

OSCE 23rd OSCE Economic and Environmental Forum

**Water governance in the OSCE area – increasing security
and stability through co-operation”**

**FIRST PREPARATORY MEETING
26-27 January, 2015**

**Session VI: Opportunities for exchange of
knowledge and experience in water
governance**

**András Szöllösi-Nagy
World Water Council**

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KEY CHANGES SINCE 1900

- The world's population has increased 3-fold
- Water withdrawal has increased 6-fold
- The area of cropland has almost doubled
- The area of pasture has decreased by about 75%
- The area covered by tropical forests has decreased by about 25%.
- Dams now intercept ca. 40% of the runoff from the continents

LOOMING WATER CRISES

The time of easy water is over



**A CRISIS OF
GOVERNANCE**

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**GOVERNANCE
versus
MANAGEMENT**

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GOVERNANCE:
Doing the right things

MANAGEMENT:
Doing things right

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Accountability
Transparency
Integrity
Gender
Equity
Informed decisions
**Knowledge transfer and sharing from data
to science**
Conflict resolution
Participation
Inclusive approach
Rule of Law

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SDG post-2015 ...



NEED FOR SMART WATER SDG

- **Specific**
- **Measurable**
- **Attainable**
- **Replicable**
- **Timed**

WASH

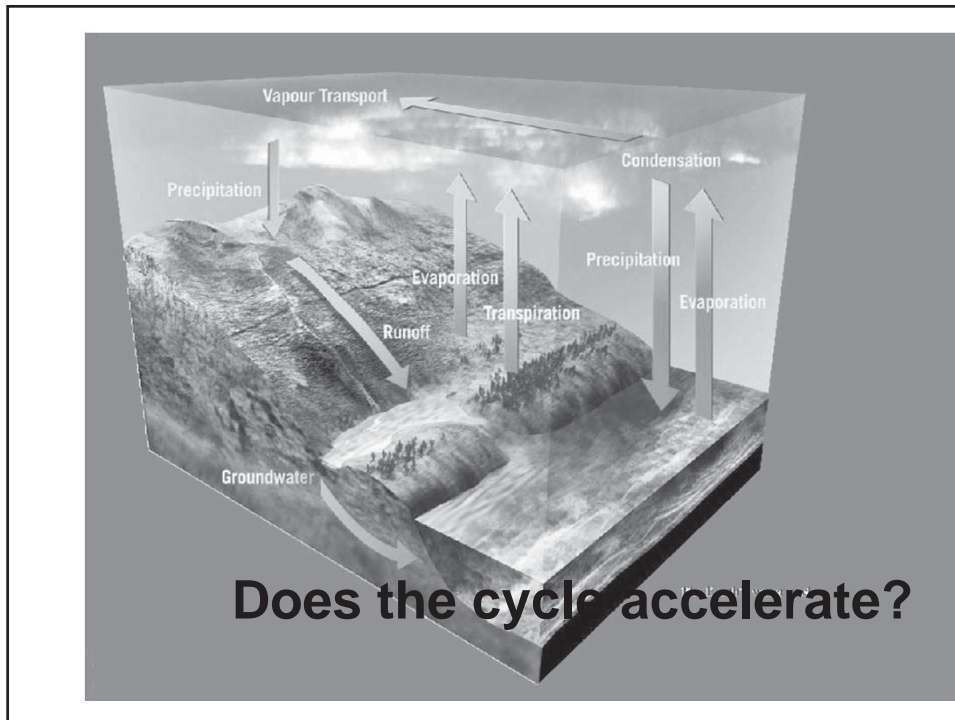
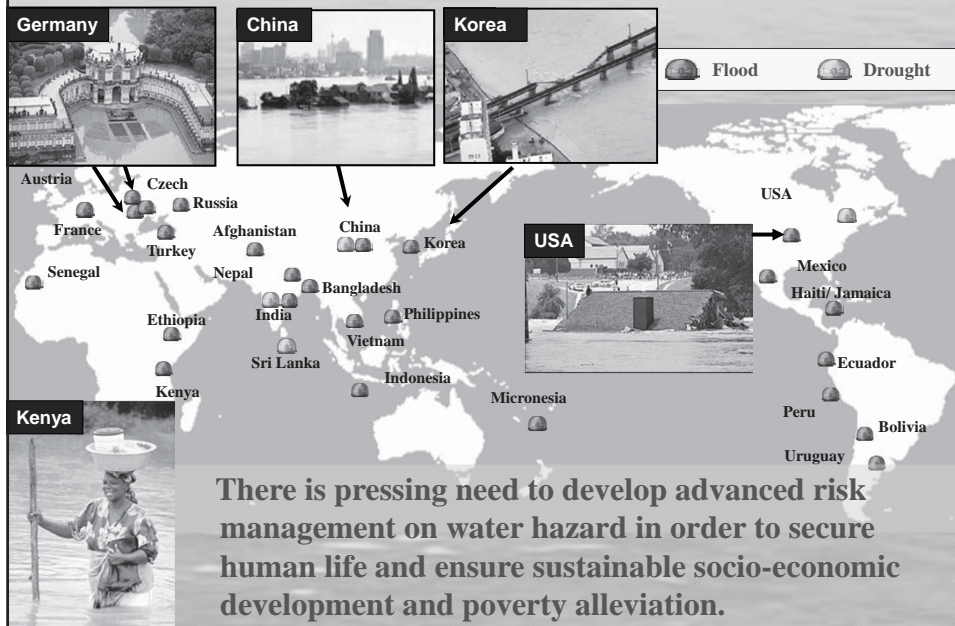
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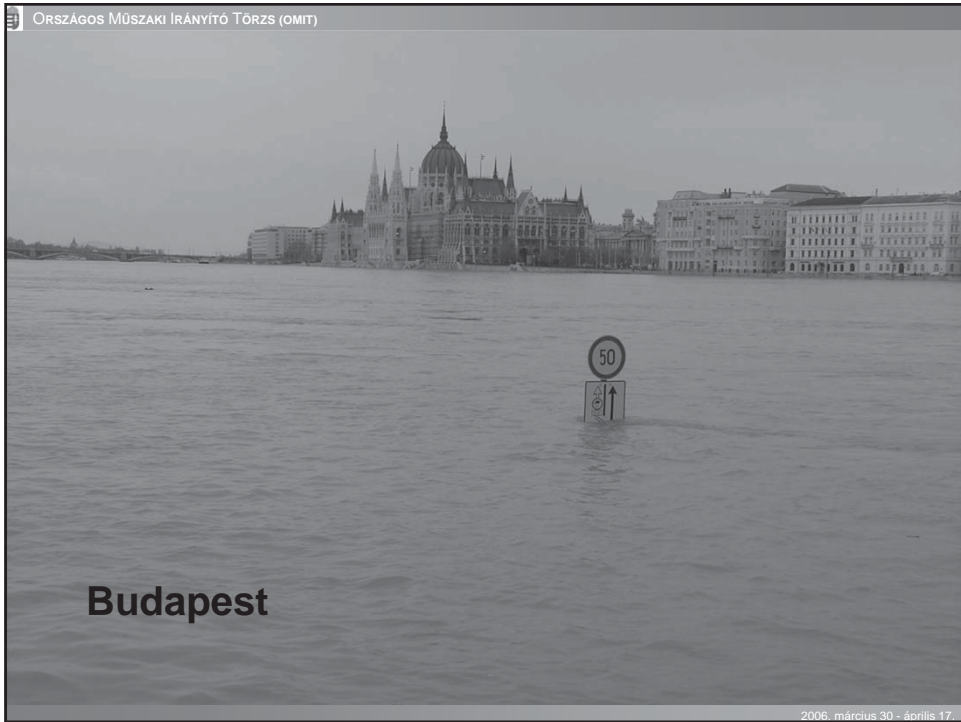
ADDITIONAL CHALLENGES THAT NEED TO BE CONSIDERED

- **HYDROLOGICAL EXTREMES**
- **CLIMATE ADAPTIVE WATER STRATEGIES**
- **TRANSBOUNDARY ISSUES**
- **ECOSYSTEM SERVICES**
- **CAPACITY DEVELOPMENT**

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Major floods and droughts worldwide in 2002







CLIMATE ADAPTIVE WATER STRATEGIES

WHAT SHOULD WE DO?

