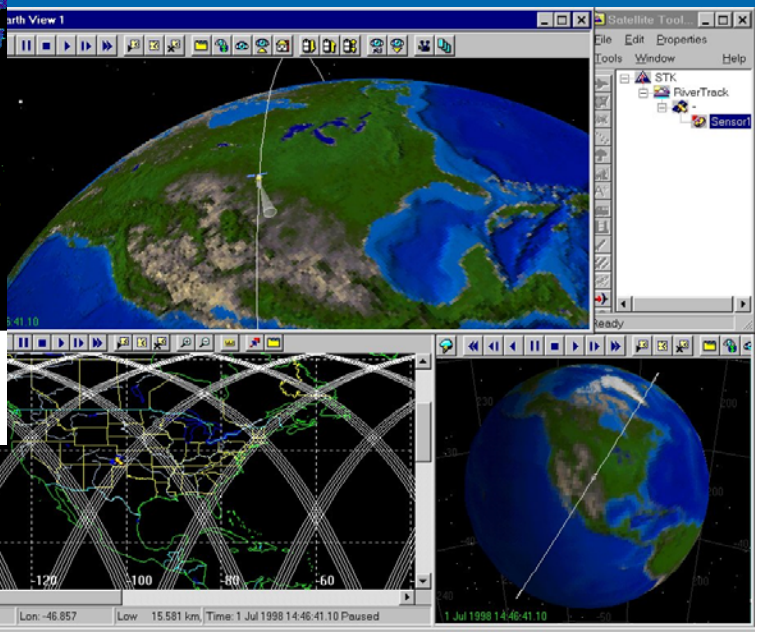
They show promise but…..











The TIGER/SHIP Initiative

TIGER/SHIP

is a concrete step to implement the outcome of the Johannesburg Summit, focusing on

Space – Water - Africa

Need for a new initiative

2002 World Summit on Sustainable Development (Johannesburg)

2003 3rd World Water Forum (Kyoto, Shiga & Osaka)

- **Necessity to improve risk management measures, technologies and capacity building relevant to flood-related disasters**

United Nations Educational, Scientific and Cultural Organization (UNESCO)

International Hydrological Programme (IHP)

