International Commission on Water Quality (ICWQ)

Report on activities in the period June 2015 – May 2016

Introduction

The International Commission on Water Quality (ICWQ) is responsible for promoting the advancement of the water quality of hydrological systems, including research and management issues. This goal is accomplished informally through communications among interested members/participants, and through organized technology transfer activities such as workshops on topical issues and symposia at which scientists present their results in oral and poster sessions and in accompanying publication of the proceedings.

The report presents a summary of activities that have been undertaken by ICWQ and its officers from June 2015 to May 2016.

ICWQ Officers

In the IAHS elections held during the 26th IUGG General Assembly in Prague in 2015 the ICWQ Officers of President-Elect, Vice President and Secretary shown in the table below were elected. Kate Heal continues as President until the IAHS Assembly in Port Elizabeth in July 2017.

President	Kate Heal	UK
President-Elect	Wouter Buytaert	UK
Vice President	Xiaohong Chen	China
Vice President	Matt Hipsey	Australia
Vice President	A. B. Gupta	India
Secretary	Per Stålnacke	Norway

ICWQ Membership update

At the ICWQ plenary meeting in Melbourne in 2011 it was agreed to establish a "membership" of ICWQ so that interested scientists would become members of the Commission to be able to support the ICWQ activities. There are now 80 Commission Members from 29 countries, representing all continents.

The list of members of ICWQ is available on the ICWQ webpages http://paramo.cc.ic.ac.uk/iahs

ICWQ contribution to the 26th IUGG General Assembly 2015

ICWQ collaborated with other Commissions in IAHS and IUGG in convening the following symposia and workshops at the 26th IUGG General Assembly 2015.

1. HW02 Hydrological Model Intercomparison for Climate Impact Assessments
   Convenors: Valentina Krysanova, Berit Arheimer (ICWQ)

Co-convenors: Eva Boegh (ICCLAS), Alexander Gelfan (ICSIH), Ingjerd Haddeland (ICSW), Neil Holbrook (ICLL/IAMAS), Jianping Li (ICLL/IAMAS), Stewart Franks (ICCLAS), Wang Guo Qing (ICSW)

2. HW10 The Role of Sediment as an Indicator of Hydrological and Societal Change
   Convenors: M. Stone, A. Collins, P. Porto, V. Golosov (ICCE), P. Stålnacke (ICWQ)

3. HW12 Using Environmental Observatories in Catchment Studies and Management
   Convenors: Wouter Buytaert, Elango Lakshmanan (ICWQ), David Hannah (ICSW)

4. HW14 Advancing Water Quality Prediction at the Catchment Scale: New Theories and Approaches
   Convenors: Matthew Hipsey, Michael Rode, Kate Heal, Valentina Krysanova (ICWQ); Gil Mahe (ICSW)

5. JM3 Geochemical Process and Cycles
   Convenors: IAMAS, IAPSO, IAVCEI, IACS, Kate Heal (ICWQ)

During the Assembly, ICWQ convened a meeting of all officers and members to plan future activities.

ICWQ contribution to the IAHS Assembly, Port Elizabeth, 2017

ICWQ has been collaborating with other IAHS Commissions in developing proposals for symposia and workshops at the IAHS Assembly in Port Elizabeth in July 2017.

Organisation of other water quality-related conferences and workshops

ICWQ post-holders were involved in the organisation of the following water quality related Conferences and Workshops:

- AGU Chapman conference on "Emerging Issues in Tropical Ecohydrology", 5 - 9 June 2016, Cuenca, Ecuador. (Wouter Buytaert Program Committee member).
- 3rd CHINAFRICA Water Forum Conference, Cape Town, South Africa, 17-19 August 2015 (Xiaohong Chen as a co-organiser and an Invited Speaker).
- International Conference on Sustainable Utilization and Management of Water Resources under Changing Environment (SUMWR), Guangzhou, China, 24-25 October 2015 (Xiaohong Chen as conference organiser).
- GWP Regional Workshop on South-South Cooperation in Flood Management, Guangdong, China, 14-16 December 2015 (Xiaohong Chen as an Invited Speaker).

