

International Commission on Water Quality (ICWQ)

Report on activities in the period October 2012 – July 2013

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 is a summary of activities that have been undertaken by ICWQ officers since October 2012 until July 2013, which are in line with three basic topics defined at the ICWQ plenary meeting in Melbourne in 2011:

- Understanding fresh-water quality problems in a changing world
- How can models help to solve water quality problems?
- How to benefit from new monitoring technology?

Organization of IAHS symposia and workshops

The Commission was actively involved in the preparation of the Scientific Program for IAHS – IAPSO – IASPEI Joint Assembly “Knowledge for the future” to be held in Gothenburg, Sweden 22 - 26 July 2013. One symposium (“Understanding fresh-water quality problems in a changing world”) and two workshops (“Characterizing water quantity and quality: new approaches and future directions” and “How can models help to solve water quality problems?”) suggested by the ICWQ were accepted for the Program.

The following ICWQ officers are playing roles of convenors and co-convenors in the following event:

<i>Symposium or workshop</i>	<i>Title</i>	<i>Convenor from ICWQ</i>	<i>Co-convenor from ICWQ</i>
Symposium H04	Understanding fresh-water quality problems in a changing world	Berit Arheimer	Valentina Krysanova, Elango Lakshmanan
Symposium HP2	Land-ocean interaction		Per Stålnacke
Workshop HW03	Characterizing water quantity and quality: new approaches and future directions	Kate Heal	Wouter Buytaert
Workshop HW06	Anthropogenic radionuclide contamination of water and sediment: short-term and long-term consequences		Kate Heal
Workshop HW13	How can models help to solve water quality problems?	Valentina Krysanova	Per Stålnacke, Berit Arheimer (S3), Kate Heal (S3)

The abstracts submitted for Symposia and workshops were reviewed and recommended for oral presentations or posters, and some rejected or recommended for other sessions. The non-registered participants were not included in the program. Suggestions on funding from IAHS were provided considering the requests of potential participants, quality of their abstracts and relevance to the topics.

In addition, Berit Arheimer contributed to the organisation of the Joint Assembly as a Member of the Local Organising Committee for the Joint Assembly in Gothenburg 2013, and Kate Heal is a co-convenor of IAHS Early Career Hydrologists activity.

Red book

A new IAHS Red Book entitled “Understanding Freshwater Quality Problems in a Changing World” (Publication 361, ISBN 0144-7815) edited by Berit Arheimer, Adrian Collins, Valentina Krysanova Elango Lakshmanan, Michel Meybeck and Mike Stone has been published.

The papers collected in this book (to be presented at Symposium H04 in Gothenburg) describe the present regional or local freshwater quality status worldwide and highlight future research needs. Contributions are included from each continent to better understand underlying processes causing problems. The papers discuss how the situation may develop into the future, considering on-going changes in environment and society. The following scientific questions are addressed in the book: How to understand the behaviour of changing hydrological systems and impacts on freshwater quality? How can we effectively bring together theoretical hydrology, experimental hydrology and new measurement techniques to advance our knowledge of water quality processes for the future? How can the typical timescales of change be identified? How to estimate and predict the behaviours and patterns of freshwater quality with uncertainty assessment to support risk evaluation?

ICWQ Membership

As decided at the ICWQ plenary meeting in Melbourne in 2011, the membership of ICWQ was established so that interested scientists could become members of the Commission and support the ICWQ activities. The list of ICWQ members includes 62 people.

Some of them are already involved in the organisation of planned Symposia and workshops at the Joint IAHS-IAPSO-IASEI Assembly in Gothenburg in July 2013. Three ICWQ members (Ahti Lepistö, Finland; Michael Rode, Germany; Martin Volk, Germany) became the co-convenors of Workshop HW13 and will help in organising the interactive discussions during the Workshop.