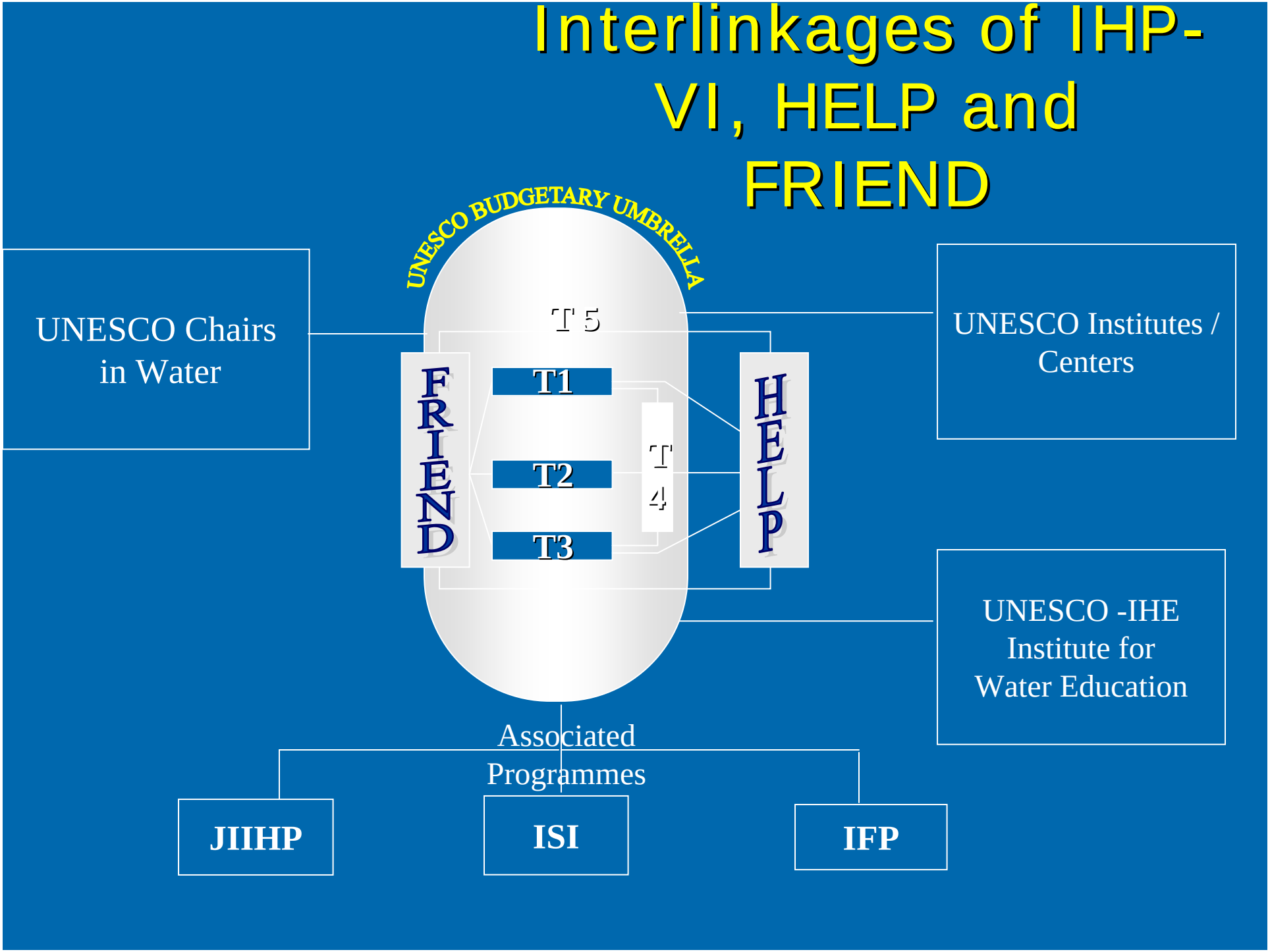
WATER INTERACTIONS: SYSTEMS AT RISK AND SOCIAL CHALLENGES

Plan for the

International Hydrological Programme of UNESCO Phase VI

(2002-2007)

Interlinkages of IHP-VI, HELP and FRIEND



The UN inter-agency International Flood Initiative /Programme

Mission Statement:

The International Flood Initiative promotes an integrated approach to flood management in order to maximize the long-term net benefits of floods and minimize the loss of life, goods and other assets that result from floods.

International Hydrological Programme

Guiding Principles

- Living with floods
- Interdisciplinarity
- Empowered participation
- International and Regional cooperation
- Science and technology for flood management

Strategic Activities

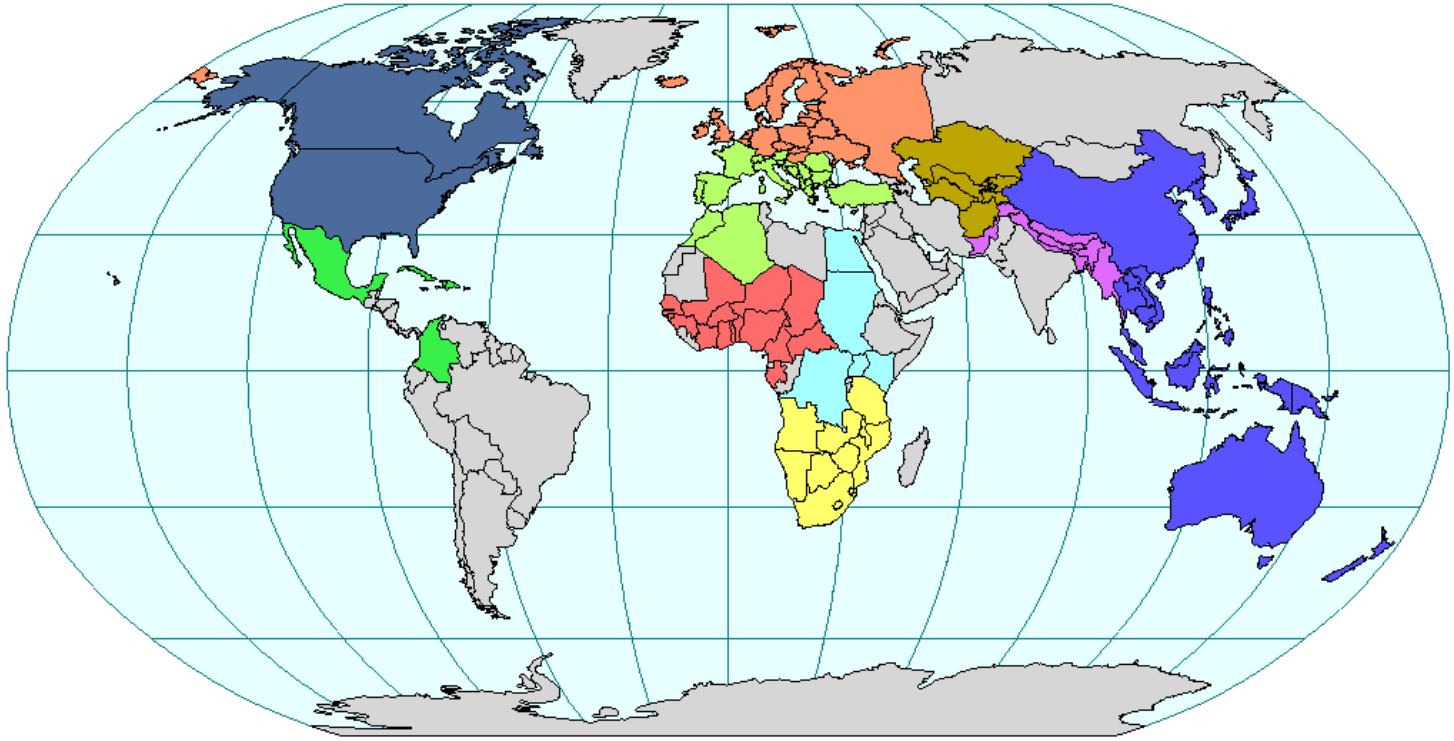
- Research
- Training
- Information networking
- People networking for good governance
- Technical assistance

