



# **World Water Forum 8 , Brasilia, Brazil 18-23 March 2018.**

## **SESSION 8.c.1**

### **Use of Mobile Phone Technology, Sensor Technology, Remote Sensing, Drones and Modelling in Water Monitoring and Management**

#### **Organizers:**

**\*World Meteorological Organization (WMO) – leader**

**\*Institute for Sustainable Development and Research (ISDR, India)**

**\*University of Brasilia**

**\*Geosciences Institute (Brazil)**

**\*Water Youth Network**

**Wednesday 21 of March, at 11:00 12:30**

**Ulysses Guimarães Convention Center , Brasília , Brasil.**

## **GUIDELINES FOR SESSION 8.c.1 – “Use of Mobile Phone Technology, Sensor Technology, Remote Sensing, Drones and Modelling in Water Monitoring and Management ”**

### **1. OVERALL CONTEXT**

The 8th World Water Forum Thematic Framework is structured in six main themes and three crosscutting issues, which relate to each other. Both themes and crosscutting issues open into topics – which make a total of 32. Each topic normally unfolds into three sessions, resulting in 95 Thematic Sessions at the 8th World Water Forum.

Over 450 organizations are working together for the success of the Thematic Process, as follows:

- Thematic Process Commission (TC)
- Theme Coordination Groups (TCGs)
- Topic Coordination Groups (ToCGs)
- Session Coordination Groups (SCGs)

The following organizations compose the SCG in charge of Session 8.c.1:

- World Meteorological Organization (WMO) – leader
- Institute for Sustainable Development and Research (ISDR, India)
- University of Brasilia
- Geosciences Institute (Brazil)
- Water Youth Network

Session 8.c.1 is under Theme 8 “Capacity”, Topic c “ICT and monitoring”. The session’s outcomes will be reported and fed into the outcomes of the Topic (together with its two other sessions), the Theme and the Thematic Process, to make the 8<sup>th</sup> Forum’s results.

The debates to be held in Session 8.c.1 shall refer, whenever appropriate, to the crosscutting questions provided (see below) and to the 2030 Development Agenda and other global processes and forums, particularly the Sustainable Development Goals.

The expected Thematic outcomes, that will be built upon the results of the set of thematic sessions, comprise the following:

- Focus on accelerating implementation of water-related SDG (and other goals in Agenda-2030) targets through **country level multi-stakeholder action** that is gender/age balanced
- Propose **action goals for themes/topics for 2021-2024**, continuing tracking of actions from previous World Water Forums
- Prioritize actions driving **acceleration and up-scaling of implementation**
- Promote/encourage **formation of ‘alliances for action’**, building i.a. on more than 200 Thematic Coordination Organizations at theme-topic-session levels, the 16 Implementation Roadmaps, and new water/non-water actors
- Integrate with messages from **other Forum processes**

## 2. SESSION DESCRIPTION AND AGENDA

### 2.1. SESSION DESCRIPTION

There are many different ICT innovations which benefit the sector and increase the capacity of water managers. Therefore, this session aims to have a wide array of cases presented. It will be a “market type” event whereby as many participants as possible can make a pitch; to demonstrate and advocate for a specific ICT related innovation. These innovations should help different stakeholders in the water sector to reinforce their capacity to better manage the resource.

Expected outcomes, impacts and follow-up linkages with events and initiatives after the Forum comprise the identification of key recommendations on mechanisms that would help to improve the communication between users and providers of innovative technologies. Furthermore, lessons learned from the application of ICTs, GIs, Remote sensing, Mobile technology for Water Resources planning, management and development will be highlighted. Effective use of ICTs and mobile technology for water scarcity region and for draught prone region. The broadening of knowledge about how to innovate and update water monitoring, water management, droughts forecasting and flood warning using and applying the latest technologies and EO data available will be explored.

The key questions to be responded by the presentations and further debates are:

- 1) How to ensure the uptake of innovative technology by National Hydrological and Meteorological Services?
- 2) What are the lessons learned from the application of ICTs and GIS, Remote sensing for addressing the issues of water scarcity and drought prone region for sustainability?
- 3) Which successful projects involving technologies and remote sensing are already making impact on the field of hydrology or flood control and how can they be adapted and transferred to other regions?