Organisation of other water quality-related conferences and workshops

The ICWQ members were involved in organisation of the following water quality related Conferences and Workshops:

Consortium meeting of the Project “Integrated water resources and coastal zone management in European lagoons in the context of climate change” (LAGOONS), 29-30 January 2013 in Potsdam, Germany (*P. Stålnacke: Co-coordinator of project; V. Krysanova: main local organizer*);

Consortium meeting of the Project “Integrated water resources and coastal zone management in European lagoons in the context of climate change” (LAGOONS), April, 21-25, in Odessa, Ukraine (*P. Stålnacke: Co-coordinator of project; V. Krysanova: session chair*);

IMPACTS World 2013 Conference, 27-30 May 2013 in Potsdam, Germany (*V. Krysanova: member of Organising Committee*);

International SWAT Conference, 16-19 July 2013 in Toulouse, France (*V. Krysanova: Member of the Scientific Committee*);

Indo-US workshop on Water Quality and Sustainability, IIT Madras, Chennai, India, 7th to 11th January 2013 (*E. Lakshmanan as a Panellist*);

Indo-German Workshop on Growth and Sustainability in a highly dynamic city - Exploring the urban development in Chennai, IIT Madras, Chennai, India, 25th February to 1st March 2013 (*E. Lakshmanan as a Panellist*);

Fifth International Groundwater Conference, Aurangabad, India 18th to 21st December 2012. (*E. Lakshmanan as Session Chair*);

Sustainable Water Resource Development and Management”, Shivaji University, Kolhapur, India, 20th and 21st December, 2012 (*E. Lakshmanan*);

EC funded project “Saph Pani”, Training course on “Managed Aquifer Recharge: Methods, Hydrogeological requirements, Post and Pre-treatment Systems”, Anna University, Chennai, India, 11th and 12th December 2012. (*E. Lakshmanan as Coordinator*);

European Research Council Seminar on ‘Opportunities for Ph.D and Post Doctoral Research with ERC funding’, Anna University, Chennai, India, 8th March 2013. (*E. Lakshmanan as Coordinator*);

EU-India STI cooperation days workshop: Saph Pani - Enhancement of natural water systems and treatment methods for safe and sustainable water supply in India’ 8th and 9th November 2012. (*E. Lakshmanan as Session Chair*).

Involvement in water quality-related projects and working groups

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

Kate Heal: Member of the Steering Committee of the "Mainstreaming Innovation" project which includes sustainable urban drainage infrastructure for improving water quality.

Valentina Krysanova: Work Block leader in two projects: "Integrated water resources and coastal zone management in European lagoons in the context of climate change" (LAGOONS) funded by EC, and Sustainable Management of River Oases along the Tarim River (SuMaRio) funded by German Federal Ministry of Education and Research.

Elango Lakshmanan is a Principal Investigator in three Projects sanctioned in this year: "Hydrogeochemistry of surface water and groundwater along Cauvery River" funded by Indian Space Research Organisation; "Hydrogeological studies of the proposed uranium mining site, Gogi region, Karnataka, India" funded by BRNS, Dept. of Atomic Energy, Govt. of India and "Mitigation strategies to counteract seawater intrusion" funded under Indo-German (DST-DAAD) Collaborative Initiative.

Per Stålnacke: Co-coordinator of "Integrated water resources and coastal zone management in European lagoons in the context of climate change" (LAGOONS) funded by EC.

Wouter Buytaert co-leads the project Hydrometeorological feedbacks and changes in water storage and fluxes in Northern India, funded by the UK NERC & Indian Ministry of Earth Sciences.

Other activities

- Hydrological Sciences Journal, Associate Editor (KH*)
- Regional Environmental Change, Associate Editor and a Guest Editor of a Special Issue (VK)
- Member of the German National Committee of IAHS (VK)
- Scottish Alliance for Geoscience, Environment and Society, Co-convenor Theme 2 on Terrestrial Carbon (KH)
- Member of evaluation team for Finnish Academy climate change research fund (BA)
- Cluster leader in the Swedish national research programme Climate change and Environmental Objectives (BA)
- Member in scientific committee of PUB initiative of IAHS (BA)
- Member in scientific jury of Swedish Junior Water Prize, linked to Stockholm World Water Week (BA)
- Member in BALTEX scientific steering committee (BA)
- Member in the steering board of the Water Management Program at SMHI (BA)
- Member in the Swedish expert group of UNESCO scientific programmes IHP (BA)
- Journal of Environmental Science and Technology, Associate Editor (EL)

- International Journal of Water Resources and Environmental Management Associate Editor (EL)
- Journal of Earth Resources, Editor-in-Chief (EL)
- Member of Geoscience Advisory Council (Subsurface Hydrology), Ministry of Mines, Government of India (EL)
- Hydrology and Earth System Sciences, Editor (WB)

**Abbreviations: KH – Kate Heal, VK – Valentina Krysanova, BA – Berit Arheimer, EL – Elango Lakshmanan, WB – Wouter Buytaert*