WE NEED TO INCREASE THE
RESILIENCE
OF OUR SYSTEMS

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ADAPTATION OPTIONS:

- MORE STORAGE
- MORE HYDROPOWER
- MORE GROUNDWATER USE
- MORE INLAND NAVIGATION
- INTERBASIN WATER TRANSFER
- CONSERVATION
- **GOOD GOVERNANCE**
-
-

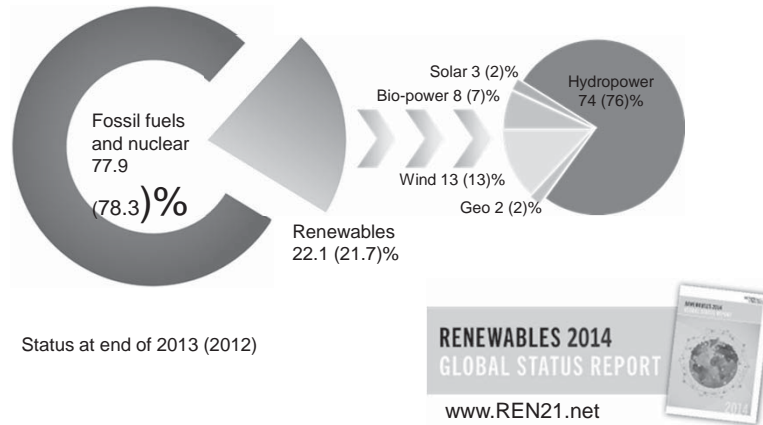
**POTENTIAL SOURCE(S)
OF CONFLICTS**

**HUMANITY WILL NEED MORE
STORAGE SPACE**

**STORAGE IS THE NEXUS BETWEEN
WATER / FOOD / ENERGY**

Global Overview

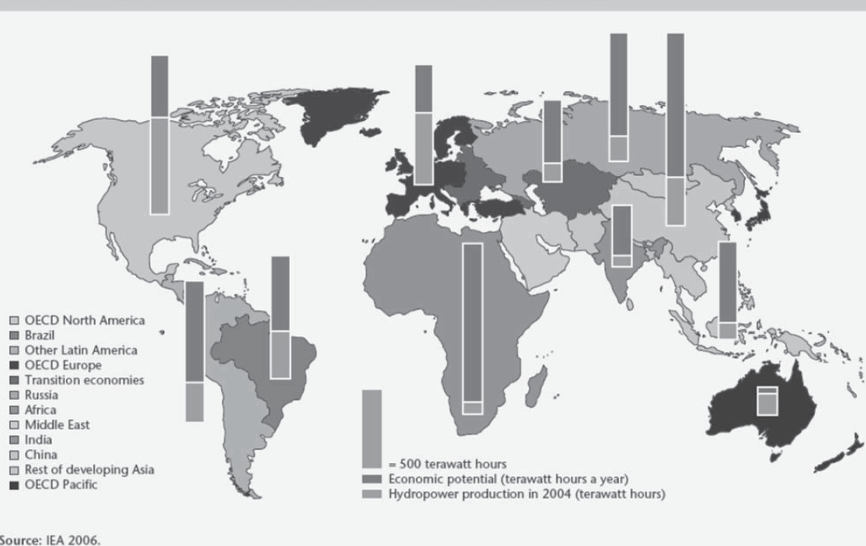
Renewable energy's share of global electricity production, 2013





Source: REN21 Renewables 2013 Global Status Report

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Map 7.6 World potential and current hydropower production, 2004





THE HYDROPOWER CHALLENGE


GLOBAL TRENDS 2030:
**ALTERNATIVE
 WORLDS**
a publication of the National Intelligence Council

Four overarching megatrends will shape the world in 2030:

