



भारत सरकार
विज्ञान और प्रौद्योगिकी मंत्रालय
विज्ञान और प्रौद्योगिकी विभाग
GOVERNMENT OF INDIA
Ministry of Science and Technology
Department of Science and Technology
Technology Bhavan, New Mehrauli Road
New Delhi - 110016

International Workshop on Science, Technology, Innovation and Management for Water Sustainability

19-20 April 2017

CSIR-NISTADS Conference Hall

New Delhi, India

Background

Water sustainability has emerged as a major concern for many countries, especially in the Asia Pacific region; for India, both access to and safety of drinking water is a major challenge. Access to safe water is also a serious global issue, resulting in critical implications for human health and wellbeing. Over 600 million people still lack access to safe water¹ worldwide, and a large proportion of them are in developing countries and in particular rural areas. According to the World Water Development Report 2015, the Asia Pacific region accounts for 90 per cent of total global of water-related disaster deaths, claiming more than 17,000 lives in 2013 alone.²

Towards addressing these challenges, the sustainable development agenda adopted by the United Nations in September 2015 has set a specific Sustainable Development Goal (SDG-6) to ensure access to water and sanitation for all by the year 2030. In this context, the availability, accessibility, quality and sustainability of safe water remain key issues. SDG 6 covers the entire water cycle, including the management of water, wastewater and ecosystem resources. Appropriate strategies for innovation and technology transfer can play a significant role in providing safe and affordable drinking water.

The Governments of many Asia-Pacific countries, have proactively stepped in to support R&D and deployment of safe water technologies, providing funding for public and private sector entities. Research institutions have developed water purification and treatment technologies to address contamination problems; while few of them are commercially available for wide scale deployment. Some of the available technological solutions may seem to offer promising solutions to address critical water problems like arsenic and fluoride contamination, salinity, water quality monitoring, wastewater treatment. There are examples of cost-effective and affordable technologies having potential to be used in locations which currently lack access, and be a catalyst for sustainable development. The workshop will evaluate the accessibility,

¹ World Health Organization and UNICEF Joint Monitoring Programme (JMP). (2015)

² <http://www.unescap.org/media-centre/feature-story/access-water-asia-pacific%E2%80%99s-silent-crisis>

effectiveness, cost and maintenance of these technological solutions for wide spread use. It will facilitate knowledge sharing between key stakeholders involved in the innovation, commercialization and use of safe and affordable water technologies, as well as the impacts achieved through technology transfer by different stakeholders, which is critical for replication and dissemination.

Objectives

1. To identify available technologies, good practices, innovations and management practices to ensure water sustainability and accessibility to safe drinking water
2. To understand the current state of innovation and technology transfer in the water sector in the participating South Asian countries and the key issues and challenges being faced
3. To facilitate knowledge sharing within the region around multiple dimensions needed for water sustainability and safe water through S&T, innovation and management

Expected outputs

- Presentation by participating organizations, experts and resource persons to give insight into the different experiences on safe water from the South Asia region
- Sharing of knowledge and best practices on innovative technologies, their commercialization and use for providing affordable and safe water
- Discussion and synthesis of policy recommendations on affordable safe water technological options, their innovation, commercialization and use
- Pathways to further regional collaboration on safe water technologies

Expected outcomes

- Improved understanding of the current scenario related to water sustainability and water treatment technologies in the Asia-Pacific region
- Detailed knowledge of key issues, major challenges, lessons learnt and leading practices in the development, transfer and use of affordable technologies in the water sector
- Increased knowledge on policy options and tools to facilitate the development, transfer and use of affordable technologies in the water sector
- Formation of collaborative networks and collaborations for promoting affordable technologies to provide safe drinking water

Organizers

This workshop is organized by Asian and Pacific Centre for Transfer of Technology (APCTT) of the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) jointly with the National Institute of Science, Technology and Development Studies (NISTADS) of the Council of Scientific and Industrial Research (CSIR), Ministry of Science and Technology of the Government of India.

Target participants

- Senior officials from Government Ministries and Departments involved in water sustainability, water treatment and water management
- Representatives from laboratories/institutions from CSIR and other agencies and academia
- Representatives from industries, Non-Governmental Organizations (NGOs), and potential users
- Senior government representatives and experts from ESCAP Member States such as Bangladesh, Bhutan, India, Nepal, Sri Lanka as well as key international resource persons
- Representatives from UN agencies, and other relevant national and international organizations, including donor agencies that support projects related to water quality and safe water

Programme

<u>Day 1: April 19, 2017</u>	
09:00-09:30 - Registration	
09:30-10:30 - Inaugural Session	
Welcome Remarks	Dr. P Goswami, Director, National Institute of Science, Technology and Development Studies, Council of Scientific and Industrial Research (CSIR-NISTADS), Ministry of Science and Technology, Government of India
Background to the Workshop	Dr. Madhulika Bhati, Scientist, National Institute of Science, Technology and Development Studies, Council of Scientific and Industrial Research (CSIR-NISTADS), Ministry of Science and Technology, Government of India
Programme Overview	Dr. Neelima Alam , Scientist E, Technology Mission Cell Water & Solar Energy, Department of Science and Technology (DST), Ministry of Science and Technology, Government of India
Opening Address	Dr. S. K. Deshpande, Scientist-G, Department of Scientific & Industrial Research (DSIR), Ministry of Science and Technology, Government of India
Inaugural Address	Ms. Michiko Enomoto, Head, Asian and Pacific Centre for Transfer of Technology (APCTT) of the United Nations Economic and Social Commission for Asia and the Pacific (UN ESCAP)
10:30-11:00 - Break (Group Photo, Tea)	
11:00-13:00	
Session I: Science Technology and Innovation Policy for Promotion of Sustainable Water Management	
Moderator: Ms. Michiko Enomoto, Head, APCTT-ESCAP	

