

UNESCO International Scientific Symposium  
**Scientific, Technological and Policy Innovations for Improving Water Quality  
Monitoring in the Post-2015 SDGs Framework**  
Kyoto – Otsu, Japan / 15-18 July 2015  
organized under  
**UNESCO-IHP International Initiative on Water Quality (IIWQ)**

**Setting the scene:**  
**Improving water quality for post-2015  
sustainable development**

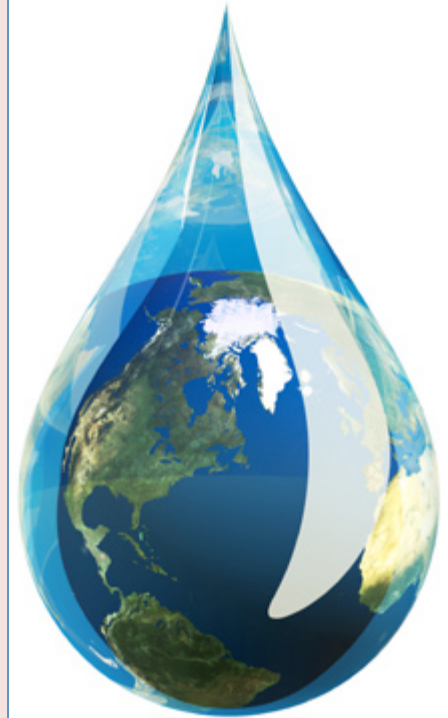
**Sarantuyaa Zandaryaa, UNESCO**  
**Yosuke Yamashiki, Kyoto University**

# Water quality is a key element of water security

The capacity of a population to safeguard access to **adequate quantities of water of acceptable quality** for sustaining **human and ecosystem health** on a watershed basis, and to ensure **efficient protection** of life and property against water related hazards - floods, landslides, land subsidence, and droughts.