Involvement in water quality-related projects and working groups

ICWQ Officers are involved in a number of national and international projects and working groups.

Kate Heal (President): Input to the draft text of the United Nations World Water Development Report 2017, “Wastewater”. Higher Education Champion for the Centre for Expertise for Waters in Scotland. Member of the Scottish Universities Green Infrastructure Group. Projects completed on: (1) bioremediation of Zn-contaminated soils; (2) recovery of lake ecosystems from red mud pollution.

Wouter Buytaert (President-Elect): Inputs to the United Nations World Water Development Report 2016, “Water and Jobs”. Co-investigator of new project “Coupled Human And Natural Systems Environment (CHANSE) for water management under uncertainty in the Indo-Gangetic Plain” funded by UK NERC (£1.25M).

Xiaohong Chen (Vice President): in charge of 23 projects with funds over US$2 million, including (1) Networking and Total Use Constrained Water Resources Allocation Newsboy Model and Methodologies for Changing Environment, funded by National Natural Science Foundation of China (NSFC); (2) Response and regulation of water resources to salt water intrusion under sea level rise in the PR of China, funded by NSFC; (3) Comprehensive planning of water resources protection for Guangdong Province, China, funded by Water Resources Department of Guangdong Province, China; (4) Appraisal of pollution capacity for river system of Foshan City, China, funded by Foshan Water Authority, China.

Matt Hipsey (Vice President): Continues to lead the modelling working group in the Global Lake Ecological Observatory Network which met in Korea in November 2015. Participation in the Panta Rhei associated “International Conference on Hydro-Biogeochemical Processes: Mechanisms, coupling and Impact”, in Wuhan, China, 27-31 October 2015.

A.B. Gupta (Vice President): Completed research projects: (1) Membrane Integrated Modified Nalgonda Defluoridation Technique for drinking water funded by CCDU, Government of Rajasthan, Jaipur; (2) Development of a Field Test Kit for Detection of Total Coliforms and *E. coli* in Drinking Water. Ongoing projects: (1) Defluoridation of Drinking water using Combination of Magnesium and Calcium amended activated alumina funded by DST, Rajasthan India; (2) Utilisation of Marble Slurry powder for Production of Hydroxyapatite (HAP) suitable for defluoridation of drinking water, sponsored by RPCB; (3) Development of Pulsator as a replacement of clariflocculator for drinking water treatment with an additional benefit of reducing Al from treated water stream.

Per Stålnacke (Secretary): Principal investigator of 'Development of the data-modelling system and the decision support tool for the integrated marine and inland water management' in Estonia, 'Management of water resources and the landscape in the Czech Republic' and "Effects of climate change on nutrient losses from agricultural ecosystems" (NRC-funded).

Other relevant activities

- UK National Representative for IAHS (KH)
- Hydrological Sciences Journal, Associate Editor (KH)
- Scottish Alliance for Geoscience, Environment and Society, Co-convenor Theme 2 on Terrestrial Carbon (KH)
- EGU Hydrology Division, Subdivision chair (WB)
- Hydrology and Earth System Sciences, Editor (WB, MH)
- Computers and Geosciences, Associate Editor (WB, MH)
- Environmental Modelling and Software, Editorial Board (MH)
- Member of Panta Rhei working group " Changing Biogeochemistry of Aquatic Systems in the Anthropocene" (MH)
- Guest-Editor of special issue in Agriculture, Ecosystems & Environment (PS)
- National Representative of the Norwegian National Committee of IAHS (PS)
- Vice-President, Chinese National Committee for IAHS (CXH)
- Director, Chinese Society for Sustainable Development (CXH)
- Vice Director, Environmental Geoscience Division of Chinese Society for Environmental Sciences (CXH)
- Acta Scientiarum Naturalium Universitatis Sunyatseni (Editor, CXH)

**Abbreviations: KH – Kate Heal, WB – Wouter Buytaert, MH – Matt Hipsey, PS – Per Stålnacke, CXH – Xiaohong Chen, ABG – A. B. Gupta*