



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA



UNIVERSITY of the
WESTERN CAPE



United Nations Educational,
Scientific and Cultural Organization



3rd CHINAFRICA WATER FORUM CONFERENCE

WATER RESOURCES DIALOGUE: CHINAFRICA SERIES NO.3

17-19 AUGUST 2015

SCHOOL OF PUBLIC HEALTH

UNIVERSITY OF THE WESTERN CAPE

CAPE TOWN

SOUTH AFRICA

FINAL PROGRAMME

Day 1: Monday, August 17, 2015		
08h00-09h00	Registration and Reception	AGA
09h00-09h05	Opening & Welcome Prof. Frans Swanepoel, Vice Rector of University of the Western Cape	Prof MT Davies-Coleman/Prof Y Xu
09h05-09h15	Message from Consulate-General of the People's Republic China in Cape Town	Prof MT Davies-Coleman/Prof Y Xu
09h15-09h25	Message from the Department of Water and Sanitation	Prof MT Davies-Coleman/Prof Y Xu
09h25-09h35	Message from AMCOW (Mr. Charles Ngangoue)	Prof MT Davies-Coleman/Prof Y Xu
09h35-09h45	Message from UNESCO (Dr. Abou Amani)	Prof MT Davies-Coleman/Prof Y Xu
09h45-10h00	Introduction to 3 rd ChinAfrica Water Forum Dialogue Dr. Harrison Pienaar, Council of Scientific Industrial and Research, South Africa	Prof MT Davies-Coleman/Prof Y Xu
10h00-10h20 (Tea break at Lobby of PoCH)		
10h20-11h05	Keynote address: Addressing water security challenges in Africa, building on IHP8. Dr. Abou Amani, UNESCO Nairobi	Prof R Amer
11h05-11h30	Introduction to the NEPAD CoEs - Southern African Network of Water Centres of Excellence Mr. Nico Elema, Manager, SANWATCE - Southern African Network of Water Centres of Excellence	Prof R Amer
11h30-11h55	A Preliminary Investigation on Protection and Governance of Groundwater in Eastern China Prof. Fawang Zhang and Bing Bai, Karst Center in Guilin, China	Prof R Amer
11h55-12h20	A study on sustainable utilization of alluvial strip aquifers in semi-arid Namibia through managed aquifer recharge Mr. D. Sarma. Namibia Research.	Prof R Amer
12h20-12h30	Questions & Answers	Prof R Amer
12h30-13h30 (Lunch at Lobby of PoCH)		
13h30-14h15	Keynote address: Water quality challenges facing South Africa Prof. G Wolfaardt, Stellenbosch University, South Africa	Dr. H Pienaar
14h15-14h40	Impact for fracking fluid for shale gas on aquatic environment and its prevention strategy in Sichuan Basin Prof X Yi & Prof Yuan Lu, Chengdu University of Technology, China	Dr. H Pienaar
14h40-15h05	Impact of Flow-back Fluid on Environment during Shale Gas Reservoir Stimulation Prof S Zhang, Southwest Petroleum University and Prof. X Yi, Chengdu University of Technology, China	Dr. H Pienaar
15h05-15h30	Rural drinking water safety problem and its solution in China Prof C Liang, Ms. Shuyi Liu and Ms. Chunyi Wang, Sichuan University, China	Dr. H Pienaar
15h30-16h00 (Tea break at Lobby of PoCH)		
16h00-16h25	A study on technology of coking wastewater treatment in USTL	Dr. I Muchingami

	Prof Baigang An, University of Science and Technology, Liaoning, China	
16h25-16h50	Evaluation of cytotoxicity and inflammatory activity of wastewater collected from a textile factory before and after treatment by coagulation-flocculation methods Prof E Pool, University of the Western Cape, South Africa	Dr. I Muchingami
16h50-17h15	Decentralized domestic wastewater treatment solution Mr. Harry Yuan, Jinmin Water South Africa (Pty) Ltd	Dr. I Muchingami
17h15-17h30	Questions & Answers and Close of day 1	Prof E Braune

