



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

强化中欧水资源合作机遇的政策、创新及网络 (PIANO)

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Presentation at the China Europe Water Platform Progress Review and Water Innovation Workshop

中欧水资源交流平台进程回顾及水创新项目报告

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SIWI

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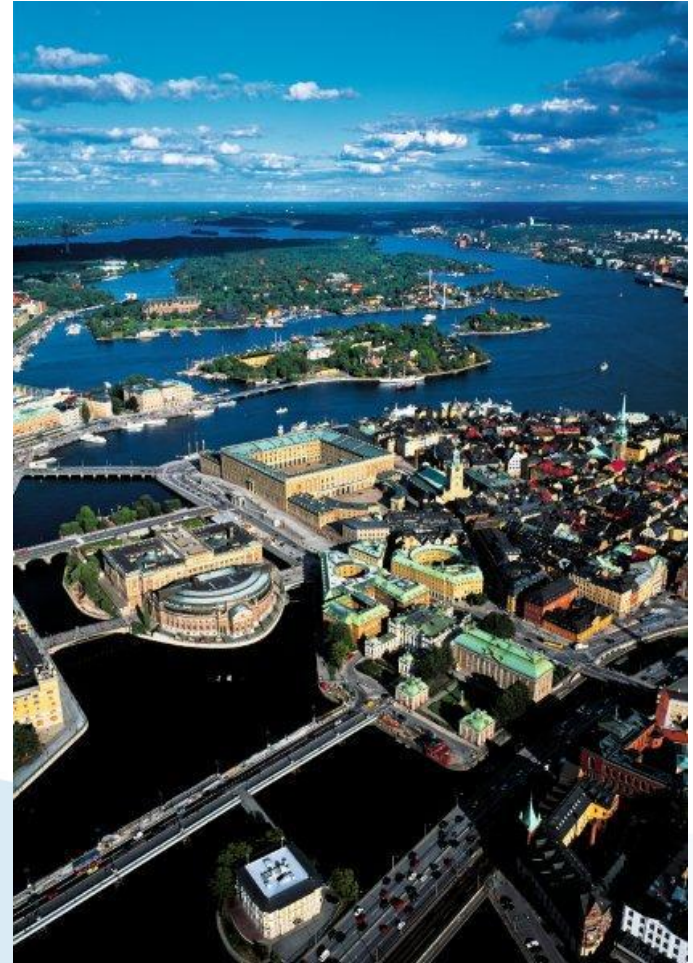
About SIWI

SIWI简介

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

斯德哥尔摩国际水资源管理研究所（SIWI）是致力于应对全球日益严重的水危机的政策研究机构。

- 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.
- 瑞典，斯德哥尔摩
- 65名工作人员+ 10位相关专家
- 非营利，政治中立
- 1991年成立
- 瑞典政府、斯德哥尔摩市及斯德哥尔摩水奖创始人共同资助
- 计划和活动经费还来自多边及双边捐助者和国际组织/机构



