

# **Urban Water Security: Water – Energy – Food Nexus**

**A co-lead programme of the China Europe Water Platform**

Presentation to the EUWI Multi-Stakeholder Forum  
Seminar at the World Water Week in Stockholm, Sunday, August 31, 2014

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# China Europe Water Platform

- Promotes policy dialogue, joint research and business development in the water sector between EU and China.
- Activities are organized within three work areas
  - Rural water challenges
  - Urban water challenges
  - River Basin and Flood Management

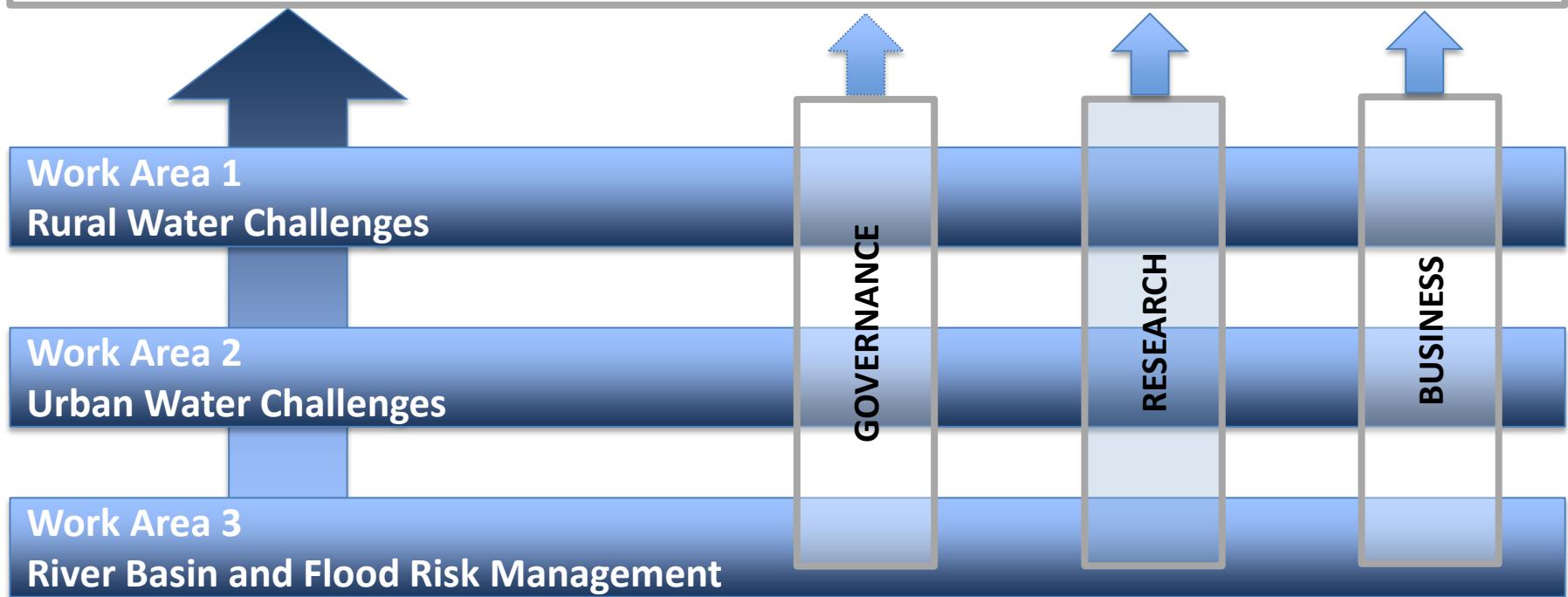


Ministry of Water Resources of the People's Republic of China and the Presidency of the Council of the European Union, represented by the Danish Minister of the Environment launched CEWP at the 6th World Water Forum in Marseille, France, March 2012 by signing of a Joint Statement.



