



2015 UN-Water Annual  
International Zaragoza  
Conference

15–17 January 2015

Water and Sustainable Development  
**From vision to action**



# **Integrative and adaptive risk governance, management and monitoring for SDG implementation**

**Claudia Pahl-Wostl & Janos Bogardi**  
**Co-Chair and Senior Advisor**  
**Global Water System Project (GWSP)**



The political statement of the Budapest Water Summit:

## **A SUSTAINABLE WORLD IS A WATER SECURE WORLD**

*A dedicated water goal with SMART(ER) targets to*

- (a) Achieve universal access to safe drinking water and sanitation*
- (b) Improve integrated and cross-sectoral approaches to water management*
- (c) Reduce pollution and increase collection, treatment and re-use of water*
- (d) Increase resilience against the water related impacts of global changes and disasters and water insecurity*



# NEED FOR SMART(ER) WATER SDG

- Specific
- Measurable
- Attainable
- Realistic
- Timely
- Evaluated
- Re-evaluated

***MONITORING IS KEY!***



## OWG Proposal for SDGs July 2014:

### Goal 6. Ensure availability and sustainable management of water and sanitation for all

- By 2030 universal, equitable access to safe water and adequate sanitation
- By 2030 improve water quality; reduced pollution, recycling, halving untreated wastewater
- By 2030 increase water use efficiency in all sectors, sustainable withdrawals, reduce suffering from water scarcity
- By 2030 implement IWRM at all levels incl. transboundary cooperation
- By 2020 protect and restore water-related ecosystems
- **By 2030 expand cooperation and capacity building and technology transfer towards developing countries**
- **Support and strengthen participation of local communities**



## Can be Water Security the Key? Definitions

- *“Water security means ensuring that freshwater, coastal and related ecosystems are protected and **improved**; that sustainable development and political stability are promoted, that every person has access to **enough** safe water at an **affordable** cost to lead a healthy and productive life, and that the vulnerable are protected from the **risks** of water-related hazards.” (2nd World Water Forum, 2000)*
- *“Water security can be defined as the availability of an **acceptable** quantity and quality of water for health, livelihoods, ecosystems and production, coupled with an **acceptable** level of water-related risks to people, environments and economies”. (Grey and Sadoff, 2007)*



