



Policies, Innovation And Networks for enhancing Opportunities for China Europe water cooperation (PIANO)

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Innovation Workshop

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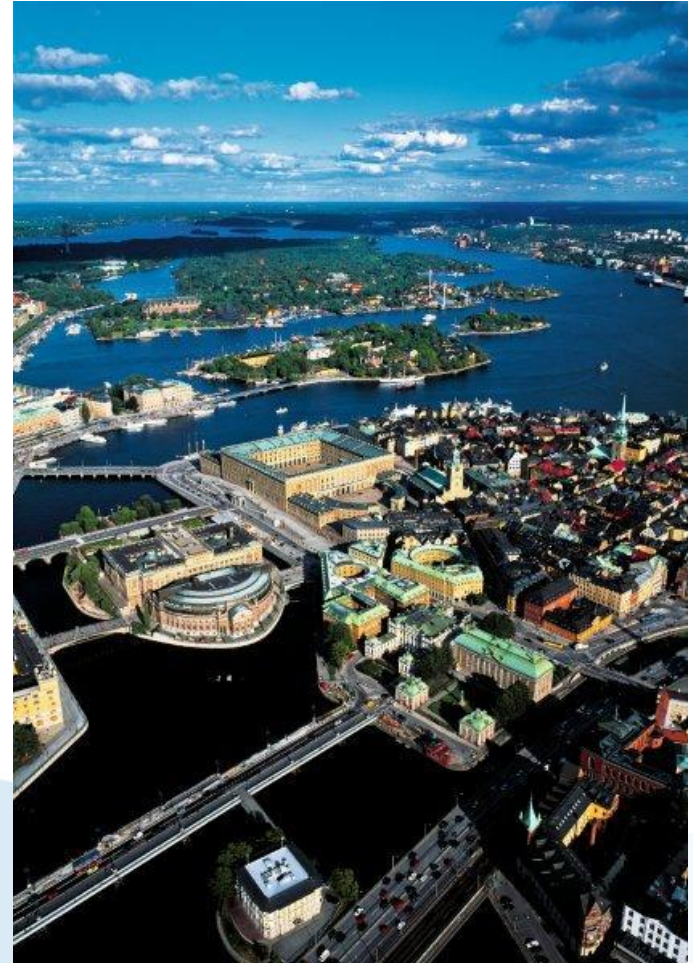


Note: PIANO has been invited for grant preparation upon successful evaluation, however, it is subject to successful conclusion of grant agreement preparation which is still pending.

About SIWI

The Stockholm International Water Institute (SIWI) is a policy institute that contributes to international efforts to combat the world's escalating water crisis.

- Office in Stockholm, Sweden
- 65 staff members + 10 associated experts
- Non-profit, politically neutral
- Founded in 1991
- Supported by the Swedish government, City of Stockholm and founders of the Stockholm Water Prize.
- Programmes and activities also funded by multi- and bilateral donors and international organisations/agencies.



SIWI: Knowledge Services

Knowledge Services



Water governance



**Transboundary
water management**



**Water and climate
change**



**Water, food and
energy**



**Water and
economics**

Applied research • Advisory services • Capacity building

Gender • Integrity • Poverty • Human rights/Democracy • Environment

CEWP Work Area

Urban Water Challenges

Urban Water Challenges
Lead: Sweden / UK

Co-Lead Partnership:
Integrated Urban Water Management
China - Denmark

Co-Lead Partnership:
**Urban Water Security and the
Water Energy Food Nexus**
China – Sweden – United Kingdom

