

# **IAHR Engagement in UN Water**

**Angelos FINDIKAKIS,** Bechtel Corporation and Stanford University, USA **Tom SOO**, IAHR Executive Director



# The UN Water Program

# Purpose

 Coordination of the United Nations organizations that carry out water and sanitation programs

#### Work

- Informs policy
  - Agenda 2030 for Sustainable Development
  - UN Convention Framework on Climate Change
  - Sendai Framework for Disaster Risk Reduction
- Monitors and Reports
  - Data on progress towards different initiatives, e.g. the SDGs
- Inspires action
  - Different campaigns, e.g. World Water Day, World Toilet Day



# The UN Water Program

#### Members

- More than 30 United Nations agencies
  - UNEP | United Nations Environment Programme
  - UNESCO | UN Educational, Scientific & Cultural Organization
  - FAO | Food and Agriculture Organization of the United Nations
  - IFAD | International Fund for Agricultural Development
  - UNCCD | United Nations Convention to Combat Desertification
  - UNECE | United Nations Economic Commission for Europe
  - UNECA | United Nations Economic Commission for Africa
  - UNIDO | United Nations Industrial Development Organization
  - UNCHR | The United Nations refugee Agency
  - UNICEF | United Nations Children's Fund
  - CBD | Convention on Biological Diversity
  - and several other agencies ...
    (see <a href="https://www.unwater.org/about-unwater/members/">https://www.unwater.org/about-unwater/members/</a>)



# The UN Water Program

#### Partners

- More than 30 organizations and associations
  - IAHR | Intern. Association for Hydro-Environment Engineering & Research
  - IAHS | International Association of Hydrological Sciences
  - IWRA | International Water Resources Association
  - IAH | International Association of Hydrogeologists
  - IWA | International Water Association
  - IGRAC | International Groundwater Resources Assessment Centre
  - IWMI | International Water Management Institute
  - IHA | International Hydropower Association
  - GWP | Global Water Partnership
  - SIWI | Stockholm International Water Institute
  - AquaFed | International Federation of Private Water Operators
  - IISD | International Institute for Sustainable Development
  - and several other organizations ... (see <a href="https://www.unwater.org/about-unwater/partners/">https://www.unwater.org/about-unwater/partners/</a>)



# IAHR Engagement in the UN Water Program

- Active involvement as a partner since January 2019
  - Participation in the semi-annual UN Water meetings
    - Jan 2019, Rome; Aug 2019 Stockholm; Jan 2020 Rome
  - Contribution to the World Water Development Report (WWDR)
    - Contributed to the 2020 WWDR on "Water and Climate Change"
    - Contributing to the 2021 WWDR on "Valuing Water"
    - Will contribute to the 2022 WWDR on "Groundwater"
  - Input to the UN Water Strategy 2030
  - Preparation of a white paper on the contribution of engineering to SDG6 (water and sanitation for all)
  - Participation in the celebration of World Water Day 2020



# **IAHR Engagement in the UN Water Program**

# Other opportunities for IAHR engagement

- Participation in Expert Groups & Task Forces
  - Expert Group on the 2030 Agenda for Sustainable Development
  - Expert Group on Drinking-Water, Sanitation and Hygiene (WASH)
  - Expert Group on Regional Level Coordination
  - Expert Group on Transboundary Waters
  - Expert Group on Water and Climate Change
  - Expert Group on Water Quality and Wastewater
  - Expert Group on Water Scarcity
  - Task Force on Unconventional Water Resources
  - Task Force on Water Action Decade Implementation