SIWI: Knowledge Services

SIWI: 知识服务

Knowledge Services



Water governance
水治理



Transboundary water management
跨国界水管理



Water and climate change
水和气候变化



Water, food and energy
水、食物和能源



Water and economics
水和经济学

Applied research • Advisory services • Capacity building

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

CEWP Work Area

中欧水资源交流平台

Urban Water Challenges

城市水资源挑战

Urban Water Challenges
Lead: Sweden / UK
城市水资源挑战
牵头国家：瑞典/英国

Co-Lead Partnership: Integrated Urban Water Management

China – Denmark
联席牵头合作伙伴：
城市水资源综合管理
中国-丹麦

Co-Lead Partnership: Urban Water Security and the Water Energy Food Nexus

China – Sweden – United Kingdom
联席牵头合作伙伴：
城市水安全与水、能源、粮食关系
中国-瑞典-英国

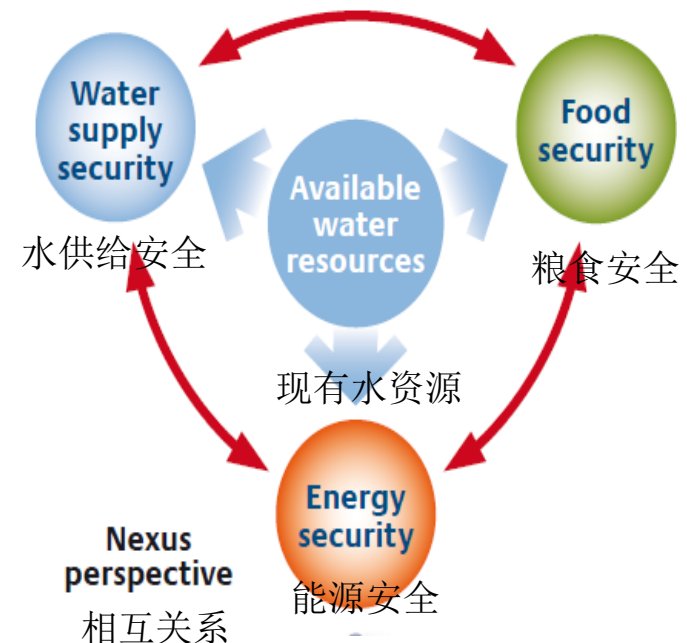
Ensuring Urban Water Security: Water-Energy-Food Nexus 保障城市水资源安全：水、能源、粮食关系

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
- 目标：
- 中国与欧洲政府就工艺与技术的现状进行交流
 - 改善城市地区生活、工业、农业和能源生产主要用水协同及冲突分析方法
 - 提高中国与欧盟水和能源政策的一致性

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
- 主要活动
- 太湖流域城市水安全计划
 - 中国能源行业水资源风险管理
 - 中国城市水务行业能源风险管理
 - 城市地区农业可持续、集约发展





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What is water innovation?

什么是水创新？

Innovation

创新

- “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”
- “推出新产品，推出显著改善的产品（商品或服务）或工艺，创新营销方式，创新商业组织方式、工作组织或外部关系等”

Water technologies

水技术

- “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.
- “能改善、优化、支持、组成、形成全新的处理技术、水利用技术、水生产技术，水管理技术、防洪及能源生产技术的产品和流程”

What is driving demand for water technological innovations?

什么在推动水资源技术创新？

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

世界经合组织生物多样性、水资源和生态系统工作组（2012）最近的一篇文章，提出建立“智能水系统”的主要驱动因素：

- **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**
- 水资源短缺和匮乏
- 人口增长和城市化
- 水、环境和公共卫生立法及标准
- 气候变化
- 增强水利设施效率
- 水务公司的效率及竞争力
- 水融资和收费

A window of opportunity for Europe and China

欧洲与中国发展机会概览

Strong demand from China for existing European water innovations.

- Large market and need in Chinese water sector: 60-100 billion EUR/year
- 中国对于欧洲现有水创新举措的强烈需求
- 中国水行业的巨大市场需求：600-1000亿欧元/年

There is a powerful foundation of innovation networks to build upon

创新网络基础良好

- 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.
- 欧盟及其成员国的水创新网络发展活跃，包括EIP、WssTP、JPI和 CEWP，有助中国取得更佳效果。

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.

欧盟与中国及其他国家新的合作机遇

- 中国成功的创新举措可进一步开拓国际市场
- 创新系统信息交换可带来双赢及战略合作

Environmental challenges drive demand for innovation...

环境挑战驱动创新

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

聚焦挑战相同，潜力不凡的各个领域

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

PIANO集团确定欧盟与中国专家小组提出的五个关键领域：

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

1. 农业水管理
2. 市政用水管理
3. 工业水管理
4. 河流流域管理
5. 能源用水

but institutional challenges can slow their uptake...

然而，体制障碍可能减缓进程.....

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

水资源技术创新在实施和推广中可能遇到阻碍，包括：

- Institutional barriers: Where we must better understand the institutional framework for implementing water innovation

- 体制障碍：为此，我们必须深入了解实现水资源创新的体制框架

- Social barriers: Understanding the users of innovations, and ensuring they take it forward.