# Structure

## POLICY DIALOGUE



# Work areas and programmes

Work Areas and Programs	Chinese Partner	European Country
<b>Rural Water Challenges</b>		
Groundwater Management	Shandong Province	Denmark
Irrigation efficiency and management	CIDDC	Portugal, Spain
Small scale hydropower	International Institute of Small Scale Hydropower	Austria
<b>Urban Water Challenges</b>		
Integrated Urban Water Management	China Academy of Urban Planning and Design	Denmark
Urban Water Security: Water – Energy – Food Nexus	Nanjing Hydrology Research Institute	Sweden, UK
<b>River Basin and Flood Risk Management</b>		
Flood risk management and River Basin Management	Institute of Water Resources and Hydropower Research, Hai He River Basin Commission	Netherlands, France
IWRM, River Basin Planning, Water Quality	Hai River Basin Commission	France





## CEWP COOPERATION ON SMALL HYDROPOWER

# Co-Lead Partnership China – Austria Cooperation Activities

## Overall objectives

- Establish common understanding and technical basis towards development of *environmental standards/guidelines, upgrading and optimisation measures regarding small scale hydropower schemes*;
- Achieve these objectives through **two technical workshops** (China and EU involving about 20(+) relevant stakeholders AND drafting basic guidelines).
- Selection of pilot sites for later implementation of standards/guidelines.
- Develop Project Implementation Plan



# Co-Lead Partnership China – Austria Cooperation Activities

## Deliverables/Outcomes

- ◎ **Joint activities** on hydropower planning are **identified** for implementation
- ◎ **Common understanding** on guideline development on the implementation of environmental standards related to small scale hydropower taking into account (i) existing and (ii) planned hydropower schemes is established
- ◎ **Selected pilot case studies** are in place
- ◎ **Stakeholder analysis** undertaken and list available
- ◎ **Draft Outline of guidelines** on environmental standards and optimisation measures regarding small-scale hydropower (China – Europe) are available
- ◎ Consolidated Implementation Plan and detailed work programme





## CEWP COOPERATION ON URBAN WATER SECURITY AND THE WATER ENERGY FOOD NEXUS

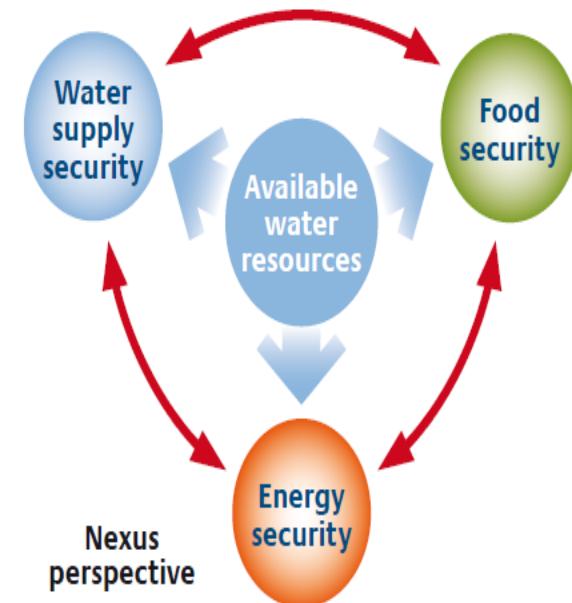
# Ensuring Urban Water Security: Water-Energy-Food Nexus

## Objectives:

- Exchange between Chinese and European authorities on state of the art approaches and technologies
- Improve methods for analyzing synergies and conflicts between the major water uses of domestic, industrial, agricultural and energy production in urban areas
- Improve policy coherence between water and energy in China and the EU

