2016 Trans-Oceanic Water Source Summit: The Energy-Water-Waste Nexus

The 2nd Trans-Oceanic Water Source Summit took place at the Shanghai Music Conservatory on the World Environment Day, 5th of June, 2016. The Summit was co-organised by ESSCA School of Management – Shanghai, Oriental Danology Institute, Konrad-Adenauer Stiftung – Shanghai, the Consulate General of Chile – Shanghai, Hamburg Liaison Office in China, Business Ecology, and the Shanghai Music Conservatory. More than 80 representatives from 9 countries participated in the Summit.

The Summit provided a platform for scholars, businessmen, politicians, and civil society actors across Asia, Europe and South America to exchange ideas on environmental protection and sustainable development. This year's topic was focused on the energy-water-waste nexus and management solutions for these resources. During the welcoming remarks, the Consul-General of Chile, Gustavo GONZALEZ addressed the importance of water in social and economic development and highlighted how best use of water resources is key to the sustainable growth. Tim WENNIGES, Director of the Konrad-Adenauer Stiftung – Shanghai highlighted the important work of researchers in facilitating exchange of innovative ideas and incorporating local anthropological specificities, while Lars ANKE, Director of the Hamburg Liaison Office in China stressed the positive impact of getting political decision makers from Europe and Asia together to exchange on the challenges they face and the solutions they have implemented in their respective municipalities.

The ecological team from Shanghai Music Conservatory and Dr. ZHOU Lei from Oriental Danology Institute prepared a welcoming performance to congratulate the opening of the event. The performance entitled *Imaging New Water Sensory Possibilities: the Flow of Sound & Objects Between Asia and the Americas* integrated with traditional Chinese Xun play, Taoist drumming ritual, and a ceremony from a South American Shaman. The performance aimed to increase the audience's awareness of an impending water scarcity crisis in countries like Chile and showcased a balanced integration between the environment and human beings by using sensory delivery and visualization. Professor XIAO Mei from Shanghai Music Conservatory explained that the land is devastated and water resources are at a critical point, and she continued that the drum represents winter in Chinese culture, and the use of wind and thunder elements at the performance symbolize the end of winter and the welcome spring.

Maximilian Rech, Programme Director and Assistant Professor of ESSCA School of Management Shanghai, delivered a keynote speech on the improvement of urban management efficiency at the Summit. He suggests a circular economy model shall be adopted to deal with energy and environmental issues. Nexus thinking and an integrated approach can provide solutions for the functioning of a complex system. Energy, water, and waste are inter-connected as energy production requires considerable amounts of water and water infrastructure depends on substantial input of energy, while waste treatment needs energy and pollutes water. On the Chinese case, he emphasized that the energy-rich region of China's Northwest has very little water resources. Thus, the government, industry, and academia, the three pillars of China's sustainable development, need to take coordinated and prompt actions, such as to identify

impact and risks of water shortage and to exchange successful practices with other countries. In the end, he provided three recommendations to the current practices: to narrow down the price gap for water between benchmark price and actual price; to improve energy efficiency by introducing new technologies, such as dry cooling instead of resource intensive water cooling; and to establish a waste hierarchy to improve the efficiency of the strategy to reduce/reuse/recycle waste.

Panel A: Water Development Formula: Knowledge Convergence and the Water Projects

Panel A speakers mainly focused on ecological management of Three Great Rivers and the use of resources, information, and technology from Shanghai Free Trade Zone to assist cross-border cooperation. The leading scientist YANG Yong from Hengduanshan Research Institute and Manla KYI, a Tibetan ecology conservationist, both welcomed the pilot project to establish a national park at the Three Great River region by the government. They considered that such a move could restrict commercial development and decrease relevant environmental destruction. This example showcases that the government can act to put the public interest before economic growth.

Dr. ZHOU explained that the Three Great River National Park is not a copy of Yellowstone, but a measurement to bring water resource, animal and plants ecological resources, and human resources together, which could form a regional community to protect the core of Asian ecological system by sharing water technology, encouraging water innovation, supporting water development and protection. He named this model the “water development formula.”