- 社交障碍：了解创新用户，并确保用户将继续推进创新。

- Economic barriers, specifically in

- Procurement
- Standardization
- IPR Protection

- 经济障碍，尤其是

采购

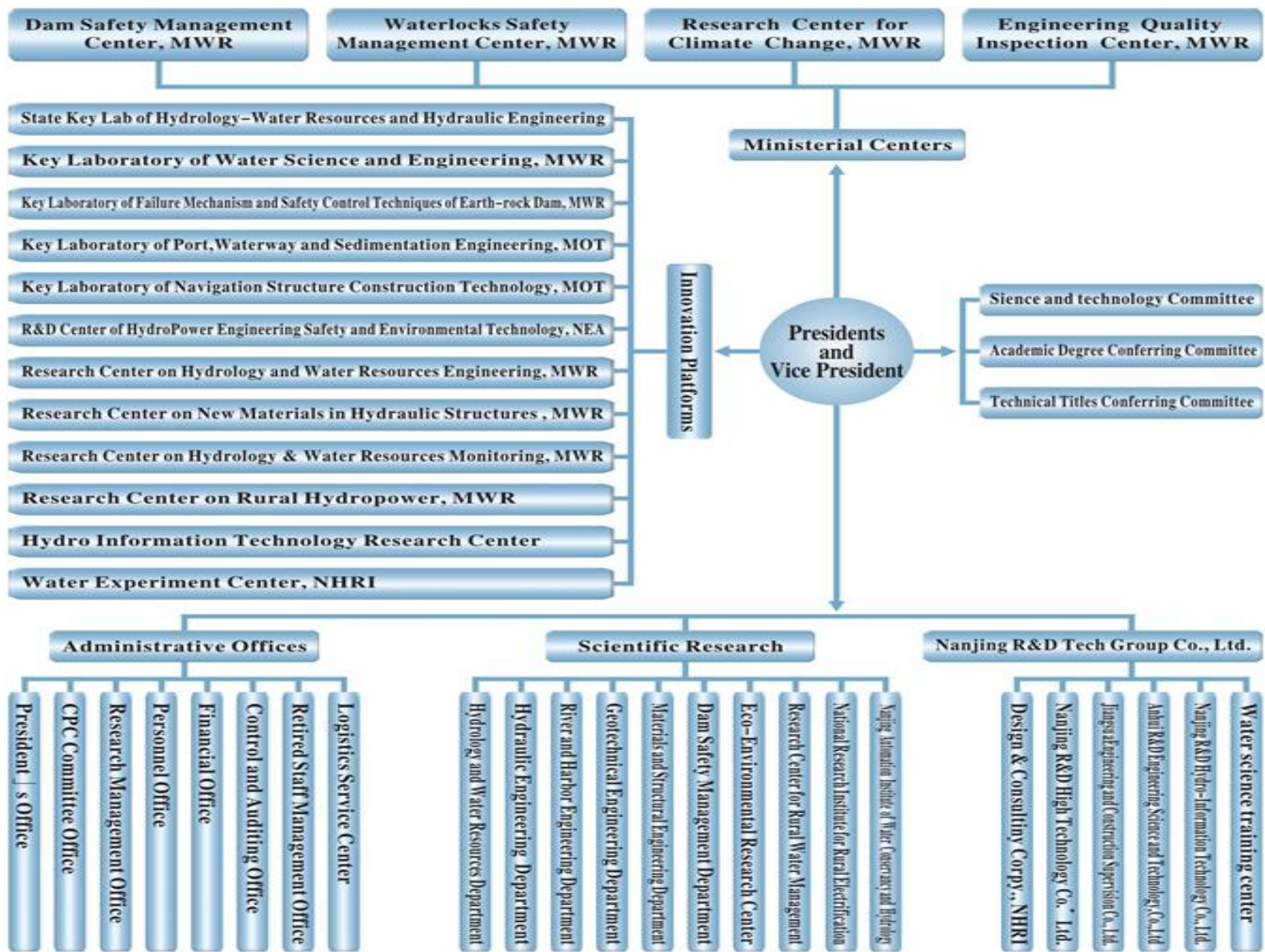
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...and require improved understanding and links between the innovation systems

.....同时需要加强创新系统间的理解与联系

- Innovations systems in Europe and China are very different – and require improved cross-cultural understanding and coordination
- 欧洲和中国的创新系统有很大不同， 需要提高跨文化理解和协调
- 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.
- 中国过去几十年已进行水务研究和创新投资， 知识成果松散零碎。
- Insufficient coordination mechanisms between EU and China to support joint research and innovation in water
- 欧盟与中国之间的协调机制不足以支持双方共同实现水资源研究与创新





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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