Besides the key questions, the presenters and moderator should try to provide answers to some of the questions asked by the three cross-cutting themes of the Forum – Capacity, Sharing and Governance – as follows:

#### CAPACITY:

- What opportunities do new technologies offer to improve water monitoring and ICT?

#### SHARING:

- How to share solutions and good practices for the water-related SDG implementation and with whom?

#### GOVERNANCE:

- How do you contribute to designing and implementing IWRM-wise policies/projects?
- How do you ensure multi-level governance, engage stakeholders and assess the results of policies?

## 2.2.AGENDA

The estimated date and time for Session 8.c.1 is the Wednesday 21 of March, at 11:00 12:30.

The organization of the 8<sup>th</sup> Forum will provide a room with capacity for around 100 people, computer, projector, and simultaneous translation into Portuguese and English. Presentations and speeches will be accepted in both languages, which are the official languages of the Forum.

Session 8.c.1 will last 90 minutes, divided into 4 segments: 1. Setting the scene; 2. Innovation pitches –4 min. presentations with images (Pecha Kucha); 3. Break-out group discussions with the speakers and 4. Recap and closing.

**Moderator:** Sandra Brühlmann, SDC

### I. Setting the scene (10 minutes)

The session will kick start with the projection of a 4-minute video from the Citizen's Forum. The moderator will then introduce the session and set the scene.

### II. Innovation pitches (30 minutes)

6 different ICT innovations will be pitched during short Pecha Kucha presentations. Each innovation will illustrate a different technology (mobile phones, drones, image analysis, cloud computing / big data analysis, citizen observations) and its application for hydrological service provision. This will allow participants- including potential users - to get a good sense of the capabilities and scope of the innovations. Suggested innovations include:

- **Akvo - Jeroen van de Sommen**

*Creates open source, internet and mobile software and sensors. Helps improving infrastructure and services, for disadvantaged populations.*

- **University of Twente – Robert Becht**

*Within the AfriAlliance project , ICT will have the lead in building a Monitoring and Forecasting Information Web Service on Water Resources and Climate challenges across Africa. This service will use an innovative triple sensor approach, bringing together metadata and up-to-date information on satellite observations, in-situ surface monitoring networks and citizen-based water observations in an geospatially interactive and accessible manner. It will support policy makers and executive staff on the work floor in decision making processes at all level.*

- **IRD - Jean Michel Martinez**

*A remote-sensing based application called HIDROSAT operating by the hydrological department at the Brazilian National Water Agency (ANA) to deliver suspended sediment concentration, chlorophyll-a concentration and water level estimates of rivers and lakes from different satellites will be presented. The remote sensing data improves the conventional monitoring capacity by increasing the number of stations and the frequency of data collection.*

- **ISDR, India –KalpanaChaudhari / P.J.Philip**

*Case study on application of digital technologies for water governance. The presentation is based on the lessons learned from the Asia-Pacific region on the use of ICTs and Digital governance for water Sustainability.*

- **University of Potsdam - José Miguel Martins Delgado**

*Joint initiative with FUNCEME whereby an app has been developed that offers insights on the operational drought forecasting of Ceará at different scales. Regional downscaling, computation of the Standardized Precipitation Index, statistical prediction of strategic reservoir levels and estimation of latest storage levels in small and micro reservoirs are also automated through the app.*

- **Haldia Institute of technology, India - ManabendraNathBandyopadhyay**

*Lessons learned from the application of ICTs for addressing issues in water scarcity region in Maharashtra State by river linking. This presentation is based on the use of application remote sensing and GIS for inter basin water transfer for social and equitable water resources distribution during scarcity.*

### **III. Break-out group discussions with the speakers (35 minutes)**

Active table discussions with the presenters from segment 2 and possibly colleagues, where participants deep dive into one of the five innovations that were presented, scrutinizing the innovation itself and its general applicability. This is an opportunity for participants to explore how a particular innovation could serve their purpose. Suggested questions for the tables to discuss include:

- How does this innovative technology support hydrological data monitoring? What are key challenges and opportunities for its uptake?
- What mechanisms exist or should be put in place to increase the dialogue between users and providers of innovative technologies to ensure that user needs are taken into account?

Each table discussion will be led by the speaker that invites participants to ask questions. At the end of the segment, each table will report back on challenges and opportunities.

### **IV. Recap and closing (15 minutes)**

Brief recap of the session with a set of recommendations on how to improve the dialogue between users and providers of new technologies.