- Individual Empowerment.
- The Diffusion of Power.
- Demographic Patterns.
- The Growing Nexus among Food, Water, and Energy

National Security (2012)

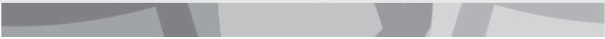


GLOBAL TRENDS 2030:
**ALTERNATIVE
 WORLDS**
a publication of the National Intelligence Council

Four overarching megatrends will shape the world in 2030:

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

- The Growing Nexus among Food, Water, and Energy





**WAR OVER WATER
OR
TRANSBOUNDARY
COOPERATION OVER
WATER?**

"The next war in the Middle East will be fought over water, not politics."

Boutros Boutros Ghali, former UN Secretary General in 1985

"The wars of the next century will be about water."

Ismail Serageldin, former vice president of the World Bank in 1999

"Fierce competition for fresh water may well become a source of conflict and wars in the future."

Kofi Annan, former U.N. Secretary-General in 2001

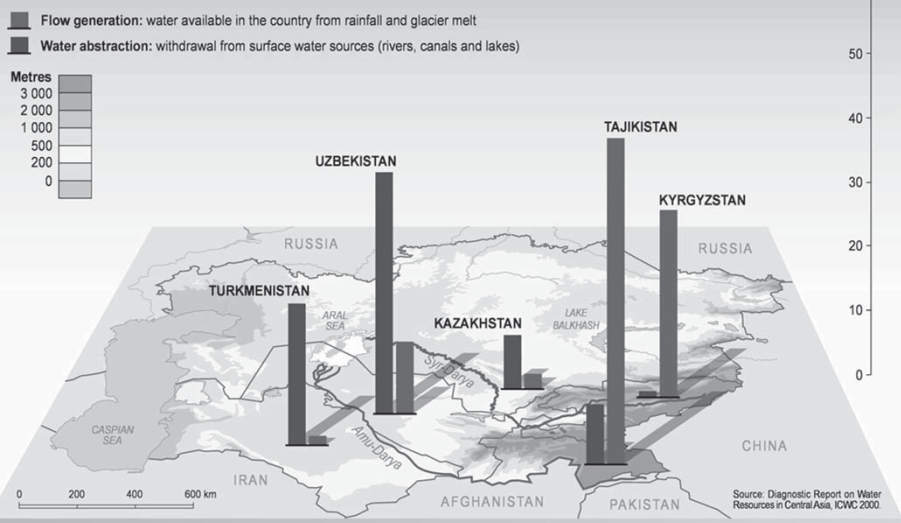
The Tigris Euphrates basin



The Aral Sea basin



Water withdrawal and availability in the Aral Sea basin



THE MAP DOES NOT IMPLY THE EXPRESSION OF ANY OPINION ON THE PART OF THE AGENCIES CONCERNING THE LEGAL STATUS OF ANY COUNTRY, TERRITORY, CITY OR AREA OF ITS AUTHORITY, OR DELINEATION OF ITS FRONTIERS AND BOUNDARIES.
 MAP BY VIKTOR NOVIKOV AND PHILIPPE REKACEWICZ - UNEP/GRID-ARENDA - APRIL 2005

Number of treaties per basin



UN Convention on the Law of Non-Navigational Uses of Transboundary Watercourses 1997

- Consistent with state practice
- Comprises earlier efforts of codification
- Adopted equitable utilization as leading principles of international water law, with a list of factors to be used for determination of equitability of share
- Adopted the principle of “no significant harm”
- Ratification process en route

