Asia-Pacific Regional Synthesis and Commitment Session of the 7th World Water Forum

B105, Hyundai Hotel, Gyeongju, Republic of Korea

15 Apr. 2015

Key Messages: "Hydrological Services in Asia under Rapidly Changing Conditions"

Coordinators:

KICT (Sung Kim), WMO (Paul Pilon), HRFCO (Hajoon Park)

Background (1)

- Asia Pacific region has experienced rapidly changing hydrological conditions: more than any other region
- Hydrological Services need to respond by improving hydrological practices, and product and service delivery
- Session objectives and outputs:

- To explore the on-going hydrological efforts that could improve hydrological practices in Asia region

➔ Sharing of improved practices

- Provision of opportunities to develop collaborating projects among the Asia Pacific countries

➔ Develop a framework for collaboration

Background (2)

- Previous meetings for organizing the session
  - ✓ WMO RA-II WGHS Meetings (Oct. 2012 and Sep. 2014, Seoul)
    - Session structure and participation discussed.
  - ✓ WMO CHy AWG Meetings (Feb. 2013, Geneva; and Sep. 2014, Prague)
    - WGHS results were reported.
- Organizations and speakers confirmed participation if session held (Nov. 2014)
- Korea MOLIT and WMO to support some speakers and panelists.

Speakers and Panelists

- Introduction and Opening (Dr. Sung Kim, KICT)
- Opening remarks (Mr. Ha-joon Park, Director General, Han River Flood Control Office, MLIT, ROK)
- Presentations
  - ✓ Dr. Paul Pilon (WMO Hydrological Services)
  - ✓ Dr. WANG Guoqing (Hydrological Practices under Climate Change)
  - ✓ Dr. Tai-Hoon Kim (Sediment Disasters)
  - ✓ Dr. Sergey BORSHCH (Floods)
  - ✓ Ms. Hwrin Kim (Water Resources Assessment)
- Panel Discussion
  - ✓ Dr. Wolfgang Grabs; Ms. GAO Ge; and Dr. Yeongsin ROH.
- Concluding remarks
  - ✓ Mr. Zhiyu LIU

Key Messages

- Asia has seen the full range of deadly floods, storms, landslides, earthquakes, drought and extreme weather
- Economic losses continue to rise exponentially
- Asia has experienced *human-induced changes* including population growth, increased urbanization, land use changes, increased water use demands, increased *climate variability, and climate change*

- National Hydrological Services in the region are becoming increasingly important and need to improve capabilities in
  - *data observations, their management* and sharing,
  - *flood forecasting and warnings*,
  - *water resource assessment,*
  - *sediment (land slide and debris flow) disaster management ,*
  - *drought , flood and water resources management.*

1 Hydrological practices under climate change

- Climate change results in generally more extreme events

  - ✓ storms, floods, droughts…
  - ✓ higher variability of available fresh water resources

- *Climate prediction model and products* can be used in extended stream flow prediction, which can help improve water resources management and planning

- *Climate change projection results* can be used in assessment of potential impacts of climate extremes, which can benefit water-related disaster management

2 Flood forecasting and warning

- FFW is an important activity of National Hydrological Services, which help inform disaster managers and the public so they may take appropriate measures for disaster preparedness and mitigation
  - ✓ The use of advanced numerical weather prediction outputs in flood forecasts can improve the accuracy and lead time of FFW
  - ✓ Advances have been made in the use of ensemble meteorological prediction, and probabilistic hydrological forecasts

- Capacity building through implementation of the Flash Flood Guidance System (FFGS) project with global coverage, the Associated Programme on Flood Management, the Integrated Drought Management Programme, and promoting impact-based forecasts

3 Water Resources Assessment

- National Hydrological Services need to carry out water resources assessments to meet challenges posed by increased demand

- WRA helps water managers know the availability of water resources and supports integrated water resources management

- Tools and models are being developed to undertake dynamic assessment of the availability of basin-wide water resources, and such tools can be used for planning purposes.

4 Sediment disaster and mass movement

- We need to improve how we deal with sediment disasters so as to decrease the exposure of ordinary people to them

- Three perspectives:

– *Issuance landslide/debris flow warnings* based on improved monitoring and hazard assessment technologies

– *Improvement in capacity for undertaking sediment disaster managem*ent through seminars, training, knowledge and technology sharing

– *Improved dissemination of sediment-related disaster information and products*, e.g. making available hazard and risk exposure maps, promoting provision of safety services

5 Other aspects

- Improving hydrological observations
  - ✓ Accuracy and coverage
  - ✓ Encouraging data sharing
  - ✓ Data rescue

- Strengthening cooperation and coordination among National Hydrological Services
  - ✓ Capacity building

Thank you