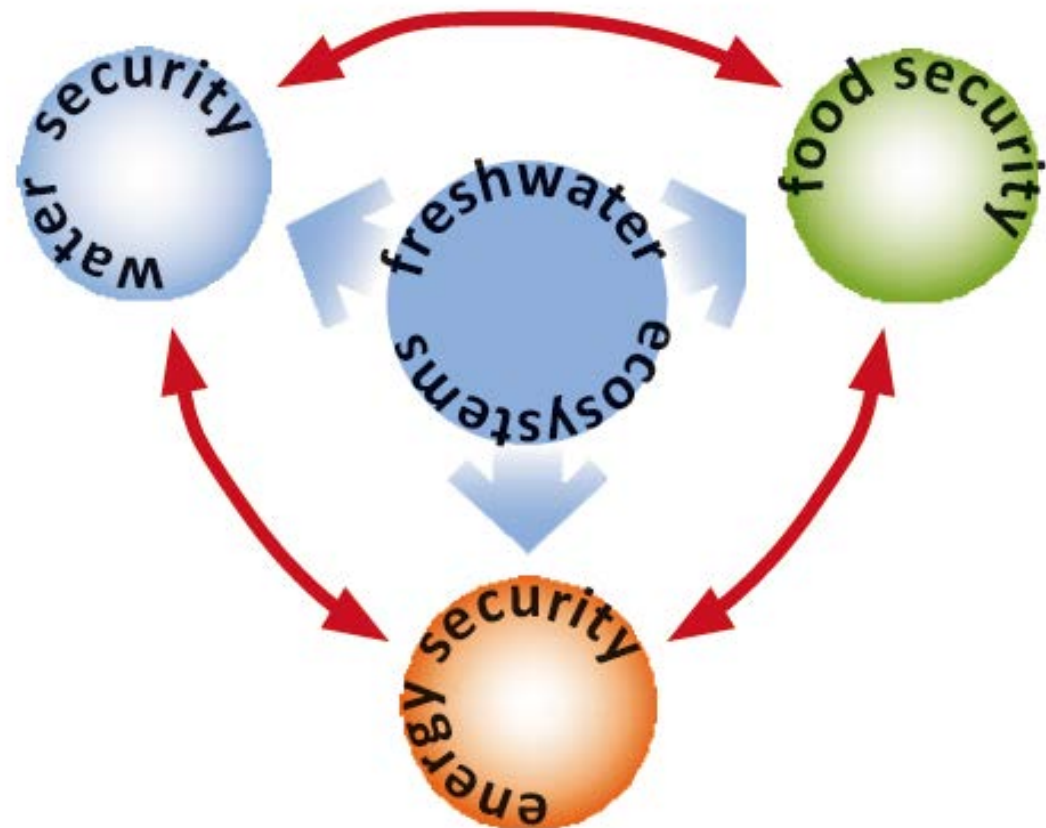
# SDGs and Risk Governance

- **SDGs formulated as individual goals – but they are interdependent**
- **Policies in one domain may have negative or positive impacts on other domains**
- **Example – Water-Energy-Food Nexus**
- **Need for putting in place effective risk assessment and risk governance addressing complexities and interdependence of policy domains**



**Water-Energy-Food Security Nexus, its links to freshwater ecosystems just indicate the complexities**

**the achievement and monitoring of 17 SDGs including their resp. water components may imply. Without a balanced progress across all the SDGs additional risks may emerge.**





## **The W-E-F Nexus virtually encompasses all 17 SDGs**

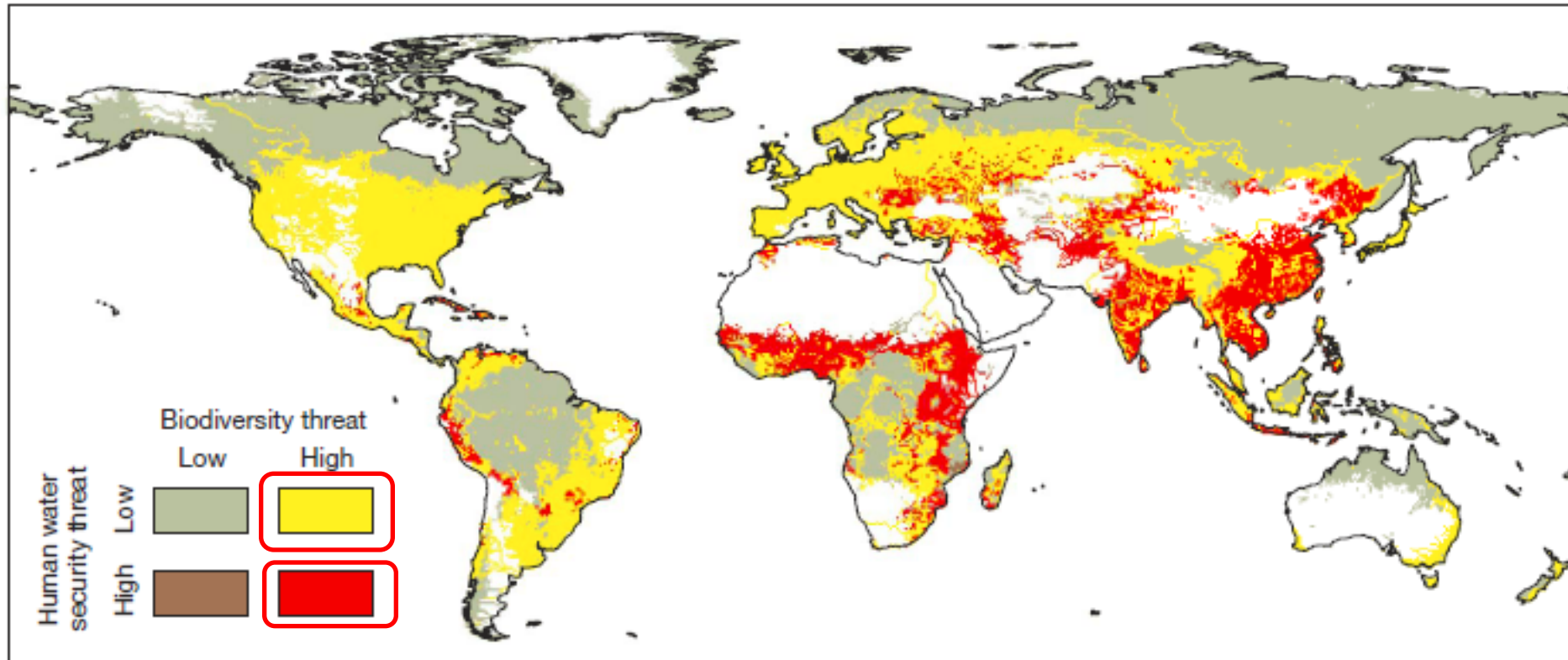
# **Sustainability for W-E-F through Integrated Water Information and Improved Governance**