Flow Regimes from International Experimental and Network Data

An International Collaborative Study

in Regional Hydrology

F R I E N D - A GLOBAL PROJECT



Established

- N Europe
- AMHY
- Southern Africa
- Asian Pacific
- HKH
- AOC
- Nile
- AMIGO

Emerging

- Central Asia
- N America

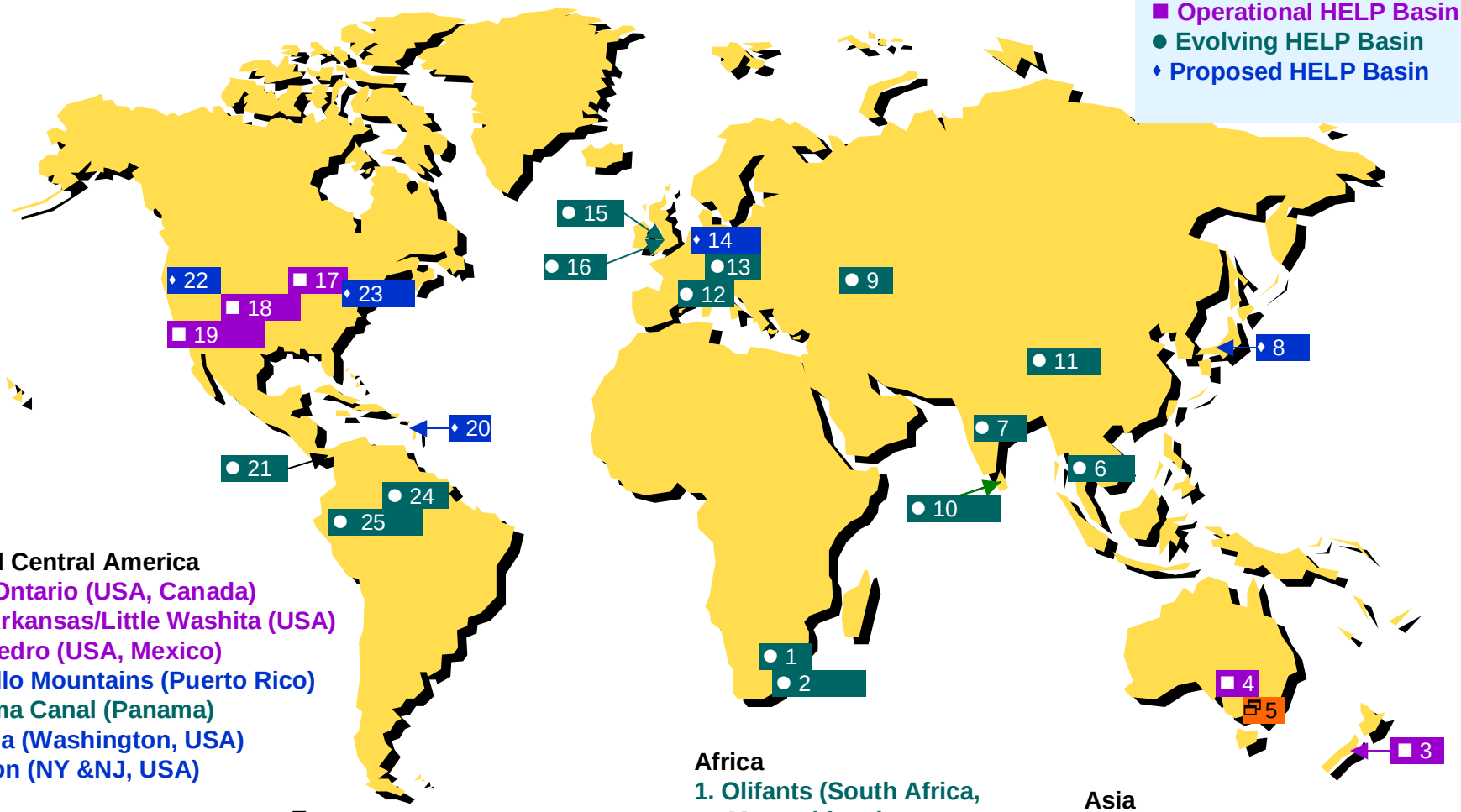
Hydrology for the Environment, Life and Policy (HELP)