Regional technology cooperation for sustainable water management to achieve SDG-6 in the Asia-Pacific	Dr. Satyabrata Sahu, Coordinator, Technology Intelligence, ESCAP-APCTT
Waste Water – The Untapped Resource : A Snapshot of the United Nations World Water Development Report 2017	Dr. Krishnan Srinivasaraghavan, Coordinator, Technology Transfer, ESCAP-APCTT
Virtual water policy for sustainable water	Dr. P Goswami, CSIR-NISTADS
IWMI's Work on Sustainable Water Management and Technologies	Dr. Krishna Reddy, International Water Management Institute (IWMI), New Delhi
Key findings from NISTADS project on water contamination scenario and technology solution	Dr. Madhulika Bhati, CSIR-NISTADS
Q & A	
13:00-14:00 - Break (Interactive Lunch)	
14:00-15:15	
Session II: Technology Status, Challenges and Best practices for Sustainable Water Management – Regional Perspectives	
Moderator: Dr. S. Sahu, Coordinator, APCTT-ESCAP	
Water Security: A vital strategy for sustainable water management	Dr. Mukand S. Babel Professor, Water Engineering and Management (WEM) Chair, Climate Change Asia Asian Institute of Technology (AIT), Thailand
Water safety plan : A WHO project	Dr Pranav Nagarnaik, Scientist , Water Technology and Management Division, CSIR - NEERI
Water safety plan : Defluoridation plants	Dr Atul V. Maldhure, Scientist , Water Technology and Management Division, CSIR - NEERI
Q & A	
15:15-15:30 - Break (Tea / Coffee)	

15:30-17:00

Session III: Technology Status, Challenges and Best practices for Sustainable Water Management- Perspectives from South Asia

Moderator: Dr. Mukand S. Babel, Professor, Water Engineering and Management (WEM)

Current challenges and some best practices for sustainable water resource management in Bangladesh	Dr.A.T.M. Shakhawat Hossain Professor Geotechnical Engineering, Engineering Geology & Disaster Sciences Jahangirnagar University Bangladesh
Current status of sustainable water management in Bhutan	Mr. Shah Bir Rai Lecturer & Chief Provost Jigme Namgyel Engineering College Royal University of Bhutan Bhutan
Current scenario in sustainable water management in Nepal	Mr. Dipak Gyawali Chair, Nepal Water Conservation Foundation Nepal Academy of Science and Technology (NAST) Nepal
Technology and best practices for sustainable water management in Sri Lanka	Eng W J L S Fernando Chairman, National Engineering Research and Development Centre (NERDC), Sri Lanka
Technology Based Solutions to Water Challenges	Dr. Sanjay Bajpai, Director, Water and solar Technology Mission Cell, Department of Science and Technology (DST), Government of India
Q and A Session	

Day 2: April 20, 2017

09.30 -9:35 am: Summary of First Day: glimpses through small presentation by Dr. Madhulika (5 mintues)

09:35-10:30

Session IV: Innovation and Management for Water Sustainability

Moderator: Mr. Dipak Gyawali, Chair, Nepal Water Conservation Foundation

Climate Risk Informed Decision Analysis (CRIDA): An Approach for Planning and Adaptation Interventions for Water Management	Dr. Mukand S. Babel Professor, Water Engineering and Management (WEM) Chair, Climate Change Asia Asian Institute of Technology (AIT) Thailand
International emerging technology landscape in sustainable water management	Mr. Khang Lui Director, Partnerships and Alliances SDG Accelerator Asia Pacific - Singapore Member, ESNB & Innovation Competitiveness Task Force, ESCAP Singapore
Q and A Session	
10:30-10:45 - Break (Tea / Coffee)	
10:45-11:45	
Session V: Facilitating Partnerships for Safe and Affordable Water	
Moderator: Dr. Madhulika Bhati, Senior Scientist, CSIR-NISTADS	
<p>Academia Perspectives</p> <p>Water Quality in Rajasthan: Issues and Challenges</p> <p>Business entities Perspectives</p> <p>Development and Management of Climate resilient decentralised fresh water sources.</p> <p>R & D perspectives</p> <p>Sustainability in management of groundwater is effective jointly with scientific inputs and stakeholder's decision</p>	<p>Dr. Charu Jhamaria, Head, Department of Environmental Science The IIS University, Mansarovar, Jaipur</p> <p>Mr. Akash Bhavsar Co-founder & Director- Water Quest Hydro Resources Management India Pvt. Ltd. Chair- Innovation & Competitiveness Task Force, SBN, UN ESCAP.</p> <p>Dr. N. C. Mondal, Scientist: CSIR-National Geophysical Research Institute, Hyderabad, India</p>

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Innovative Membrane Technologies for Water Purification	Dr. (Mrs.) Nivedita Sahu & Mr. Y V L Ravi Kumar, Senior Scientist , Chemical Engineering Division, CSIR-IICT
Q and A Session (10 min)	
12:00-13:30 PM	
Session VI: Panel Discussion	
<u>Moderators:</u> Ms. Michiko Enomoto, Head, APCTT-ESCAP Dr. P Goswami, Director, CSIR-NISTADS	
Wrap-up and summary of technical sessions I, II, III and IV	Session moderators
Policy recommendations on roadmaps for regional cooperation	
Closing Remarks	Ms. Michiko Enomoto, Head, APCTT-ESCAP Dr. P Goswami, Director, CSIR-NISTADS