

UN-WATER
“THE ROLE OF WATER IN ACHIEVING CLIMATE NEUTRALITY”
DECEMBER 4 2018, 1:15PM - 2:45 PM
BIESZCZADY ROOM, AREA G, INTERNATIONAL CONGRESS CENTRE, KATOWICE, POLAND

Agenda

- **Welcome Remarks by Olcay Ünver, Vice-Chair, UN-Water (5 min)**
- **Introductory speech by moderator - John Matthews, Secretariat Coordinator, the Alliance for Global Water Adaptation (AGWA) (5 min)**
- **Panel discussion with questions from the moderator and from the audience (75 min)**
- **Panelists:**
 - o **Luciana Gatti, Centre for Earth System Sciences (CCST) of INPE, Brazil**
 - o **Harald Köthe, Director, International Centre for Water Resources and Global Change (ICWRGC), Germany**
 - o **Stanley Kimaren Riamit, Executive Director, Indigenous Livelihoods Enhancement Partners (ILEPA), Kenya**
 - o **Tomáš Orfánus, Director of the Section for Environment and Project Management, Slovak Environment Agency, Slovakia**
 - o **Antonio Cañas Calderón, Ministry of Environment and Natural Resources, El Salvador**
- **Closing Remarks by moderator (5 mins)**

Focus of the session:

As a result of climate change, water availability is becoming less predictable in many places, and increased incidences of floods and droughts are exacerbating water challenges with negative impacts on people’s health and productivity. It is estimated that a 2°C increase in average global temperature may result in 1 to 2 billion people lacking an adequate supply of water.

Since the First Assessment Report (FAR) of the Intergovernmental Panel on Climate Change (IPCC) was completed in 1990, the water community has spent considerable efforts on adaptation measures to address the negative impacts of climate change.

In contrast, far less attention has been paid to climate change mitigation opportunities related to water management and how to identify opportunities for emission reductions, carbon sequestration and the protection of Greenhouse Gas (GHG) sinks. The water sector contributes up to 10 percent of carbon emissions locally from its energy consumption (i.e. pumping stations for water transport, irrigation, groundwater pumping), as well as contributing to GHG emissions from wastewater systems. Direct emissions from wastewater treatment plants (WWTP) include emissions of methane (CH₄) and nitrous oxide (N₂O) which can be biologically produced and emitted during wastewater and sewage sludge treatment, without mentioning the energy used in the process. On the other hand, over 80% of the world’s wastewater is released to the environment without treatment, with GHG emissions three times that from average energy intensive WWTPs.

In agriculture, water management is one of the most important practices affecting CH₄, carbon dioxide (CO₂), and N₂O emissions. The demand for water for crop production is likely to increase due to climate change with higher temperatures and greater variability of precipitation. Irrigation plays a dominant role in energy consumption, and even other practices such as the gravity irrigation of paddy fields are considered to be a major source of anthropogenic GHG emissions. However, examples exist of good water management contributing to carbon sequestration in agriculture and other sectors through; conservation agriculture practices, such as minimum tillage that reduces GHG emissions; sustainable soil management that increases soil organic carbon (SOC) content; and agroforestry and forest landscape restoration, including protection of wetlands, that lead to enhancement of both above and below ground carbon stocks.

It cannot be forgotten that at the heart of the negative impacts of climate change is the resulting effect on people's quality of life as their basic needs, livelihoods, and environment are put at risk. Utilizing a human rights-based approach in water management will enhance it to be an effective part of climate change mitigation and carbon neutrality. Having meaningful public participation by involving communities in decision-making processes will support inclusion and the generation of balanced solutions which takes into account the needs of all people. Moreover, particular attention is needed for vulnerable groups who are already at a disadvantaged position and who are more exposed than other populations to the adverse impacts of climate change.

Technical and financial support to promote sustainable, resilient and low-carbon water resources management is essential in achieving the global agendas including the SDGs and the Paris Agreement. It is thus urgently required to put more emphasis on the effects of water management on climate mitigation and carbon neutrality, keeping in mind the presence of feedback mechanisms of climate change mitigation measures affecting water management, which can be synergistic or present negative trade-offs.

Achieving the SDGs means that developing economies will close the existing gap to the developed economies. Consequently, increasing water use by all sectors will have a considerable impact on GHG emissions under the "business as usual" scenario. Contributions from the water sector to GHG emissions have typically been evaluated in a non-inclusive way by assessing different sectors in isolation. While it is true that discussions of the water-food-energy nexus have made progress in showing the linkages between climate change mitigation and water, most policy and applied approaches of the nexus assume a fixed climate - a stationary nexus. The fundamental role that the water cycle and water management play in our pathway to climate neutrality reveals the need to ensure that climate mitigation can adapt and adjust to shifts in the provision of freshwater, including timing, quantity, and quality.

Topics for discussion:

- Water for climate neutrality: synergies and trade-offs
- Examples from different regions, sectors, levels of governance
- Political process and finance to ensure funding