Needed: 35
Obtained: 16

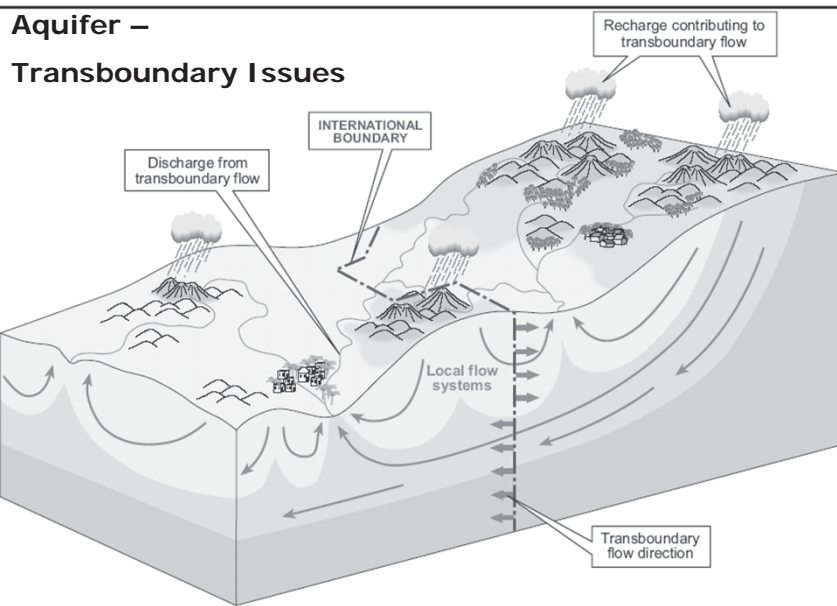
(In force after 27 + 18 years of negotiation and discussion)

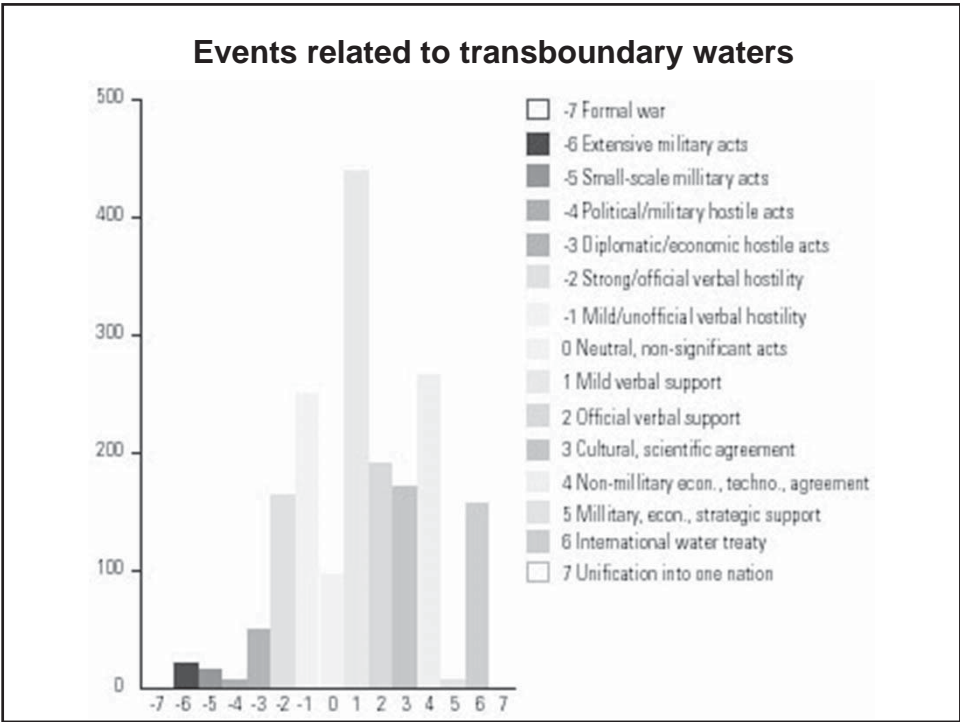
Water Conflict and Cooperation Indicators



“The likelihood of conflict rises as the rate of change within the basin exceeds the institutional capacity to absorb that change.”

What are indicators?

