INTERNATIONAL ASSOCIATION OF HYDROLOGICAL SCIENCES

International Conference on Enhanced Hydrological Understanding for a Better Society

25-27 October 2018 Harare, Zimbabwe

ORGANIZERS:

- Ministry of Environment, Water and Climate (Zimbabwe)
- University of Zimbabwe, Faculty of Engineering
- WaterNet
- Institute of Water and Sanitation Development (Zimbabwe)
- Zimbabwe National Water Authority
- International Association of Hydrological Science (IAHS)

INTRODUCTION

Securing water to meet current and future needs is one of the challenges confronting the global water sector. These challenges are compounded by the fact that everything changes, which means that the hydrological sciences must continuously innovate and evolve in both theory and practice. The Department of Civil Engineering, at the University of Zimbabwe, will be hosting the 3rd IAHS Panta Rhei Conference 25-27 October 2018 in Harare, Zimbabwe. Panta Rhei (Everything Flows) is the International Association of Hydrological Sciences theme for the decade 2013-2022. This theme seeks to address the multiple challenges confronting the hydrological sciences and takes cognizance of the fact that the hydrological and the socio-economic cycles are inter-connected.

Delegates are invited from the entire global community with interest in sharing experiences on hydrological contribution to societal well-being with particular focus on developing countries. Relevant papers and posters are invited from the entire IAHS community.

The Conference has been designed to cover four topical themes – Water secure cities, water-food-energy nexus, adaptive water governance and hydrological uncertainty.

Water secure cities

In the last few decades cities have grown in significant leaps, and it is estimated that by 2020 more people will be living in cities than in the rural areas. This rural to urban migration is more evident in sub-Saharan

Africa. However, the growth of cities is bringing new challenges associated with the hydrological cycle such as adequacy of water resources to meet rising demands, sanitation, water pollution waste water management and sustainability of development options and the ecosystem. The main question which this session tries to answer is, in what ways are the human flows into the cities affecting the water security in cities? In addition, the theme seeks to answer the question, in what ways are the changes in the hydrological cycle affecting the socio-economic aspects of the cities? Papers under this theme will be expected to focus on urban groundwater abstraction and contamination, rainfall-run-off relationships in cities, urban hydrology, waste water management, and urban water governance.

Water-food-energy nexus

Energy is one of the major drivers of economies, and water is being harnessed to secure energy flows. Energy needs at the global level continue to increase and are forecast to continue to rise in response to climate change. With increased population increased food production is required. This will affect land use dynamics, water usage and allocations. Energy production is therefore expected to experienced additional pressure. Similarly, the strong drive for bio-fuel will further affect water, food production and availability. This session tries to answer how the quest to secure energy flows to economies is affecting the hydrological cycle on the one hand, and food security on the other? The sectors being deprived of secure water for energy, and the resultant impacts on livelihoods will also be discussed.

Adaptive water governance

This session tries to understand how water governance is changing to adapt to the new realities confronting the water sector. Such realities include climate change, the menace of plastic, heavy metals and agricultural pollution in water bodies, limited access to water by a significant proportion of the population and unregulated groundwater mining in the urban areas. While it is acknowledged that many countries have established policies and institutions for effective implementation of Integrated Water Resources Management, evidence on the ground suggests that such instruments are weak or are not being enforced, leading to water insecurity, pollution, conflict and many other societal ills. This session will present an opportunity to share experiences on governance issues in light of the weak existing legal and institutional arrangements from the perspective of a rapidly changing society and hydrological system which, hence, calls for rapid adaptation to cope with such situations.

