水利部海河水利委员会
HAIHE RIVER WATER CONSERVANCY COMMISSION, MWR

Haihe River Basin Governance Achievements & Progress of Sino-French River Basin Twinning Project

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1 海河流域的基本情况 The basic situation

- 海河流域位于东经112°～120°、北纬35°～43°之间，东临渤海，南界黄河，西靠云中、太岳山，北依蒙古高原。
- Location: 112° E–120° E, 35° N–43° N; bounded by the Bohai Sea (east), Yellow River (south), Yunzhong-Taiyue Mountains (west) and Inner Mongolia Plateau (north).
- 地跨京、津、冀、晋、豫、鲁、蒙、辽等8省(自治区、直辖市)，总面积32万km²。内有世界级城市群-京津冀城市群，政治、经济、文化地位显著。
- Scope & Status: Covers 8 provincial-level regions, 320,000 km²; hosts the Beijing-Tianjin-Hebei urban agglomeration, with crucial political, economic and cultural significance.

- 流域由滦河、海河、徒骇马颊河三个水系组成。永定河位于海河北系。地处温带半湿润、半干旱大陆性季风气候区。人均水资源量仅为214m³，是严重的资源性缺水地区。
- Hydrology & Climate: 3 water systems (Luanhe, Haihe, Tuhai-Majia); temperate semi-humid/semi-arid continental monsoon climate; severely water-scarce (214 m³ per capita). The climate is semi-humid and semi-arid continental monsoon.

2 海河流域治理成效 The governance achievements

- **规划引领，系统施治，水旱灾害防御体系日趋完善**
- **Guided by planning and governed systematically, the defending system against floods and droughts has been steadily improved**

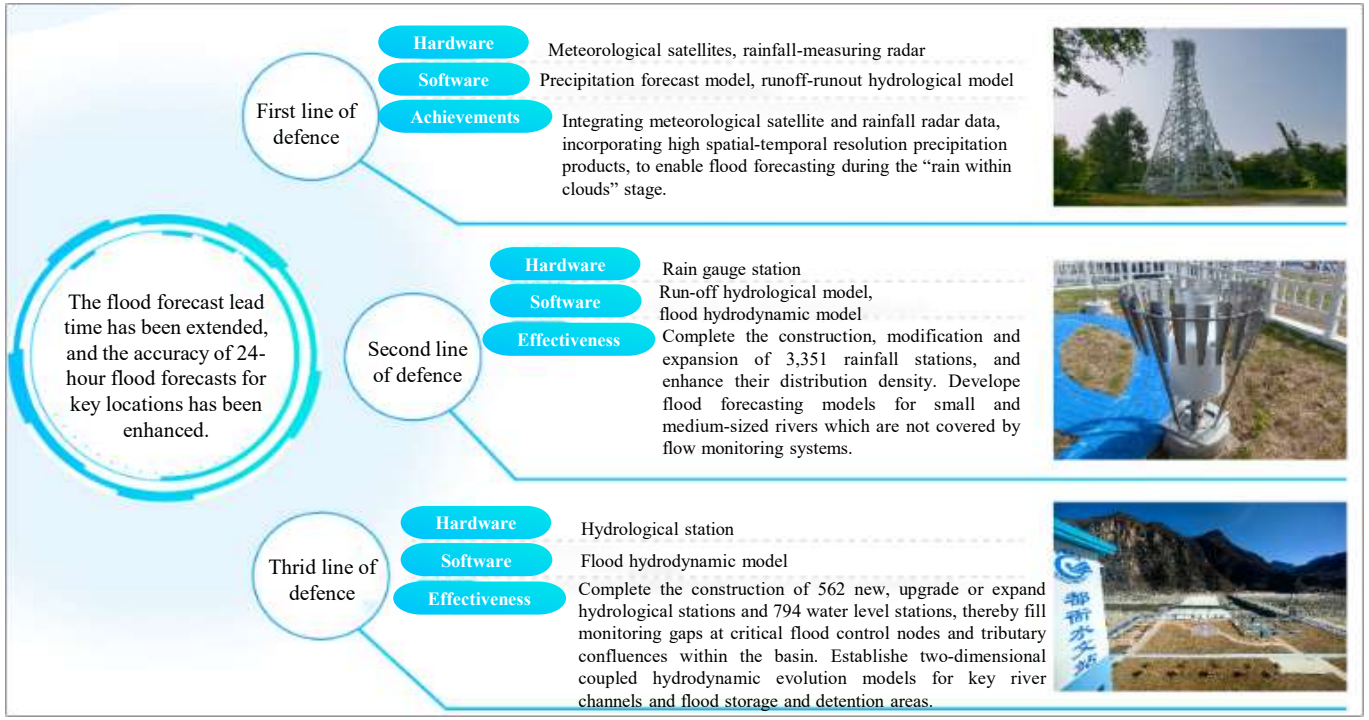
- 优化流域防洪顶层设计，科学编制《海河流域防洪规划》、永定河流域防洪规划等，明确“上蓄、中疏、下排、有效治洪”治理方针。
- Optimize the top-level flood control design, compile the Flood Control Plan of the Haihe River Basin and Yongding river relevant plans scientifically, and define the policy of "storage upstream, dredging in the middle, discharge downstream and effective flood control".