- **Uncoordinated development: a major project in the absence of a treaty or commission**
- **“Internationalized basins”**
- **General animosity**






The challenge we all have

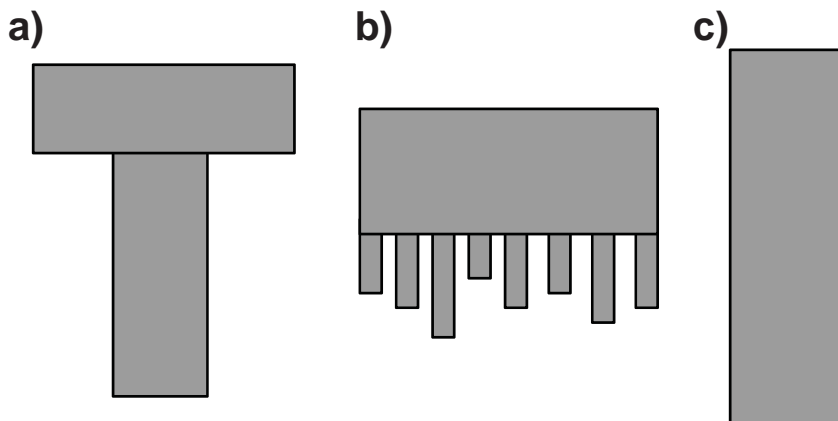
How to put water in the minds of people?



What does that mean for Water Education?

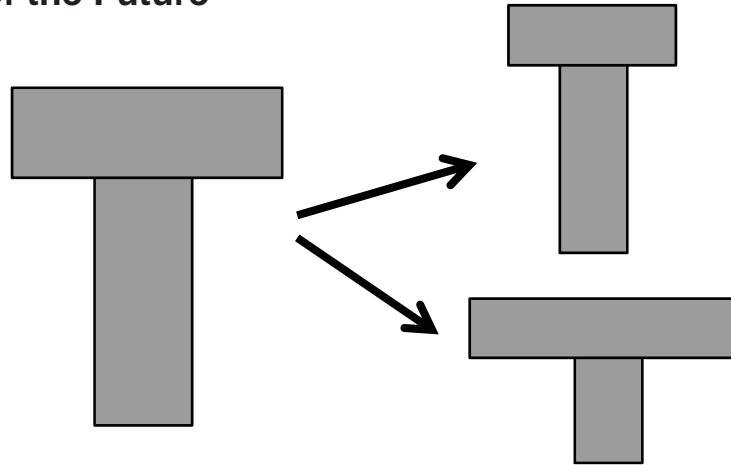


Comparison of Competency Profiles



(a) T-shaped professionals, (b) generalists, and (c) I-shaped professionals

T-shaped Competency Profile for water experts of the Future



(Source: UNESCO-IHE Reform Document, 2010)

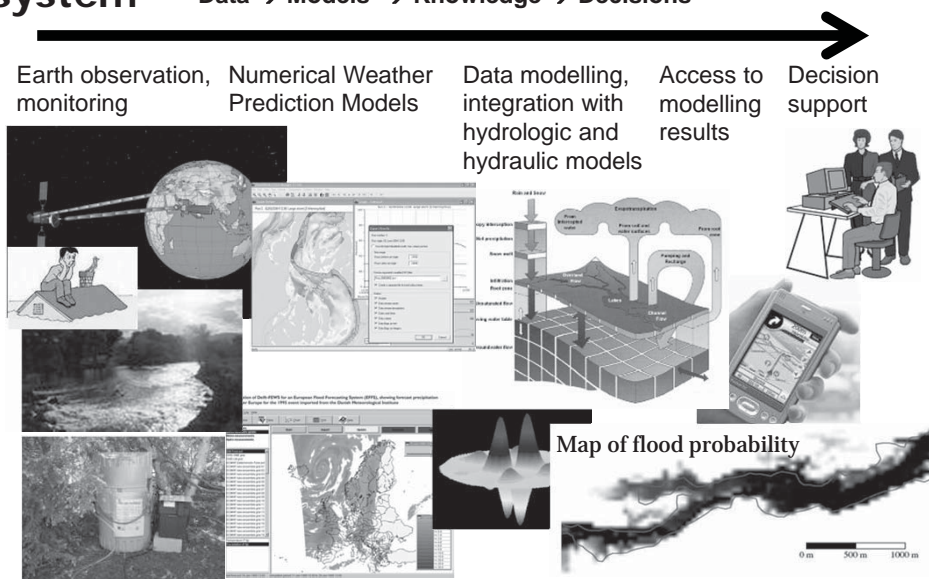
UNESCO-IHE
Institute for Water Education