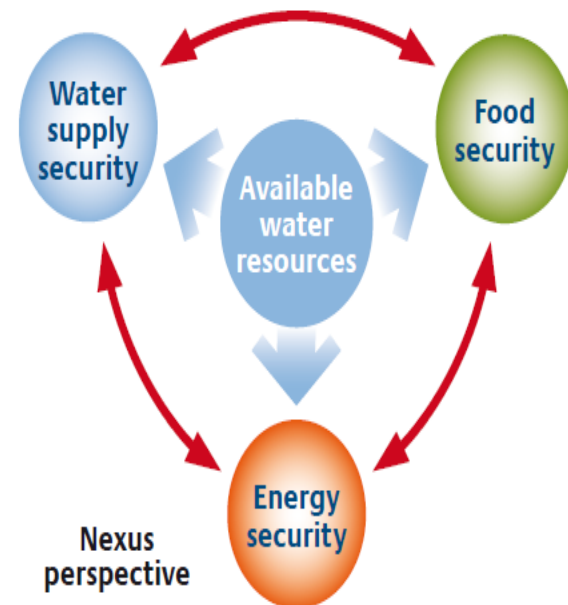
Ensuring Urban Water Security: Water-Energy-Food Nexus

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 activities:

- 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





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What is water innovation?

Innovation

- “the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations”

Water technologies

- “products and processes that modify, optimize, support, are part of, or constitute entirely new treatment technologies, water use technologies, water production technologies, water management technologies, technologies for flood protection or energy production.

What is driving demand for water technological innovations?

A recent paper from the OECD Working Party of Biodiversity, Water and Ecosystems (2012), identified these major drivers for “Smart Water Systems”:

- **Water shortage and scarcity**
- **Population growth and urbanisation**
- **Water, environmental and public health legislation and standards**
- **Climate change**
- **Enhancing the efficiency of water infrastructures**
- **Efficiency and competitiveness of water utilities**
- **Water finance and tariffs**

A window of opportunity for Europe and China

Strong demand from China for existing European water innovations.

- Large market and need in Chinese water sector: 60-100 billion EUR/year

There is a powerful foundation of innovation networks to build upon

- There are a number of active innovation networks in water across the European Union and in member states, including EIP, WssTP, JPI, and CEWP, which can connect to China to better effect.

New opportunities for collaboration between and beyond EU and China

- Successful innovations performed in China, could find further opportunities in the global market.
- Knowledge exchange on innovation systems can provide mutual benefits and lead to more strategic cooperation.

Environmental challenges drive demand for innovation...

We will need to focus on areas of common challenges, and uncommon potential.

The PIANO consortium has identified five focal areas informed by an expert group from the EU and China.

1. Agricultural Water Management
2. Municipal Water Management
3. Industrial Water Management
4. River Basin Management
5. Water for Energy

