

Megacities: Interactions between land use and water management

Venue: Sun Yat-sen University, Guangzhou, P R China
Time: November 25 - 26, 2009

Language: English

Scope and guiding questions

2007 was a turning point in history of humanity: For the first time more people lived in cities than in the country. The United Nations estimate that 1.8 billion people will be living in rural as well as in urban areas which will experience absolute water scarcity by 2025. Even in Guangdong Province with a yearly mean rainfall of 1778 mm, seasonal and regional water shortage is serious due to high density of population and rapid development of economy. Intensive human activities, e.g. quick land use changes, cause big changes of runoff and water use. In the Pearl River Delta especially water pollution and seawater intrusion aggravate water shortage in recent years.

Protecting, enhancing and managing the resource water closely relates to the understanding of the interactions of land-cover and land-use change with water cycles and how these interactions affect ecosystems and the management of natural resources. As water is becoming a critical factor for sustainable development in Guangdong Province, the impact of different forms of land use and urbanization surely must be considered in order to ensure that both systems provide sustainable outcomes.

This forum aims to offer a multi-disciplinary platform for water experts and professionals, within and outside of the region, to exchange their views and research findings on a wide range of water problems in the Pearl River Delta as well as in other (mega) urban agglomerations.

- How does land use change affects natural and technical water cycles?
- What are the driving forces for land use changes?
- What informal actions, positive as well as negative ones, influence water quantity and water quality?
- How can the interactions of land use (change) and water be assessed and conceptualized within the global change processes?
- Did the similar situation of land use change and the corresponding water use change once happen in the history of Germany?
- What is the difference of water use and water management between China and Germany?

It will be an excellent opportunity for hydrologists from China and Germany to meet and jointly search for more effective and science-based solutions for water management in such an intensive change region.



Sessions

Impact of land use on water resources

- Impact of urbanization on water resources
- Impact of agricultural use on water resources
- Impact of industrial land use on water resources

Water quality and health aspects

- Surface water quality in Guangzhou and the Pearl River Delta
- Groundwater quality in Guangzhou and the Pearl River Delta
- Tap water and drinking water quality in Guangzhou and the Pearl River Delta
- Impact of water quality on human health related to inhabitants of Guangzhou
- Sea water intrusion in the Pearl River Delta

Methods and data modeling

- Measuring interactions (indicators, methods)
- GIS Modelling of land use change and possible impacts on the water cycle
- Modelling techniques and scenarios for sustainable mega urban development

Water resource management

- Optimal allocation of fresh water for rapid developing megacities
- Coverage with fresh water in peri-urban areas in Guangzhou and the Pearl River Delta
- Water resources management in rapid developing megacities
- Best practices of improving water-related sustainable development in Guangzhou
- Comparison of water management between cities in Germany and Southern China

Forum Publications

A proceedings book and CD-ROM containing all accepted (i.e. peer-reviewed) papers will be made available for distribution to all participants at the Water Forum.



Important Dates of Deadline

August 05, 2009	Submission of abstracts with no more than 500 English words
August 10, 2009	Notification of acceptance, sending of acceptance letters to selected participants
September 10, 2009	Deadline submission of full papers with no more than 8 pages
October 05, 2009	Deadline correction of review notification

About Guangzhou and the Pearl River Delta

With a history of over 2200 years Guangzhou is the largest and most prosperous city in South China and therefore so called the “South Gate of China”. It is not only a civilized ancient city, but also a modern city which is the political, economic, educational, cultural as well as scientific and technological center in South China. Guangzhou is also a popular tourist destination with a few beautiful and legendary nick names: Huacheng (the Flower City), Yangcheng (the Goat City) and Suicheng (the Rice-ear City). Vegetation is evergreen and flowers bloom all the year round thanks to a moist subtropical climate. There are more than 150 famed scenes and sights in Guangzhou and a good variety of modern facilities for recreation and entertainment.

The Pearl River Delta, represented by the “Golden Triangle” of Guangzhou - Hong Kong - Macao, has been the fastest developing region in China since the country adopted the “open door and reform” policy in the late 1970s. Over the past 25 years economic development at annual growth rates of nearly 20% on the average (world records of continuous growth for such a long period) has been maintained in the delta region, leading to over 100-fold increase of GDP in many counties and municipalities. The region is also called “World Factory” due to its massive export-oriented manufacturing. As a result of rapid urbanization and industrialization, this region has witnessed enormous environmental changes within only one to two decades and such changes in developed countries may have occurred only after up to one century of development. The rapidly changing environment of the delta region exhibits a variety of very typical water problems also faced by many other urbanized areas in Asia. Moreover, the Pearl River Delta also uniquely has one of the most complex deltaic drainage networks in the world as well as a highly dense agglomeration of over 100 towns and cities. To conduct the conference in Guangzhou it will provide participants with excellent opportunities to visit this highly dynamic region and experience the water problems.

Organization

Xiaohong Chen

Sun Yat-sen University
Department of Water Resources & Environment (CHN)

Rafiq Azzam

RWTH Aachen University
Department of Engineering Geology and Hydrogeology (GER)

Scientific Committee

R. Azzam (GER), K. Baier (GER), S. Guo (CHN), F. Kraas (GER),
Z. Lei (CHN), C. Liu (CHN), C. Neukum (GER), H. Sun (CHN),
H. Wang (CHN), J. Xia (CHN), J. Zhang (CHN)

Organizing Committee

X. Chen (CHN), Y. Chen (CHN), T. Fernández-Steeger (GER),
S. Kang (CHN), W. Li (CHN), L. Lu (GER), C. Post (GER),
R. Strohschön (GER), W. Xu (CHN), D. Yang (CHN), Z. Xu (CHN)

Submission of abstracts and full papers to

submission@megaurban-water.org

Forum Secretariat

Prof. Dr. Qiang Zhang or Dr. Kairong Lin

Department of Water Resources & Environment
Sun Yat-sen University
Guangzhou 510275
P R China
Tel: +86 20 84114575
Fax: +86 20 84114575
Email: zhangq68@mail.sysu.edu.cn; linkr@mail.sysu.edu.cn

Dr. Klaus Baier or Ramona Strohschön

Department of Engineering Geology and Hydrogeology
RWTH Aachen University
52064 Aachen
Tel: +49 241 8096771; +49 241 8096782
Fax: +49 241 8092280
Email: baier@lih.rwth-aachen.de; stroyschoen@lih.rwth-aachen.de

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