**IF YOU CAN'T MEASURE IT,
YOU CAN'T MANAGE IT**

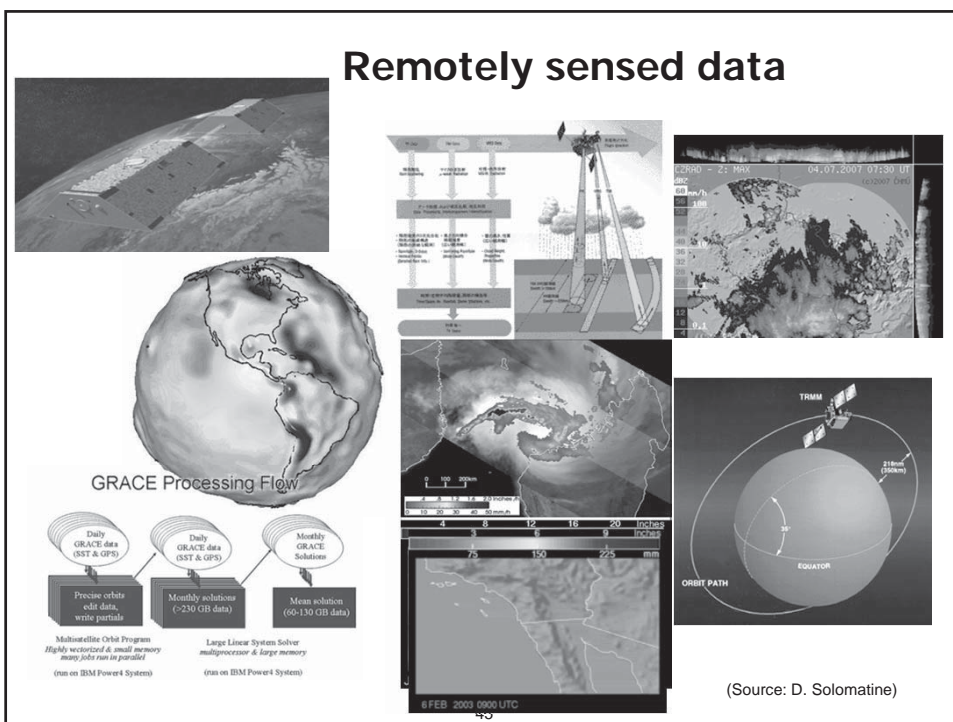
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Flow of information in a Hydroinformatics system Data → Models → Knowledge → Decisions