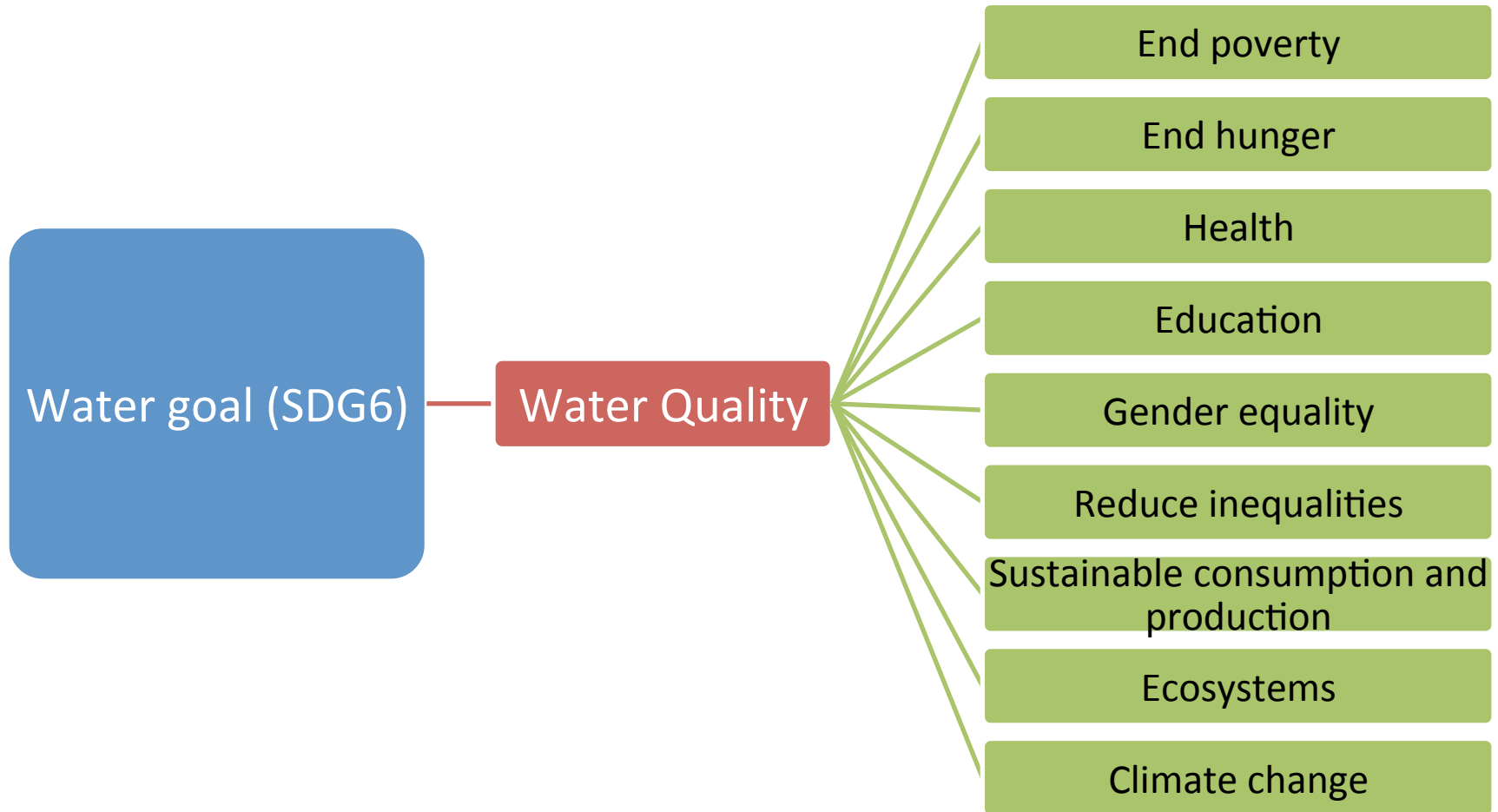
**IHP-VIII for 2014-2021:**

*“Water Security: Responses to Local, Regional and Global Challenges”*



# **Water quality in the post-2015 sustainable development**

# Water quality in the post-2015 Sustainable Development Goals (SDGs) framework



# Goal 6 (SDG6): Ensure availability and sustainable management of water and sanitation for all

## Target 6.1

- Achieve universal and equitable access to **safe and affordable drinking water for all**

## Target 6.2

- Achieve access to adequate and equitable **sanitation and hygiene for all**

## Target 6.3

- **Improve water quality** by **reducing pollution**, eliminating dumping and minimizing release of hazardous chemicals, untreated **wastewater** and doubling recycling and **safe reuse**

## Target 6.4

- **Increase water-use efficiency**

## Target 6.5

- **Implement integrated water resources management at all levels, including through transboundary cooperation**

## Target 6.6

- **Protect and restore water-related ecosystems**

# Water Quality in other Sustainable Development Goals

## Goal 12 SCP

- Sound management of chemicals and all wastes, Reduce the release of **wastes** to **air**, **water** and **soil** (12.4)

## Goal 15 Ecosystems

- Restoration of **terrestrial and freshwater ecosystems** (15.1)

## Goal 1 Poverty

- Access to **basic services, natural resources...** (1.4)

## Goal 3 Health

- Combat **water-borne diseases** (3.3)
- Reduce deaths and illnesses from hazardous **chemicals, air, water and soil pollution** (3.9)

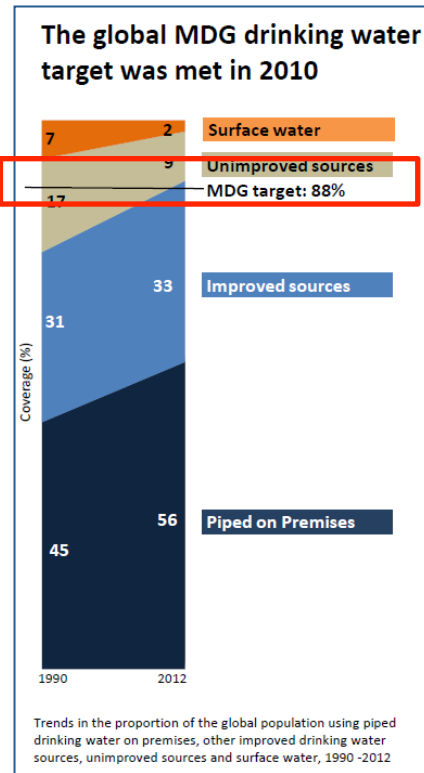
# SDG Targets 6.1 & 6.2: Achieve universal access to safe drinking water and sanitation for all

## Drinking water

**116 countries** have met the MDG target on drinking water

**> 2 billion people** have gained access to improved drinking water sources

**748 million people** still lack access to an improved drinking water source



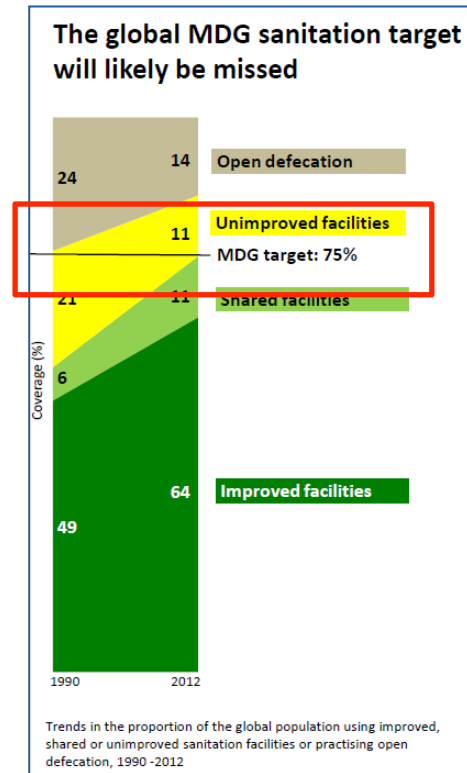
Source: A Snapshot of Progress –2014 Update WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation (JMP)

