

Preface

This colloquium is the continuation of a series of biennial international scientific meetings, organized jointly by the International Hydrological Programme (IHP) of UNESCO and the International Association of Hydrological Sciences (IAHS), addressing the most challenging fields of water resources research. These scientific meetings commemorate the late George Kovacs, an established authority on hydrology, who served as Chairman of the Intergovernmental Council of IHP and as Secretary General and President of IAHS. George Kovacs was a renowned groundwater scientist who graduated from Budapest University of Technology in 1947. In 1969–1970 he worked for UNESCO in Kenya, coordinating scientific and training activities in hydrology and hydrogeology in 34 African countries. From 1970 to 1975 he was Secretary-General of IAHS, then Vice President and from 1983 to 1987 he was President of the Association.

This 11th Kovacs Colloquium took place on 16 and 17 June 2014 at UNESCO Headquarters, Paris, prior to the 21st Session of the Intergovernmental Council of the IHP. The Colloquium comprised a series of invited lectures, an interactive panel session plus a poster session.

Water Security is defined by the IHP as “*the capacity of a population to safeguard access to adequate quantities of water of acceptable quality for sustaining human and ecosystem health on a watershed basis, and to ensure efficient protection of life and property against water related hazards – floods, landslides, land subsidence and droughts*” (UNESCO-IHP 2012¹), which was further reiterated by UN-Water in its policy brief on Water Security and the Global Water Agenda². Thus, Water Security not only addresses the threats posed by floods, droughts and pollution spills to human societies, but also includes the impacts of inadequate supplies of water, both in quantity and quality, for their critically important support to food and energy production, for domestic and industrial purposes, and for sustaining ecosystem productivity.

The Colloquium addressed the emergence and development of water security concepts. A special emphasis was on the new phase of IHP that aims to improve water security in response to local, regional, and global challenges through multidisciplinary and environmentally-sound approaches to water resources management. Of particular importance is the inclusion of the new IAHS decade of research “Panta Rhei – Change in Hydrology and Society” and its relevance to Water Security.

Thirteen invited keynote papers are included in this volume. Following an introductory paper by the editors, the scene is set with a number of overview papers. Blanca Jiménez-Cisneros of UNESCO introduces how the subject is central to the IHP in her presentation entitled “Responding to the challenges of Water Security: the Eighth Phase of the International Hydrological Programme 2014–2021”; Hubert Savenije of IAHS shows how the research agenda of the Association is relevant to the subject with his presentation on “Panta Rhei, the new science decade of IAHS”; Howard Wheater of Canada addresses “Water Security – science and management challenges”, Arpita Mondal and Pradeep Mujumdar from India consider “Regional hydrologic impacts of climate change: implications for water management in India” and Frans Berkhout of the Future Earth programme introduces water within “Anthropocene Futures and Water Security”.

The overview presentations are followed by a series of papers on more specific topics: Zbigniew Kundzewicz and Piotr Matczak of Poland on “Hydrological extremes and security” followed by Yan Huang from China who addresses the importance of infrastructure development in “Integrated

¹ <http://unesdoc.unesco.org/images/0021/002164/216434E.pdf>

² UN-Water, 2013 (1), Water Security and the Global Water Agenda. United Nations University, UN-Water Analytical Brief, 01/2013

water resources management using engineering measures”; Grigor Barenboim and his colleagues from Russia present on “New problems and opportunities of oil spill monitoring systems”; José Galizia Tundisi and his colleagues from Brazil on “Water availability, water quality and water governance: the future ahead”; Bruce Stewart of the World Meteorological Organization presents on “Measuring what we manage – the importance of hydrological data to water resources management”; Vazken Andréassian and his colleagues from France address “What part of natural flow can be considered a water resource?”; Michela Miletto of the United Nations World Water Assessment Programme presents the “Water and Energy nexus: findings of the World Water Development Report 2014” and Heribert Nacken of Germany considers “Capacity building for hydrological change – using a Blended Learning approach”.

The keynote papers are supplemented by two papers from the panel discussion held as part of the Colloquium, by António Chambel, Vice President, International Association of Hydrogeologists and by Alberto Montanari, Chair of the Panta Rhei initiative of IAHS, with colleagues Serena Ceola and Francesco Laio, and some 50 extended abstracts of the poster papers.

Thus, this Kovacs Colloquium volume provides a very comprehensive overview of water security issues, including a wide variety of perspectives from around the world.

The editors wish to thank all authors of keynote papers, panellists and poster presenters for their diligence in producing a very valuable set of papers. Special thanks are due to Cate Gardner of the IAHS Press for her dedicated efforts in compiling and producing the volume and to Barbara Kavuma Lwanga and Barbara Avila of the IHP Secretariat for their invaluable efforts in bringing the presentations together. The editors gratefully acknowledge the financial support provided by the UNESCO Division of Water Sciences for the organization of this, the 11th Kovacs Colloquium, and the financial support provided by both IAHS itself and IUGG – the International Union of Geodesy and Geophysics, the parent scientific non-governmental body of the IAHS – for the production of this volume.

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