Day 2: Tuesday, August 18, 2015

09h00-09h25	Signing of MOU between WRC and IRCK with Remarks by Mr Dhesigen Naidoo, CEO of the Water Research Commission, South Africa	Dr S Liphadzi/E Karar
09h25-10h10	Keynote address: A review of the implementation of groundwater protection measures in South Africa (WRC project) Prof. Eeberhard Braune, University of the Western Cape, South Africa	Dr S Liphadzi /E Karar
10h10-10h35	Using geophysical methods in groundwater potential assessment of the Urban Bulawayo crystalline basement aquifer, Zimbabwe Dr. Innocent Muchingami, National University of Science & Technology, Bulawayo, Zimbabwe	Dr S Liphadzi/E Karar
10h35-11h00 (Tea break at Lobby of PoCH)		
11h00-11h25	Groundwater in Badain Jaran Desert in China Prof. Jiujiu Jiao, Hong Kong University, China	Prof B Hu/Prof P Kuang
11h25-11h50	Evaluation of nutrient and water management methods on nutrient loss and performance of tea in the Danjiangkou Reservoir area, China Dr. Ronghao Liu, Taiyuan University of Technology, China	Prof B Hu/Prof P Kuang
11h50-12h15	Smart Implementation of IWRM Mr. Matome Mahasha, Department of Water and Sanitation, South Africa	Prof B Hu/Prof P Kuang
12h15-12h40	Numerical Study on Groundwater Flow Cycling in Spring Creek Springshed Controlled by Seawater Intrusion through a Karst Conduit Network Prof Bill Hu, Jinan University, China	Prof B Hu/Prof P Kuang
12h40-12h45	Questions & Answers	
12h45-13h30 (Lunch at Lobby of PoCH)		
13h30-13h55	Message from CSIR : Remarks by the Council for Scientific and Industrial Research (CSIR)	Prof Jimmy Jiao
13h55-14h40	Keynote address: Satellite observation of water resources Prof. Bob Su, University of Twente, the Netherlands	Prof Jimmy Jiao
14h40-15h05	Predicting Spatial Patterns and Clustering of Algal bloom In the Trans-Provincial Dam Using LANDSAT 8 OLI IMAGERY. Mr. Oupa Malahlela, Research and Applications Development, South African National Space Agency, Silverton, South Africa	Prof Jimmy Jiao
15h05-15h30	Hydrogeological characteristics of the Omaruru Delta Aquifer System Mr. Brain Matengu, NamWater, Namibia	Prof Jimmy Jiao
15h30-15h55	Towards rural water security in Xhora River Mouth area of the Mbhashe Local Municipality	Prof Jimmy Jiao

	Dr. Sumaya Israel, Hydrogeologist, Groundwater Science, Natural Resources and the Environment, CSIR	
15h55-16h15	Hydrogeochemical Characteristics and Disease-related Analysis of Kaschin-Beck Disease Area, Zamtang County, Northwest Sichuan Plateau, China Prof Mo Xu, Chengdu University of Technology, China	Prof Jimmy Jiao
16h15-16h30	Close of day 2	Prof E Braune
16h30-17h00	Departure to the dinner function	AGA

Day 3: Wednesday, August 19, 2015

09h00-09h45	Keynote address: Quantifying impacts of environment change on coastal flood level: a case study in Pearl River Delta, China Prof. Xiaohong Chen, Sun Yat-Sen University, China	Dr S Adams
09h45-10h10	Protection and restoration of Heilongtan groundwater system in Lijiang, Yunnan, China Dr. Qiang Zhang, Chengdu University of Technology, China	Dr S Adams
10h10-10h35	The carbon flux of karst springs in the Cradle of Humankind, South Africa Dr. Hobbs, P.J. Council for Scientific and Industrial Research (CSIR), South Africa.	Dr S Adams
10h35-11h00 (Tea break at Lobby of PoCH)		
11h05-11h50	Keynote address: Water's role in triggering natural disasters in China Prof. Tianbin Li. Chengdu University of Technology, China	Dr. T Kanyerere/Prof E Braune
11h50-12h15	Sustainable development of Cape Flats Aquifer system Dr. Thokozani Kanyerere and Prof Yongxin Xu, Earth Sciences at the University of the Western Cape, South Africa	Dr. T Kanyerere/Prof E Braune
12h15-12h30	Characterizing groundwater dynamics using phreatophyte vegetation density in the Upper Molopo catchment, South Africa Mr. Naledzani, Ndou, North-West University, South Africa	Dr. T Kanyerere/Prof E Braune
12h30-13h30 (Lunch at Lobby of PoCH)		
13h30-13h55	Effects of Cadmium on RAW 264.7 cells Ms. Lategan, K. & Prof. Pool. University of the Western Cape	Prof Y Xu
13h55-14h20	Urban water management and role of women: a study in nine Africa States Prof. J Goldin, University of the Western Cape, South Africa	Prof Y Xu
14h20-14h45	The Data Acquisition and Management Strategy for the Water Sector By Mr. M. Mukhawana and Mr. M. Ntombela, Department of Water and Sanitation, Pretoria, South Africa	Prof Y Xu
14h45-15h10	Conference statement and way forward AMCOW, DWS, WRC, CSIR, IRCK, UWC, UNESCO etc	Prof Y Xu
15h10-15h30	Tea break and Conference closure (Tea break at Lobby of PoCH)	All

Notes: The English is the language for the conference

Conference Statement

19 August 2015

Conference Statement

ChinAfrica Water Forum Resources Dialogue No. 3

Sustainable Utilisation of Water Resources in Developing Countries

University of the Western Cape, Cape Town, South Africa, 17-19 August 2015

The Forum, which met for the first time in 2013, which also marks the International Year of Cooperation on Water, was created as an active platform of international cooperation and exchange on water and environmental issues between Africa and China. Its objective is to work towards a lasting partnership between the two regions in the area of sustainable utilisation of water resources in developing countries. Both China and Africa face massive challenges of human development in a changing environment, and have very similar water resources management priorities, particularly from a research, development and implementation perspective.