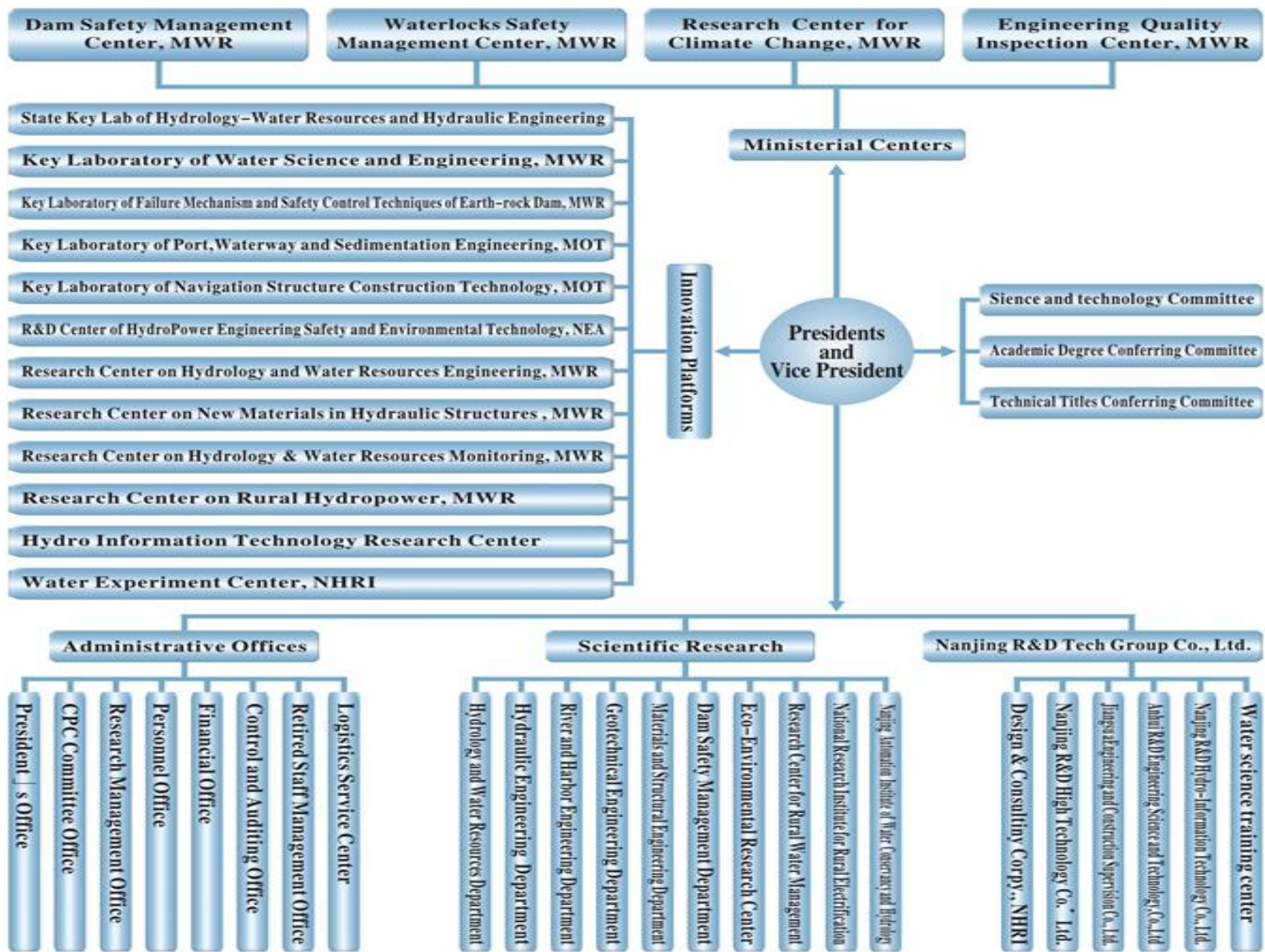
but institutional challenges can slow their uptake...

Barriers can hamper the implementation and replication of technological water innovations. These can be:

- Institutional barriers: Where we must better understand the institutional framework for implementing water innovation
- Social barriers: Understanding the users of innovations, and ensuring they take it forward.
- Economic barriers, specifically in
 - Procurement
 - Standardization
 - IPR Protection

...and require improved understanding and links between the innovation systems

- Innovations systems in Europe and China are very different – and require improved cross-cultural understanding and coordination
- Investment in research and innovation in the water sector has been made in China over the last few decades, knowledge on its outcome is very fragmented.
- Insufficient coordination mechanisms between EU and China to support joint research and innovation in water





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Project Consortium



Participant No *	Participant organisation name	Country
1 (Coordinator)	University of Natural Resources and Life Sciences Vienna (BOKU)	Austria
2	Technical University of Denmark (DTU)	Denmark
3	International Office for Water (OIEAU)	France
4	Italian National Institute for Environmental Protection and Research (ISPRA)	Italy
5	National Laboratory for Civil Engineering (LNEC)	Portugal
6	Stockholm International Water Institute (SIWI)	Sweden
7	W.S. Atkins International Limited (ATKINS)	United Kingdom
8	European Water Association (EWA)	Germany (pan-European)
9	European Union Chamber of Commerce in China (EUCCC)	China