## Sanitation

**77 countries** have met the MDG target on basic sanitation

**2 billion people** gained access to improved sanitation

**2.4 billion people** without access to an improved sanitation facility in 2015 (estimated)





# SDG Target 6.3: Improve water quality and wastewater management, safe wastewater reuse

- **More than 80 %** of municipal wastewater in developing countries is discharged untreated
- Everyday, **2 million tons** of human waste are discharged into water bodies
- **70%** of industrial waste is dumped untreated into waters
- **20 million hectares** (**7%** of irrigated land) in more than **50 countries** are irrigated with raw or partially treated wastewater, **200 million farmers** are exposed to health risks of polluted water
- **Industrial pollution** is expected to increase in emerging market economies
- **Non-point pollution from agriculture and urban areas** is left uncontrolled, while it constitutes a greater total pollutant load than industrial point-source pollution
- **Emerging pollutants** present a new water quality challenge in both developed and developing countries



# **Social and economic costs of poor water quality**

- **Water-borne diseases: the 3<sup>rd</sup> biggest cause of under 5 child mortality**
- **Costs 260 billion \$/year to poor countries**
- **Economic losses caused by reduced ecosystem goods and services due to water pollution (loss of fisheries, aquaculture, food production, etc.)**
- **Economic losses due to biodiversity loss caused by water pollution (loss of ecotourism and local development)**

# **Improving water quality monitoring is needed**



## **To evaluate progress towards achievement of the post-2015 Sustainable Development Goals**

# Effective water quality monitoring is essential

- To identify water quality problems in receiving waters
- To design, plan and implement sustainable strategies and policies to enhance and protect water quality
- To evaluate the efficacy of pollution control and regulations strategies and solutions
- To support decision-making and investment prioritization

UNESCO International Scientific Symposium

**Scientific, Technological and Policy  
Innovations for Improving Water Quality  
Monitoring in the Post-2015 SDGs Framework**

# Symposium objectives

- Facilitating the **dissemination and sharing of scientific knowledge and best practices** on water quality monitoring
- Establishing a **state-of-the-art of scientific research, methodologies, tools, technologies and policy approaches** to water quality and wastewater monitoring
- Collecting **practical cases of new and innovative approaches** to water quality monitoring
- Facilitating **scientific collaboration** among experts and other stakeholders (policy makers, water professionals)
- Paving **further collaboration opportunities and joint initiatives under the UNESCO-IHP International Initiative on Water Quality**

# Symposium key topics

- Ensuring safe drinking water for the post-2015 sustainable development
- Ecological water quality monitoring of watershed
- New and innovative methodologies and tools for water quality monitoring
- Monitoring groundwater quality and quantity
- Water quality indicators, data and reporting
- Monitoring wastewater and reuse
- Monitoring emerging pollutants and radionuclides
- Water quality monitoring using GIS and remote sensing
- Economic aspects of water quality monitoring
- Policy, institutional, capacity building and cultural aspects of water quality monitoring





## UNESCO-IHP

# International Initiative on Water Quality

**A scientific cooperation programme aiming to promote scientific research, knowledge and policies to respond to water quality challenges towards ensuring water security for sustainable development**

## International Initiative on Water Quality

- **Established** in 2012 by the 20th session of the Intergovernmental Council of the International Hydrological Programme of UNESCO **at the request of UNESCO Member States**
- **Initiated by the Africa region**, as a follow up to the recommendations of UNESCO International Workshop on Addressing Water Quality Challenges in Africa in 2011
- An **umbrella programme for UNESCO-IHP activities in the area of water quality**, including **water quality, including safe drinking water, sanitation and wastewater management.**