# **Panel Session**

# Climate Change & Adaptive Management Challenges & Issues

**Chairman:** Angelos FINDIKAKIS, Bechtel Corporation and Stanford University, USA

Rapporteur: Tom SOO, IAHR Executive Director



# **Climate Change: An Existential Societal Threat**

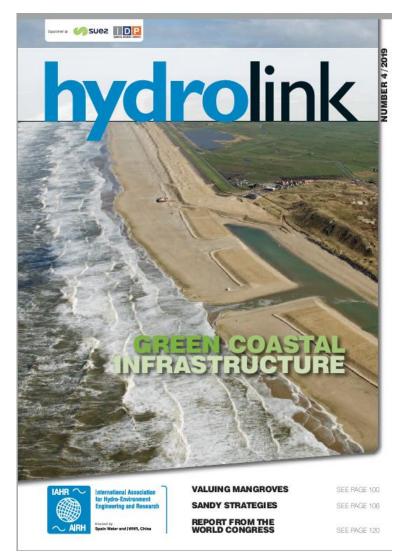
- Critical condition of the Planet
  - Short-term and urgent action needed
  - Solutions require international collaboration and solidarity
- IAHR has a role to play
  - Mitigation, adaptation and resilience analysis
  - Information and models to inform policy and action
    - Water supply,
    - Extreme events
    - Sea Level Rise
    - Ecosystem response
- Nature Based Solutions Adaptive Management -Smart Systems

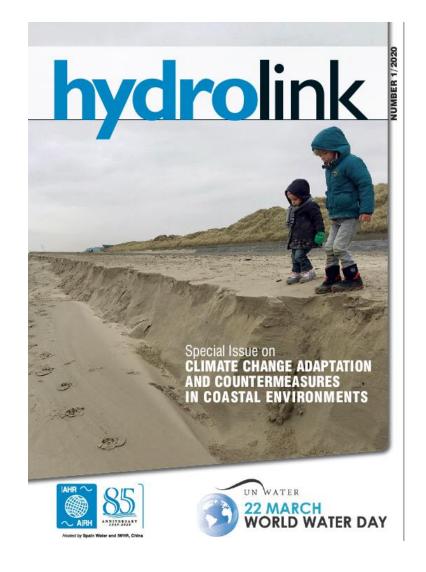


International Association for Hydro-Environment Engineering and Research

Supported by Spain Water and IWHR, China

# IAHR World Water Day Forum on "Hydro-environment Engineering and Adaptation to Climate Change" 21 March 2020







# Accounting for Climate Change in Water-Related Issues in Engineering Practice

- Most infrastructure projects have long lives
  - Design must account for conditions decades into the future
- Freshwater availability
  - Critical issue for water supply, irrigation, and industrial and energy generation projects
    - Reliability of operations
  - Little guidance on the impact of climate change on mean and low (drought) rainfall and runoff around the world
  - Much more research needed



# Accounting for Climate Change in Water-Related Issues in Engineering Practice

- Prediction of maximum water levels
  - Critical issue for human life and property protection, and for the safety of critical infrastructure
  - Little guidance on the impact of climate change on site-specific extreme rainfall and extreme streamflows and flooding
    - Often extreme flows are increased by an arbitrary percentage, e.g. 10%
  - More is available on sea level rise
    - Estimates for different future climate scenarios
  - Not much exists on the impact of climate change on
    - Storm surge
    - Waves
  - More research needed



# **Panel Session**

# **Participants Presentations**

Peter GOODWIN, University of Maryland Center for Environmental Science, USA Global trends and issues; ecosystem services

Joseph HW LEE, Hong Kong University of Science & Technology, Hong Kong China Innovative storm water management

Roberto RANZI, University of Brescia, Italy

The IAHR white paper on climate change

Deg-Hyo BAE, Sejong University, Korea

Korean experience on climate change impacts on water resources

Yangwen JIA, Institute of Water Resources & Hydropower Research, China China perspective on climate change adaptation

#### **Discussion**



# Distinguished IAHR Lectures for World Water Day

Lecture 1: Water security and ecosystem services

by **Peter GOODWIN**, University of Maryland Center for Environmental Science, USA

Lecture 2: Scientific and technical issues on climate change adaptation of Korean water resources

by **Deg-Hyo BAE**, Sejong University, Korea

Lecture 3: Advanced technologies for smart water and wastewater management in future cities

by **Zoran KAPELAN**, Delft University of Technology, Netherlands