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Cooperation Partners in China

- 1. Chinese Secretariat of the China Europe Water Platform**
- 2. Foreign Economic Cooperation Office of the Ministry of Environmental Protection**
- 3. Development Research Centre of the Ministry of Water Resources**
- 4. Chinese Academy of Environmental Planning**
- 5. Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences**
- 6. China Institute of Water Resources and Hydropower Research, Ministry of Water Resources**
- 7. Peking University, Center for Water Research**
- 8. Tongji University, College of Environmental Engineering and Science**
- 9. Wuhan University, School of Water Resources and Hydropower Engineering**
- 10. Institute of Hydroecology, Ministry of Water Resources & Chinese Academy of Sciences**
- 11. Institute of Soil and Water Conservation, Chinese Academy of Sciences**
- 12. Center for Chinese Agricultural Policy, Chinese Academy of Sciences**
- 13. University of the Chinese Academy of Sciences, Sino-Danish Center for Education and Research**



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Overview

The PIANO will help create a strategic cooperation partnership for water innovation between Europe and China

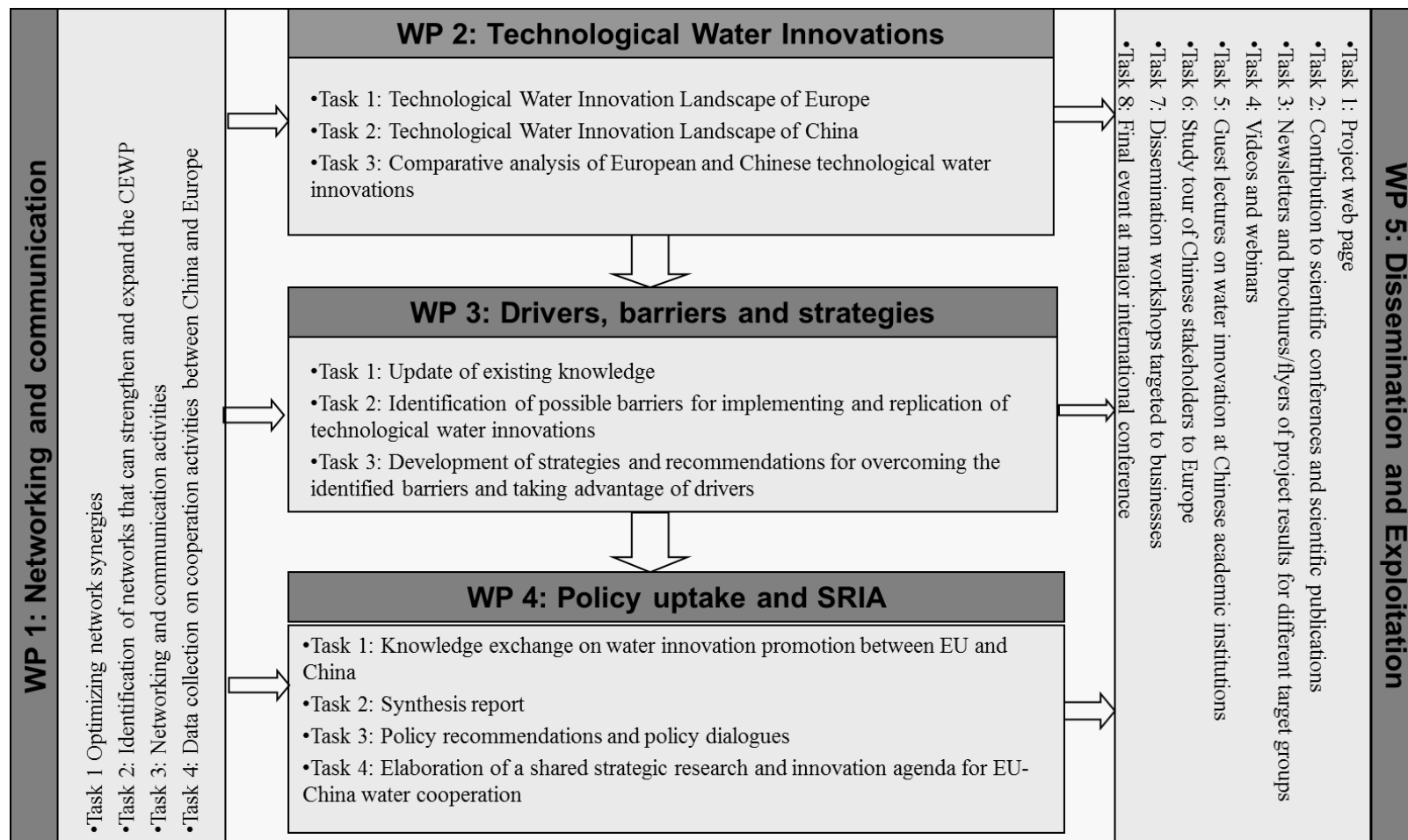
PIANO will:

- Create a comprehensive China Europe water research and innovation **network**.
- Analyse the **water innovation landscape** in Europe and China
- Identify opportunities for **joint development of water innovations**.
- Make **strategies to overcome obstacles and take advantage of drivers**, to facilitate creation of business opportunities in water sector.
- Promote **knowledge exchange and a policy dialogue** on water research and innovation
- Elaborate a **shared strategic research and innovation** agenda for EU-China water cooperation



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Structure



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Expected Impacts

1. Market Opportunities

Create market opportunities for European water innovations, outside Europe, and support the implementation of the EIP “Water” and its priority areas.

2: Strategic Cooperation on Research and Innovation

Support the implementation of the objectives set by the Strategic Forum for International Science and Technology Cooperation (SFISTC)

Objectives

1. Strengthen and expand the existing network of the China Europe Water Platform (CEWP) to cover all actors for water research and innovation relevant for China Europe water cooperation.
2. Identify European water innovations and areas for joint development of technological solutions that have a potential for implementation in China
3. Identify drivers and barriers and elaborate strategies to advance implementation and replication of technological water innovations
4. Promote knowledge exchange and policy dialogue to build an enabling environment for the uptake of technological water innovations with a great potential for implementation, further replication and market uptake in China
5. Disseminate and mainstream project results within China, Europe and worldwide
6. Consolidate a shared strategic research and innovation agenda (SRIA) between Europe and China in the water sector

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WP 1: Networking and Communications

PIANO will create and connect networks linking water business, to governance and civil society to create business and social opportunities for China Europe Water Cooperation.

It will link and build upon existing networks:

- **China Europe Water Platform**
- **Joint Programming Initiative Water**
- **Water supply and sanitation Technology Platform**
- **European Innovation Partnership on Water**
- **Previous and ongoing projects**
 - WaterRtoM (LIFE+)
 - WaterDiss2.0SPRING
 - DRAGON Star



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WP 1: Networking and Communications

Optimizing network synergies to strengthen and expand the CEWP

- Social network analysis will be performed to target key networks and actors to link with the CEWP and create a comprehensive China Europe water research and innovation network

Data collection on cooperation activities between China and Europe

- A database on past and ongoing cooperation projects in the water sector between EU and China will be developed

Networking and communication activities

- PIANO will organise regular networking and communication activities

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WP 1: Networking and Communications

PIANO will build, bolster, and broaden networks in with the CEWP network, such as:

- International Network of Basin Organisations (INBO)
- European Water Partnership (EWP)
- Partnerships, tools for promoting export in the water industry
- EURAQUA, European Network of Freshwater Research Organisations
- ERRIN, the network of EU Regions, Water Working Group
- ICLEI-Europe, the network of EU cities
- Aqua Publica Europea, which gathers EU public water utilities
- EUREAU, gathering EU water utilities, mostly private local triple-helix clusters, to involve local research centres and SMEs
- National water industry partnerships of EU Member states