Hydrological uncertainty

Hydrological uncertainty is strongly linked with application of models which are driven by scant data for most parts of the developing world. Such models may be applied to better understand existing hydrological systems but are increasingly being used in predictions and forecasts especially when climate change is being considered. Making hydrologic predictions and forecasts under a changing environment is intertwined with having to deal with issues of predictive uncertainty. Predictive uncertainty arises from the errors in the model forcings, model parameters and process physics especially in view of the interactions and feedbacks from human-hydrologic systems. This makes accurate or reasonable hydrologic prediction and forecasting difficult, especially now that predictions are required, at hyper-resolution scales, to deal with the seemingly increasing occurrence of natural disasters of a hydro-meteorological origin (e.g. droughts, floods and flash floods). Thus, in this theme papers are invited that address the quantification, analysis/propagation and reduction of hydrologic predictive uncertainty from small-scale experimental catchments to continental scales, using stochastic and deterministic methods. A wide range of papers are expected which show progress in the quantification and propagation on input uncertainty from remote sensing, field observations and climate model input data and the reduction of predictive uncertainty through improvements in process physics and the inclusion of human systems in hydrologic models.

ORGANISER INFORMATION

The University of Zimbabwe was established in 1955 as the University College of Rhodesia and Nyasaland through the Royal Charter. The Charter was replaced in 1982 by the University of Zimbabwe Act after the attainment of independence in 1980. The University of Zimbabwe has 10 faculties. The Faculty of Engineering admitted its first set of students in 1976 and now boasts of seven Departments, namely: Aeronautical, Civil, Electrical, Geoinformatics and Surveying, Mechanical, Mining and Metallurgical Engineering. The annual student enrollment is currently 1200 including postgraduate students.

Since 1998, the Department of Civil Engineering has been offering regional master's degree programmes in water engineering. Through partnerships with WaterNet, more than 500 international students have graduated from the programme offered at the university of Zimbabwe as well as at other WaterNet partnership institutions in East, Central and Southern Africa. The Department of Civil Engineering has also been actively involved in research and capacity building partnerships with key government departments such as the Zimbabwe National Water Authority, the Institute of Water and Sanitation Development and other academic and research institutions in Zimbabwe and the region.

Web site: www.uz.ac.zw

Contact Information

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ABSTRACT SUBMISSION

Abstracts should be a maximum of 350 words. The format for all text (title, authors, abstract and key words) should be Times New Roman, font size 12 and single-spaced. The title should be no longer than 16 words and in title case. Authors' names should be written such that the initials appear first followed by the last name. The authors' names should indicate one corresponding author (with an asterisk*) and the email address of the corresponding author. The affiliations of authors should be shown through number superscripts, with only one affiliation per author. Five (5) keywords should be included in alphabetical order.

Each submission needs to clearly indicate whether it is submitted for poster or oral presentation. Authors should note that the method of presentation, whether oral or poster, does not reflect the quality of the papers.

Email abstracts to: Mr Webster Gumindoga (wgumindoga@gmail.com) and copy to Dr Collin collin.mabiza@yahoo.com; henrietaz@iwsd.co.zw
Deadline for submission of abstracts is 31 August 2018.

REGISTRATION FEES

Registration fees are US$200 per participant. These will cover conference material, teas and lunches for the duration of the conference.

TRAVEL AND ACCOMMODATION ARRANGEMENTS

Participants will be expected to arrange for their travel to Harare. The organizers will assist in securing visas where required.

Accommodation options will be shared with confirmed participants. These include the University of Zimbabwe Inn, lodges as well as registered hotel. Participants will be expected to pay for their own accommodation, breakfast and dinner.

KEY TIMELINES

30 July 2018	First announcement of conference information
21 August 2018	Second announcement of conference information
31 August 2018	Deadline for receiving abstracts
	Deadline for receiving registration forms
15 September 2018	Last announcement with detailed conference information
25-26 October 2018	Workshop
27 October 2018	Field trip

PRELIMINARY PROGRAMME

Date		**Activity**	
24 October 2018		Arrival in Harare Check into hotel Registration	
25 October 2018	Morning	Opening Ceremony	Welcome remarks from organizer and sponsors, group photos, general announcements
	Afternoon	Session 1	Themes: Theme 1: Water secure cities Theme 2: Water-food-energy nexus
26 October 2018	Morning	Session 2	Theme 3: Adaptive water governance
	Afternoon	Session 3	The 4: Hydrological uncertainty Closing session
27 October 2018	Morning	Field Excursion	
	Afternoon		
28 October 2018	Morning	Departure	