Cooperation Partners in China

在华合作伙伴

1. **Chinese Secretariat of the China Europe Water Platform** 中欧水资源平台中国秘书处
2. **Foreign Economic Cooperation Office of the Ministry of Environmental Protection**
环保部对外经济合作办公室
3. **Development Research Centre of the Ministry of Water Resources** 水利部发展研究中心
4. **Chinese Academy of Environmental Planning** 中国环境规划院
5. **Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences**
中国科学院生态环境研究中心
6. **China Institute of Water Resources and Hydropower Research, Ministry of Water Resources**
水利部中国科学院水工程生态研究所
7. **Peking University, Center for Water Research** 北京大学水资源研究中心
8. **Tongji University, College of Environmental Engineering and Science** 同济大学环境科学与工程学院
9. **Wuhan University, School of Water Resources and Hydropower Engineering** 武汉大学水利水电学院
10. **Institute of Hydroecology, Ministry of Water Resources & Chinese Academy of Sciences**
水利部及中国科学院水工程生态研究所
11. **Institute of Soil and Water Conservation, Chinese Academy of Sciences** 中国科学院水土保持研究所
12. **Center for Chinese Agricultural Policy, Chinese Academy of Sciences** 中国科学院农业政策研究中心
13. **University of the Chinese Academy of Sciences, Sino-Danish Center for Education and Research**
中国科学院大学中国-丹麦科研教育中心



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Overview回顾

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

PIANO将助力欧中水创新战略合作伙伴关系的建立

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

PIANO将:

全面打造中欧水资源研究和创新网络

分析欧洲与中国的水创新现状

确定水创新的共同发展机遇

制定战略以克服障碍，发挥驱动因素作用，以催化水行业新商机

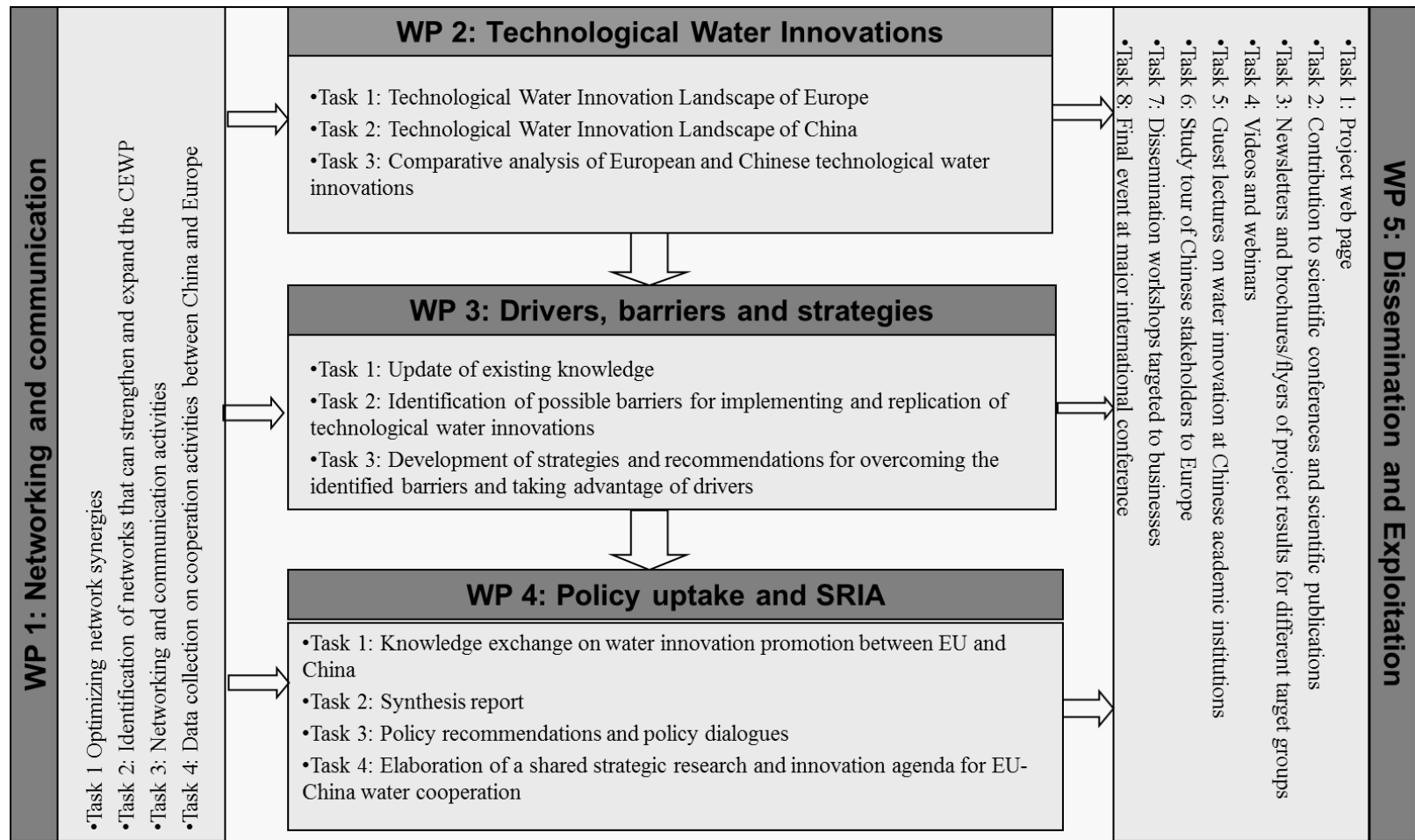
促进水资源研究与创新的知识交流和政策对话

就欧中水合作制定战略研究和创新共享议程



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Structure 结构



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1. Market Opportunities

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

1. 市场机会

为欧洲及其他国家的水创新创造市场及机会，支持水资源欧洲创新伙伴计划（EIP-Water）及其重点任务的实施。

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)

2. 研究创新战略合作

支持国际科技合作战略论坛（SFISTC）目标的实现。

Objectives 目标

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
-
1. 加强扩大中国欧洲水资源交流平台（CEWP）的现有网络，以覆盖所有中欧水领域研究创新合作的参与者。
 2. 确定在中国具备实施推广潜力的欧洲水创新举措及领域，以联合开发技术解决方案。
 3. PIANO将确定驱动因素和障碍并制定策略，以推进水资源技术创新的实施和推广。
 4. PIANO将促进知识交流和政策对话，以创造有利环境在中国传播具备实施推广及市场吸收潜力的水资源科技创新举措。
 5. 传播及推广中国、欧洲乃至世界各地的项目成果。
 6. 巩固欧洲和中国在水行业的共同战略研究和创新议程（SRIA）

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WP 1: Networking and Communications

WP1: 网络构建及互通

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.

PIANO将创建水业务网络，并将其与治理、公民社会联合，为中国欧洲水资源合作创造商业及社会发展机遇。

It will link and build upon existing networks:

它将连接并发展现有网络：

- **China Europe Water Platform** 中国欧洲水资源平台
- **Joint Programming Initiative Water** 水资源联合研究计划
- **Water supply and sanitation Technology Platform** 水供应和卫生技术平台
- **European Innovation Partnership on Water** 欧洲水资源创新伙伴计划
- **Previous and ongoing projects** 以前的和正在进行的项目
 - WaterRtoM (LIFE+)
 - WaterDiss2.0SPRING
 - DRAGON Star



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WP 1: Networking and Communications

WP1: 网络构建与互通

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

优化网络的协同效应，加强扩展CEWP

对核心网络和参与者进行社交网络分析，增强与CEWP的联系，并全面搭建中欧水研究和创新网络

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

收集中欧合作活动数据

开发欧盟和中国过去的和正在进行的合作项目的数据库

Networking and communication activities

- PIANO will organise regular networking and communication activities

搭建网络、举办互通活动

PIANO将定期组织网络建设和互通活动



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WP 1: Networking and Communications

WP1: 网络构建与互通

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

PIANO将建立、巩固和扩大与CEWP内的网络，如机构内部水创新中心：

- International Network of Basin Organisations (INBO) 流域组织国际网
- European Water Partnership (EWP) 欧洲水资源合作联盟
- Partnerships, tools for promoting export in the water industry 水行业伙伴关系及出口促进渠道
- EURAQUA, European Network of Freshwater Research Organisations 淡水研究组织欧洲网络
- ERRIN, the network of EU Regions, Water Working Group 欧洲区域研究创新网络
- ICLEI-Europe, the network of EU cities 欧洲城市网络
- Aqua Publica Europea, which gathers EU public water utilities 欧洲水务联合会
- EUREAU, gathering EU water utilities, mostly private local triple-helix clusters, to involve local research centres and SMEs 欧洲水务部门联合会，多为地方私营机构，包括研究中心与中小企业
- National water industry partnerships of EU Member states 欧盟成员国水行业合作伙伴关系

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WP 1: Networking and Communications

WP1: 网络构建与互通

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

PIANO将建立、巩固和扩大CEWP内的网络，如建立机构内水创新中心：

- Ministry of Water Resources (MWR) 水利部
- Ministry of Environmental Protection (MEP) 环保部
- Ministry of Housing, Urban and Rural Development (MOHURD)住房和城乡建设部
- Ministry of Science and Technology (MOST)科技部
- The China Water Enterprise Confederation 中国水利企业协会
- China Association of Environmental Protection Industry中国环境保护产业协会
- China Urban Water Association中国城镇供水协会
- China Association of Urban Environmental Sanitation城市环境卫生协会中国
- China Water Association 中国水协会
- China industrial water treatment network中国工业水处理网
- China City Water水世界—中国城镇水网
- Chinese Mayors Forum中国市长论坛

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WP 2: Technological Water Innovations

WP2: 水技术创新

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.