## Key activity areas:

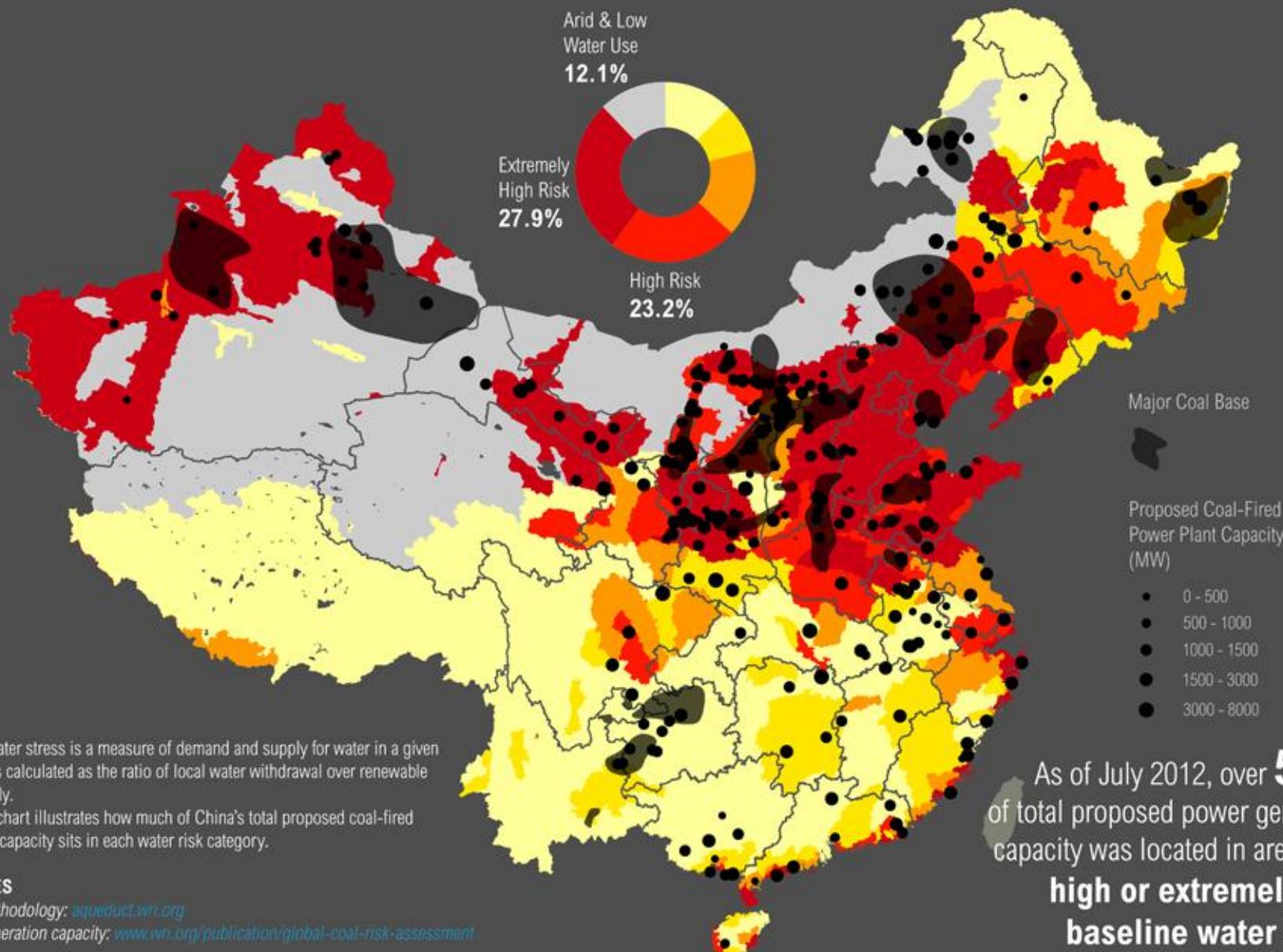
- Taihu Basin Region Urban Water Security Programme
- Managing water risks in China's energy sector
- Managing energy risks in China's Urban Water Sector
- Sustainable and intensive agriculture for urban areas



# Common Urban Nexus Challenges in China and Europe

- Growing water and energy demand resulting from urban growth
- Coherence of energy and water policy
- Linking resource management to spatial planning
- Need for optimisation of urban infrastructure for water and energy efficiency
- Technical knowledge gap on water risks in unconventional energy
- Evaluations and growing focus on policy coherence between water, energy and food