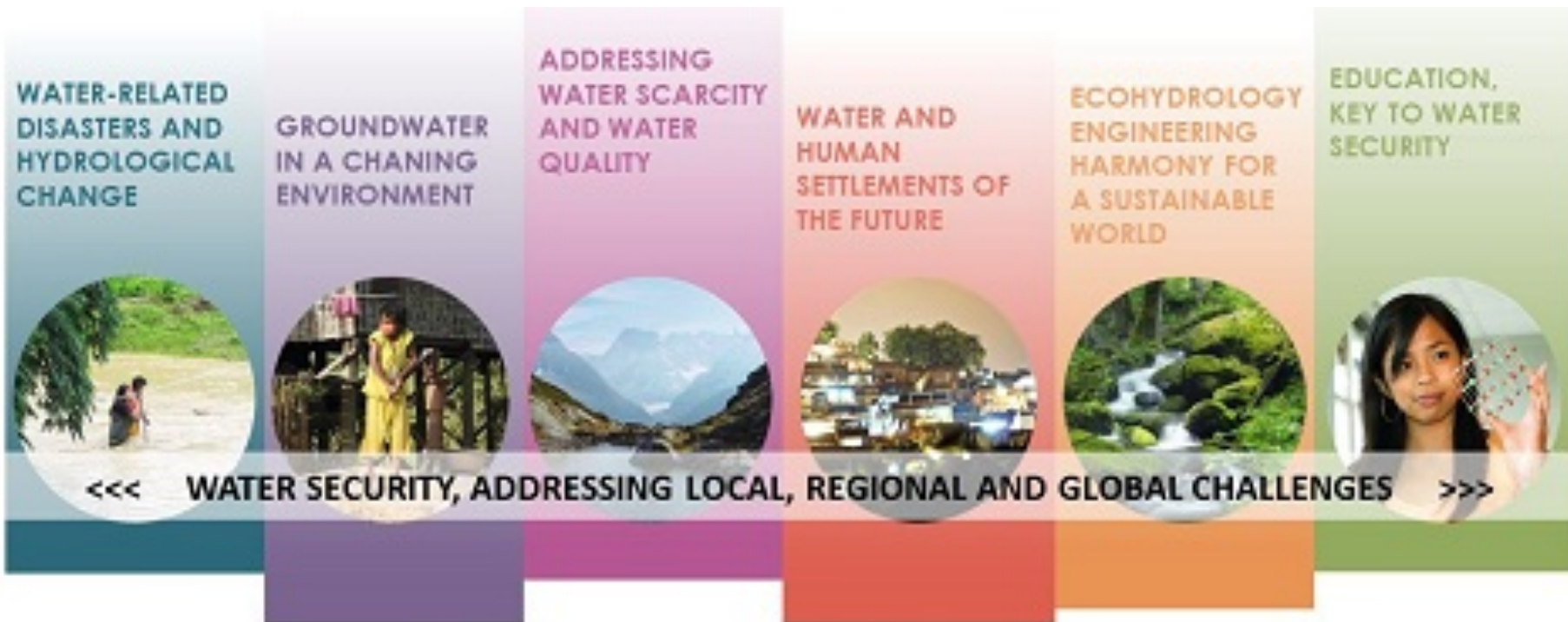
## International Initiative on Water Quality

### Aims at:

- Strengthening and mobilization of **the knowledge base and capacity building**
- Promoting **scientific and technological innovations**
- Fostering **scientific cooperation and exchange**
- Promoting **science-based policy-making** by bridging **the science-policy interface**
- **Raising awareness** of policy-makers and the public

### Focus areas:

- Water quality
- Wastewater management and reuse
- Safe water and sanitation



## IHP-VIII Theme 3: Addressing water scarcity and quality

**Activity: Addressing water quality challenges to ensure water security**

# IHP-VIII Theme 3:

## Addressing water scarcity and quality

- **Focal Area 3.4:**

Addressing water quality and pollution issues within an IWRM framework - improving legal, policy, institutional, and human capacity

- **Focal Area 3.5:**

Promoting innovative tools for safety of water supplies and controlling pollution

# Expected achievement of the Symposium

- Identifying global WQ issues by (i) region (ii) root causes (iii) economical status (iv) cultural background (v) technological gap
- Promoting engagement among institutions by sharing data/experiences/solutions for safety of water supplies and controlling pollution.
- Activating global/regional networks within UNESCO-IHP through mutual collaboration with other existing UN Water Network (UNEP GEMS/Water FAO Aquastat, WMO etc).



# Expected achievement of the Symposium Documentation

- Conclusive outcome reports of the symposium– by the end of August
- Full Selected Scientific paper– by the end of December
- Recommendation of the Symposium and achievement evaluation

# **Our Symposium is a contribution to the 50<sup>th</sup> Anniversary of UNESCO water programmes**



**50<sup>th</sup> Anniversary of International Hydrological Decade (IHD) – 1965-1974**

**40<sup>th</sup> Anniversary of International Hydrological Programme (IHP) – since 1975**



United Nations  
Educational, Scientific and  
Cultural Organization



International  
Hydrological  
Programme

# Thank you for your attention!

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