Source: D. Solomatine

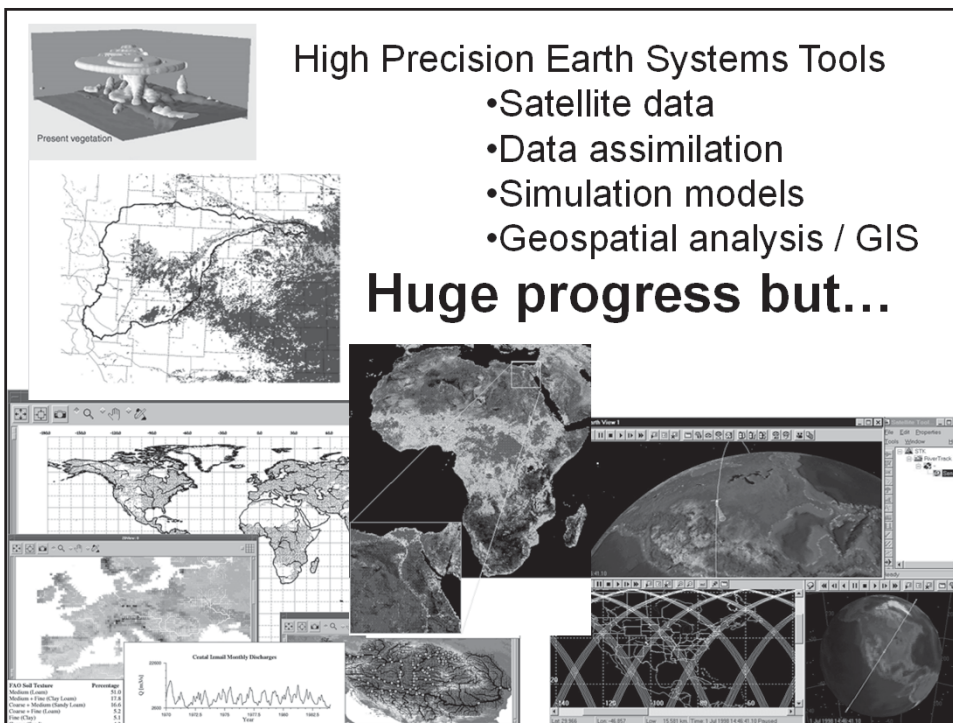
Remotely sensed data



High Precision Earth Systems Tools

- Satellite data
- Data assimilation
- Simulation models
- Geospatial analysis / GIS

Huge progress but...



Our capacity to monitor remains limited

Map 13.1 Distribution of Global Runoff Data Centre streamflow gauges



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WORLD WATER DEVELOPMENT REPORT 31

**SO, WILL THERE BE
ENOUGH WATER FOR
THE**

OSCE COUNTRIES

IN THE 21ST CENTURY?

YES, BUT

WE NEED SOLUTIONS NOW

7th World Water Forum, Daegu, March, 2015

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We need to generate ...

- The political will to ... **DO IT**
- The capacity to ... **DO IT RIGHT**
- The resources to ... **DO IT RIGHT NOW**



WATER RESOURCES MANAGEMENT IS ESSENTIALLY A
POLITICAL PROCESS



river + dike = Political
Order



Budapest Water Summit

October, 2013

A Sustainable World is a Water-Secure World



OWG July 2014 SDG #6:

Ensure availability and sustainable management of water and sanitation for all

- By 2030, achieve **universal and equitable access to safe and affordable drinking water** for all
- by 2030, achieve **access to adequate and equitable sanitation and hygiene** for all, and **end open defecation**, paying special attention to the needs of women and girls and those in vulnerable situations
- by 2030, improve water quality by **reducing pollution, eliminating dumping and minimizing release of hazardous chemicals** and materials, halving the proportion of untreated wastewater, and increasing recycling and safe reuse by x% globally
- by 2030, substantially **increase water-use efficiency** across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity, and substantially reduce the number of people suffering from water scarcity

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- by 2030 **implement integrated water resources management** at all levels, including through **transboundary cooperation** as appropriate
- by 2020 **protect and restore water-related ecosystems**, including mountains, forests, wetlands, rivers, aquifers and **lakes**
- by 2030, **expand international cooperation and capacity-building** support to developing countries in water and sanitation related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies
- support and strengthen the participation of **local communities** for improving water and sanitation management

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History and Mandate



Julian Huxley
1946 - 1948

The Preamble to the Constitution of UNESCO declares that **'since wars begin in the minds of men, it is in the minds of men that the defences of peace must be constructed'**.

Constitution of the United Nations Educational, Scientific and Cultural Organization

Adopted in London on 16 November 1945

...the wide diffusion of culture, and the education of humanity for justice and liberty and peace are indispensable to the dignity of man ...

...peace must be therefore be founded, if it is not to fail, upon the intellectual and moral solidarity of mankind.

"In consequence whereof they do hereby create the United Nations Educational, Scientific and Cultural Organization for the purpose of advancing, through the educational and scientific and cultural relations of the peoples of the world, the objectives of international peace and of the common welfare of mankind for which the United Nations Organization was established and which its Charter proclaims".

FINAL MESSAGE:

"Anybody who can solve the problems of water will be worthy of two Nobel Prizes, one for peace and one for science."

(President John. F. Kennedy)