Significant progress towards the above objective was made since the second ChinAfrica Water Conference held in China in 2014. The Council for Scientific and Industrial Research (CSIR) of South Africa has entered into a Memorandum of Understanding with the International Research Center on Karst (IRCK) in China. At this 3rd Conference a similar MoU was signed between the International Research Centre on Karst (IRCK) and the South African Water Research Commission. Furthermore, a desktop study has been launched in both countries as foundation for a joint pilot project in the area of groundwater governance. This is to serve as a forerunner of ongoing joint research, development, innovation and implementation in the area of water and development.

A fresh priority for this water sector cooperation was provided by the political opening created through the BRICS (Brazil, Russia, India, China and South Africa) process. Another important framework development is the China Africa Cooperation Addis Ababa Action Plan. The African Groundwater Commission was also approved by the Heads of State of African Union in 2008 in Sharmh El Sheikh (Egypt) and forms part of the Sharmh El Sheikh Commitment.

The excellent, wide-ranging presentations and stimulating discussions made it abundantly clear that environmental problems are becoming increasingly complex and can only be tackled in multi-partnership ways. Most importantly, this needs to lead to a preparedness globally, regionally, nationally and locally for the water resource shift that is going to occur in both space and time. Examples of such major environmental disturbances were addressed from both continents, e.g. climate change and rapid urbanization in China and the wide-spread acid mine drainage issue and the possibility of region-wide shale gas development in South Africa. Learning from each other's implementation histories (e.g. fracking in China) could be tremendously beneficial. There are also major opportunities for fundamental science contributions, e.g. the carbon flux of Karst formations in both China and Africa.

Environmental quality issues are particularly challenging, with many micro-constituents getting undetected into the freshwater and marine environment. Research for appropriate water treatment technologies is ongoing in both continents. There is also concern about the proper authorization of such discharges and the operation and maintenance of treatment facilities. There is also a need for low maintenance technologies for the hundreds of small treatment facilities for domestic effluent in rural areas.

A general challenge is the need for much increased and integrated monitoring, often using latest technology advances – e.g. above the ground the increasing number of satellites and on the surface the global coverage with microwave infrastructure. The security of monitoring equipment remains a special concern all over Africa. Equally challenging is to use these different data sets in integrated ways to understand and even forecast land and atmosphere interaction. Adopting such approaches, Africa has an excellent opportunity to take a major technology jump, together with other developing countries.

Both countries see decentralized management of water resources as strategic in their overall management approach. Major learning has taken place in South Africa which started with one of the most modern IWRM legislations about 15 years ago.

A number of cooperation scenarios were sketched, with potential regional impacts.

Events of the Water Forum could take place under the overall umbrella of the African Ministers' Council on Water (AMCOW). AMCOW would assist in bring different partners in the widest possible focus on regional development and water security. The different Regional Economic Communities, The Community of Sahel-Saharan States (CENSAD), Eastern African Community (EAC), Economic Community of Central African States (ECCAS), Common Market for Eastern and Southern Africa (COMESA), Economic Community of West African States (ECOWAS), Intergovernmental Authority for Development (IGAD), Union du Maghreb Arabe (UMA) and Southern African Development Community (SADC), all with their water technical advisory structure, would play an implementation role in their area.

Special focus would be given to the neglected resource, groundwater, in line with a policy direction which AMCOW has already been looking to implement for a number of years now. For this purpose, every effort will be made to make AMCOW's Africa Groundwater Commission fully functional.

AMCOW together with its development partners would help to create mobility of water experts from across the continent to participate in the Water Forum initiatives and related events and projects.

The UNESCO IHP in sub-Saharan Africa (Office in Nairobi) would support associated capacity development through short courses and networking through its International Hydrology Program (IHP) Water Family. UNESCO can also assist to draw in the growing networks of the NEPAD Water Centers of Excellence being established across the continent.

The International Research Center on Karst (IRCK) is linked to the China Geological Survey and is a well-established UNESCO Center. This creates opportunities for strengthening science excellence and further promoting regional cooperation.

To achieve a systematic profiling of research emanating from the regional partnership, it was suggested to secure a special issue (focusing on China Africa water issues) in the Hydrogeology Journal.

As a trigger for the above developments, both the Water Research Commission and CSIR are already planning first cooperation actions with the IRCK and a number of possible topics were highlighted at the Conference that could become pilot projects.

Importantly, the Water Forum meetings will in future rotate between African countries. The participation of countries like Namibia, Zimbabwe, Egypt (among other) at this Water Forum already paves the way for broader regional cooperation within the African continent. A side event focusing on ChinAfrica can already take place back to back with the next Africa Water Week to be scheduled by AMCOW.

Dr H Pienaar: Chairperson of the organizing committee of the 3rd Conference of ChinAfrica Water Forum.

Prof Y Xu: Chairperson of the ChinAfrica Water Forum and UNESCO Chair of Hydrogeology.

On behalf of participants of the 3rd Conference of ChinAfrica Water Forum