Petras Shelton ZUMPANO, Head of BRICS Future of Oriental Danology Institute, proposed to establish a new mechanism in the Shanghai Free Trade Zone to boost cross-border knowledge sharing and transformation. He added that Shanghai’s “ocean economy” could best fit with Qinghai and Tibet’s “river economy”. Yangshan Port in Shanghai could be specialized on such cooperation becoming a vantage point for commercial exhibitions, media communications, and attract investment to improve big data analysis and a more sustainable supply chain management. He believed that such an initiative could minimize the environmental damage and contribute to business development.

Panel B: Water Technology: From System Thinking to Think System – Sharing Best Practices

Panel B brought local experts in business and academia to share good practices across the Eurasian landmass. Kai-Justin Radmann, ConsulAqua of Hamburg Wasser GmbH discussed the case of Hamburg in the panel. He indicated that underground water represents more than 70% of Hamburg’s total water use because of relatively heavy industrial pollution of surface and river water – a situation similar to the Chinese case. Due to relative abundance of water in Germany, water quality issues are more serious than the water scarcity, and the invasion of sea water leading to salinization also deteriorates fresh water resources in northern Germany. He also shared some experiences that could be used by the Chinese side. Technologically, desalination of brackish water is more energy-efficient compared to desalination of seawater,

and Germany also uses riverbank filtration to increase the quality of water. However, except for new technology, a well-established and strictly implemented legal system with clear "incentive/punishment mechanisms" is also effective.

Prof. ZHANG Jiong from Shanghai Jiao Tong University shared his experience of how to design a sustainable architecture near, above, or under the water. He said that water has a key role in the urbanization process as an ecological barrier on the one side and as a charming landscape on the other side. He encourages designers to incorporate people-oriented philosophy into their work. Analysing one of his design works, he showed how to connect people and water by integrating features of the natural environment such as the riverbank and bamboo forests, and reflect and mirror them in architectural design. He concluded that water makes urban life more interesting and meaningful.

The other two experts demonstrated their presentations on the local practices in Shanghai. Dr. WANG Jieqiong from Tongji University studied pilot project of a human constructed wetland in downtown Shanghai and analysed its impact on ecological remediation. Her studies showed that wetlands can fulfil self-purification functions. Using natural current of rivers, the researchers designed a canal with different ponds that purify water of pollutants. Dr. CHEN Zujun from the Shanghai Water Planning and Design Research Institute then provided the audience with insights into Shanghai municipality's water management. Introducing local river systems and hydrology, he highlighted that Shanghai is downstream of the very industrious city of Suzhou and Jiangsu province. The Yangtze River Delta and Taihu Lake, that represent Shanghai's two principal water sources, are heavily polluted. While Shanghai municipal decision makers have an in-depth understanding of the situation, the combination of salinization – as in northern Germany – and upstream industrial pollution pose an almost insurmountable challenge on maintaining water quality in this city of almost 25 million people.

At the end of the Summit, Dr. Zhou summarized the conference and proposed consensus building among global scholars, businessmen, ecologists, government, media, and philanthropists. The participants of the Summit then headed to Zhang Garden for a visual aqua-crafts live show and a creative Chilean cuisine dinner reception.

Further readings & press clippings

东方早报 Dongfang Daily
http://www.chinastock.com.cn/yhwz_about.do?methodCall=getDetailInfo&docId=5380025
央广网 CNR (Via 凤凰网)
http://news.ifeng.com/a/20160606/48926265_0.shtml
文汇报 Wen Hui Bao
http://wenhui.news365.com.cn/html/2016-06/08/content_430116.html
自然力研究院 Oriental Danology Institute

http://www.odinfinity.org/qiankun/%E7%AC%AC%E4%BA%8C%E5%B1%8A%E4%B8%96%E7%95%8C%E6%B0%B4%E5%B3%B0%E4%BC%9A%E6%89%93%E9%80%A0%E4%B8%89%E6%B1%9F%E6%BA%90%E5%9B%BD%E5%AE%B6%E5%85%AC%E5%9B%AD%E4%B8%8E%E8%87%AA%E8%B4%B8%E5%8C%BA%E7%BB%8F/

中国新闻网 China News

http://www.sh.chinanews.com/kjws/2016-06-08/6165.shtml

中国社会科学网 China Social Science Network

http://philosophy.org.cn/zx/shwx/shhnew/201606/t20160606_3060134.shtml