- **Cluster Activity supported by Future Earth**
- **How can the information available through Earth Observations be effectively used to support the needs of decision makers and promote sustainability in the W-E-F Nexus?**
- **How can governance frameworks, decision-making processes, and the commitment to sustainability enable the effective application of this information?**





# Prevailing patterns of threat to human water security and biodiversity





2015 UN-Water Annual  
International Zaragoza  
Conference

15–17 January 2015

# Water and Sustainable Development

## From vision to action



# WATER ?

- Is the cycle changing?
- Increased risks?
- Growing vulnerability?
- More disasters ?
- Less water for people?
- Crisis is looming?
- What crisis?
- Global or local?





# Towards risk reduction in all aspects

**WE NEED TO INCREASE THE  
RESILIENCE**

**but also the robustness, resistance and  
responsiveness and redundancy**

**-while mitigating**

**the vulnerability and exposure-**

**OF OUR WATER SYSTEMS *AND PEOPLE!***



## Some not so good news

- **Storage is the key nexus link between water, energy and food security**
- **Humanity will need more storage (also that of water) in order to achieve the SDGs and improve „resilience“**
- **Storage mitigates, however does not eliminate risks and impacts ecosystems**



# Need for action in risk governance related to SDGs

- More attention required to systemic and emerging risks
- Integrated and adaptive risk governance required to deal with interconnectedness
- Adaptive and integrated risk assessment and management needed
- Early warning signals – appropriate monitoring systems to be put in place
- Multi-level approaches – how to govern risks at which level



## Proposed SMARTER Water SDG targets for consideration

### Increase “resilience” against water related global change impacts

By 2030 all countries halve their population exposed to high water-related disaster risk under natural hazards by developing resilient water infrastructure and non-structural measures:

- By 2025 universal access to basic risk maps and early warning for extreme natural hazards will be provided;
- By 2020 ensure that the population without protection from water-related hazards below 10 year return period is safe;
- By 2025 reduce annual groundwater depletion rate by 50%;
- By 2030 ensure that the population without protection from water-related hazards below 50 year return period is safe;





## Proposed SMARTER Water SDG targets for consideration

Capacity development, education, research, monitoring,  
assessment

- By 2025 The efficiency of water-related data capturing and monitoring capabilities will be doubled.
- By 2025 The number of ground-truthing hydro-meteorological observation stations will be increased by 20%.
- By 2025 Science based national water assessments will be updated every 5 years and will be in place everywhere. By 2020 national water assessments will drive the comprehensive global UN water assessments.
- By 2020 improved capacity development programmes are in place



2015 UN-Water Annual  
International Zaragoza  
Conference

15–17 January 2015

Water and Sustainable Development

From vision to action

# CONCLUSIONS



The dedicated Sustainable Development Goal for Water should encompass all major water-related issues, ranging from access to drinking water, sanitation, through waste water treatment and health of aquatic ecosystems all the way to disaster risk reduction, water management, governance and international cooperation, including appropriate capacities to achieve it;

A robust science-based and internationally mandated process to regularly monitor, review and assess progress of the implementation of the water goal (achievement of SMARTER targets) should be set up.

*Material provided by Profs A. Szöllösi-Nagy and Ch. Vörösmarty are gratefully acknowledged*