**REFERENCES**Aquaduct methodology: [aquaduct.wri.org](http://aquaduct.wri.org)Proposed generation capacity: [www.wri.org/publication/global-coal-risk-assessment](http://www.wri.org/publication/global-coal-risk-assessment)

# Urbanization drives demand for energy, food & water



By 2030, China will be home to 1 billion urban residents

# Summary of current activities

## Taihu Region Urban Water Security Programme

This program seeks to apply and develop a methodology for operationalizing nexus approach at a regional scale in the Chinese context. It will:

- Map and assess water and energy inter-linkages in the Taihu basin and how those are impacted by the urbanization process.
- Perform pathway and policy analysis to increase water-energy resource use efficiency
- Devise regional sustainable intensification development strategy

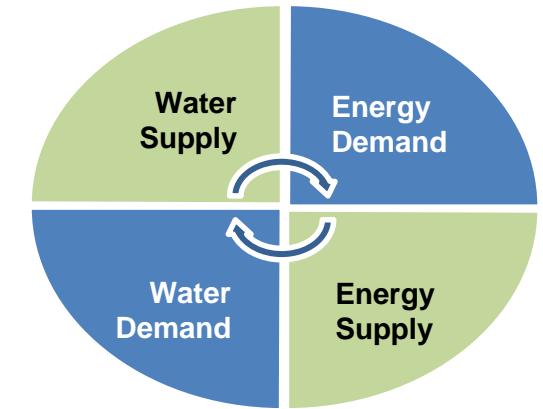
## Managing water risks in China's energy sector

This programme will provide a systematic review and forecast on the water reserve in China's main energy bases with detailed situation, current utility condition and main feature. It will:

- Establish a quantitative model calculating the main energy bases maximum production scale considering local water carrying capacity.
- Provide policy proposal suggesting the main energy bases energy type, production methods and scale in the "Energy Thirteenth Five-Year Plan" to achieve both water and energy SDGs.



Water Evaluation and Planning System



Long range Energy Alternatives Planning



# Summary of progress and plans

## Results:

- Partnership agreements between multiple parties
- 2 programmes in progress, 1 completed
- 1 research programme submitted to Chinese Ministry of Science and Technology to begin in early 2015
- Workshops, presentations and knowledge exchange on nexus in EU and China

## Next Steps and Planned Outputs:

- Taihu Regional Urban Water Security Programme Inception 2015-2017
- Policy proposal for 13<sup>th</sup> 5 year plan for energy to achieve water and energy SDG (March 2015)
- Report and policy recommendations on key issues to be addressed in water management in China's shale gas and SNG development (March 2015)
- Staff and technical exchanges between partners (Spring 2015)

## Insights and conclusions

**Chinese and European actors have established an active dialogue and joint work on water and energy nexus.**

**Chinese responses to resource challenges will be critical for global sustainability and learning.** There is great demand for innovation in water and energy efficient technologies, and room for European solution providers as a result.

**Central level policy is taking action to better integrate water resource implications of energy development decisions.** However, a comprehensive analysis across energy, water and food targets is needed to guide implementation of water targets.

**Legal and institutional frameworks to promote coherence in policy implementation must be developed as a priority.** Stakeholder management and coordination between ministries is improving but is biggest obstacle to effective implementation.

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### Full list of participating organizations:

Swedish Ministry of Environment, UK Foreign Commonwealth Office, Ministry of Water Resources/CEWP China Secretariat, Stockholm Environment Institute, SIWI, Atkins International, Nanjing Hydraulic Research Institute, Institute for Water and Hydropower Research, Stockholm Royal Institute of Technology, Applied Energy Innovation Center, MWR-DRC, World Resources Institute, GIWP, ChangCE

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**Thank you!**

Interested to learn more? Join us for our seminar!

**China Europe Water Platform: Driving Innovation,  
Partnerships and Dialogue, Thursday, September  
4th, 09:00-12:30, Room K24**

Learn more about China Europe Water Platform activities at  
[www.cewp.org](http://www.cewp.org)