To deliver social, economic and environmental benefit to stakeholders through sustainable and appropriate use of water by directing hydrological science towards improved integrated catchment management basins

HELP
Real people
Real catchments
Real answers

HELP PILOT PHASE DRAINAGE BASINS

- Reference HELP Basin
- Operational HELP Basin
- Evolving HELP Basin
- Proposed HELP Basin



North and Central America
17. Lake Ontario (USA, Canada)
18. Red-Arkansas/Little Washita (USA)
19. San Pedro (USA, Mexico)
20. Luquillo Mountains (Puerto Rico)
21. Panama Canal (Panama)
22. Yakima (Washington, USA)
23. Hudson (NY &NJ, USA)

South America
24. Rio Jau and/or Rio Branco or Ji-parana (Brazil)
25. Rio Jequetepeque (Peru)

Europe
12. Herault (France)
13. Danube (5 countries in Europe)
14. Spree-Havel (Germany)
15. Upper Severn (UK)
16. Thames (UK)

Middle East (None)

Africa
1. Olifants (South Africa, Mozambique)
2. Thukela (South Africa)

Australasia
3. Motueka (New Zealand)
4. Mount Lofty (Australia)
5. Murrumbidgee, sub-basin of Murray Darling (Australia)

Asia
6. NE of Thailand and Vietnamese Delta, sub-basins of Mekong (6 countries in Asia)
7. Subernarekha (India)
8. Yasu or Tama (Japan)
9. Aral Sea (Central Asia)
10. Walawe (Sri Lanka)
11. Tarim (China)

Where is the Initiative heading?

- The Initiative is to be launched at the UN World Conference on Disaster Reduction, Kobe, Japan on 18-22 January 2005

- The planned International Centre for Water Hazard and Risk Management (CHARM) under the auspices of UNESCO --hosted by the Public Works Research Institute (PWRI) in Tsukuba, Japan-- is expected to be a global facility responsible for the Initiative

The International Centre For Water Hazard and Risk Management under the auspices of UNESCO

(UNESCO-CHARM)

Framework of UNESCO-CHARM

- The new Centre will be established within PWRI as a global centre under the auspices of UNESCO (Category 2) in autumn 2005

- The new Centre will be collaborating with the UNESCO-IHP networks, relevant UN agencies and other key institutes & organizations of the world

- The new Centre is expected to be a global facility responsible for the International Flood Initiative

International Hydrological Programme

A Blueprint of the Centre Building

- **Research Staff** : 20 (at the initial stage)
- **Center building** : will be completed in autumn 2005
- **Office space** : 2,000m²