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WP 1: Networking and Communications

PIANO will build, bolster, and broaden networks in with the CEWP network, such as the in-house water innovation centres at the:

- Ministry of Water Resources (MWR)
- Ministry of Environmental Protection (MEP)
- Ministry of Housing, Urban and Rural Development (MOHURD)
- Ministry of Science and Technology (MOST)
- The China Water Enterprise Confederation
- China Association of Environmental Protection Industry
- China Urban Water Association
- China Association of Urban Environmental Sanitation
- China Water Association
- China industrial water treatment network
- China City Water
- Chinese Mayors Forum

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WP 2: Technological Water Innovations

PIANO will identify and prioritize European technological water innovations that have potential for application in China and identify water challenges where neither Europe nor China have suitable technologies to offer and hence opportunities exist for joint development of technological solutions.



WP 2: Technological Water Innovations

Technological Water Innovation Landscapes of Europe and China

- Provide a list of technological water innovations, which will be prioritized based on their technology readiness level and their suitability for the water challenges in China identified by the China Europe Water Platform.
- An inventory of technological water innovations (TWI) from Europe and China will be produced in five focus areas:
 - Agricultural Water Management
 - Municipal (urban/village) water management
 - Industrial water management
 - River basin management
 - Water for energy

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WP 2: Technological Water Innovations

Comparative analysis of European and Chinese technological water innovations

- The EU and China technological water innovation inventories will then be compared against the China water challenges.

It will focus on cases where:

- innovative solutions are available in the EU, but not in the China;
- no innovative solutions available in neither the EU nor China.

Final Output:

- An inventory of up to 10 technological water innovations for each of the five thematic areas.



WP 3: Drivers, Barriers, and Strategies

PIANO will identify drivers and barriers and elaborate strategies to advance implementation and replication of technological water innovations.



WP 3: Drivers, Barriers and Strategies

Update of existing knowledge

- Desk studies
- Cases Studies of successful demonstrations recently applied in China

Identify barriers for implementing and replication of technological water innovations

- Institutional, social and economic (market)

Develop strategies and recommendations for overcoming the identified barriers and taking advantage of driver

- Policy instruments
- Integrated planning for technological water innovations
- Commercialisation strategies (business models)

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WP 4: Policy Uptake and SRIA

PIANO will promote knowledge exchange and policy dialogue to build an enabling environment for the uptake of technological water innovations



WP 4: Policy Uptake and SRIA

Knowledge exchange on water innovation systems in EU & China

- Map the water innovation systems in China and EU
- Opportunity analysis to align EU-China research & innovation support mechanisms

Policy reports, recommendations and dialogues

- Two water innovation policy dialogue events will be held
- Policy recommendations will be developed jointly with Chinese partners and in consultation with
- the China Europe Water Platform, targeted to innovation promotion and development centers in Chinese ministries

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WP 4: Policy Uptake and SRIA

Elaboration of a shared strategic research and innovation agenda for EU-China water cooperation

- Comparative analysis of existing research and innovation agendas with China
- Proposal of a shared research agenda: with focus on water innovations which have a potential for application in China.
- Proposal for shared innovation agenda that will help to create market opportunities in China, such as pilot and demonstration projects with selected water technologies.
- Finalization of a shared research and innovation agenda (SRIA), that includes review and input from EU and Chinese stakeholders.

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WP 5: Dissemination

PIANO will effectively disseminate the project results within China, Europe and worldwide to various target audiences through many channels, such as:

- **Web page**
- **Scientific conferences and publications**
- **Newsletters and brochures/flyers**
- **Videos and webinars**
- **Guest lectures on water innovation**
- **Study tour of Chinese stakeholders to Europe**
- **Dissemination workshops targeted to businesses community**
- **Event at major international conference**

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Thank you!

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