PIANO将确定并优先考虑在中国具备推广潜力的欧洲水创新举措，确定欧洲和中国都没有适合的技术应对的挑战，为双方共同探索技术解决方案创造机会。



WP 2: Technological Water Innovations

WP2: 技术性水创新

Technological Water Innovation Landscapes of Europe and China

欧洲和中国科技型水创新现状

- 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.
- 提供科技型水创新清单，根据技术成熟程度及对中国水资源挑战的适用性判定重要等级，由中国欧洲水资源平台确认通过。

- An inventory of technological water innovations (TWI) from Europe and China will be produced in five focus areas:

欧洲和中国水技术创新（TWI）的成果将来自五个重点领域：

- Agricultural Water Management 农业用水管理
- Municipal (urban/village) water management 市政（城市/农村）水管理
- Industrial water management 工业水管理
- River basin management 流域管理
- Water for energy 能源用水

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WP 2: Technological Water Innovations

WP2: 技术性水创新

Comparative analysis of European and Chinese technological water innovations

欧洲和中国的科技型水创新对比分析

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

根据中国的水资源挑战，对比欧盟和中国的科技型水创新成果：

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.

重点关注：

欧洲有但中国没有的创新解决方案；

欧盟和中国都没有的创新解决方案。

Final Output:

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

最终成果

五个主题领域，每个领域形成10条科技型水创新举措。

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WP 3: Drivers, Barriers and Strategies

WP3: 驱动因素、障碍及策略

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

PIANO将确定驱动因素和障碍，并制定策略以推进科技型水创新的实施和推广。



WP 3: Drivers, Barriers and Strategies

WP3: 驱动因素、障碍及策略

Update of existing knowledge

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

更新现有信息

案头研究

中国应用成功的近期示范案例研究

Identify barriers for implementing and replication of technological water innovations

- Institutional, social and economic (market)

找出实施和推广科技型水创新的障碍

体制、社会和经济（市场）

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

制定战略和建议以克服障碍，并发挥 驱动因素优势

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

政策工具

科技型水创新综合规划

商业化策略（商业模式）



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.

WP 4: Policy Uptake and SRIA

政策吸收及SRIA

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

PIANO将促进信息交流和政策对话，为科技型水创新的传播创造有利环境。



WP 4: Policy Uptake and SRIA

政策吸收及SRIA

Knowledge exchange on water innovation systems in EU & China

- Map the water innovation systems in China and EU

中欧水创新体系中信息交流

布局中欧水创新体系

- Opportunity analysis to align EU-China research & innovation support mechanisms

分析机会以共建欧中科研与创新支持机制

Policy reports, recommendations and dialogues

- Two water innovation policy dialogue events will be held

政策报告，建议和对话

举办水创新政策对话活动

- 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

- 与欧洲中国水资源平台协商，与中方合作伙伴合作，共同推出政策建议，有针对性地在中国各部委建立创新促进与发展中心。



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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.

拟定欧盟中国水合作共享战略研究创新议程

与中方比较分析现有的研究和创新议程

提出共同研究议程：重点关注水创新在中国的应用潜力。

提出共同创新议程，有助于创造市场及机会，如特定水技术的试点和示范项目。

最后确定共同研究创新议程（ **SRIA** ），包括审查和录入来自欧盟和中国的利益相关方。



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WP 5: Dissemination

WP5: 传播

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

PIANO将通过多种渠道在中国，欧洲和世界各地向目标受众有效传播项目成果：

- **Web page** 网页
- **Scientific conferences and publications** 学术会议及刊物
- **Newsletters and brochures/flyers** 通讯报道和宣传册/传单
- **Videos and webinars** 视频和网络研讨会
- **Guest lectures on water innovation** 水创新客座讲座
- **Study tour of Chinese stakeholders to Europe** 中国利益相关方游学欧洲
- **Dissemination workshops targeted to businesses community** 商界传播研讨会
- **Event at major international conference** 大型国际会议中的活动

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Thank you!

谢谢!

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