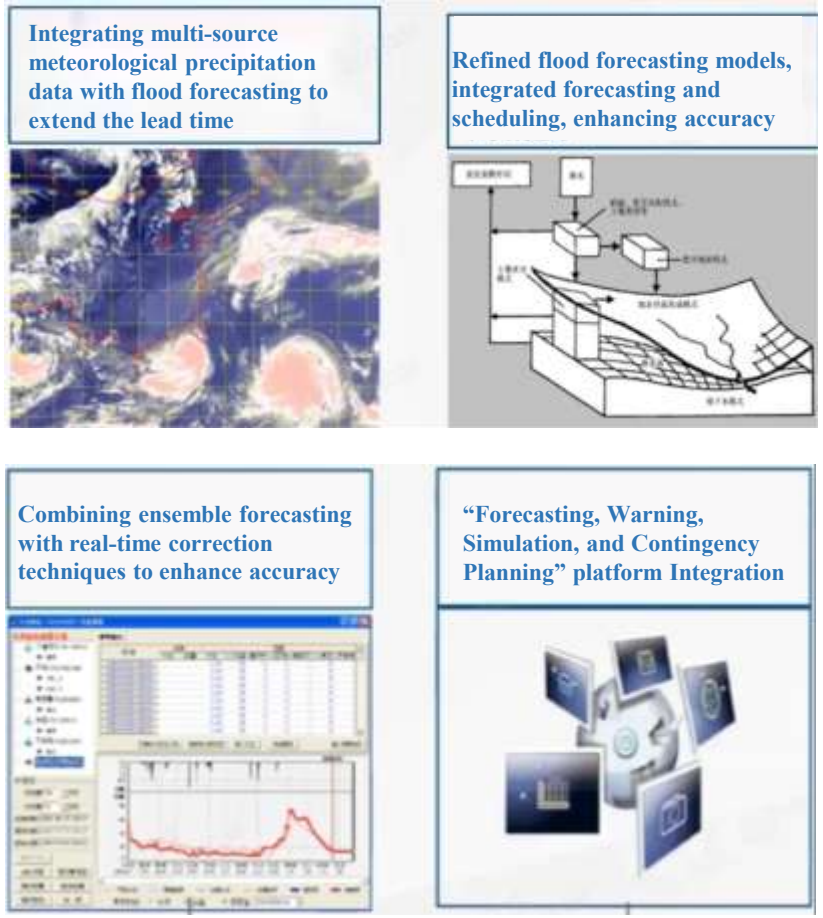
开挖永定新河、独流减河、子牙新河等多条入海通道，修建水库、堤防等工程，构建了流域“分区防守、分流入海”的防洪格局。形成了以水库、河道及堤防、蓄滞洪区为主要组成的流域防洪工程体系。成功防御了海河流域2021年历史罕见的夏秋连汛、2023年流域性特大洪水和2025年区域性大洪水。

Excavate and expand sea access channels, build reservoirs and dykes, forming a "regional defense and separate flow into the sea" flood control pattern and a flood control project system. This system successfully withstood major floods in the basin in 2021, 2023 and 2025.

2 海河流域治理成效 The governance achievements

- 聚焦延长洪水预见期与提高洪水预报精准度有效统一，积极构建雨水情监测预报“三道防线”，贯通"云雨水"、覆盖"天空地水工"的监测预报链条初步构建，强化防洪“四预”建设。
- Build a “three lines of defense” system for rainfall 、 flood monitoring and forecasting. Establish a preliminary monitoring and forecasting chain, integrating cloud、 rainfall and water data, covering sky, ground, water and hydraulic structure infrastructure. Strength the instruction of "forecasting, warning, simulation and contingency planning".





Hydrological Modernisation Application System for Rainfall and Water Level Monitoring and Forecasting

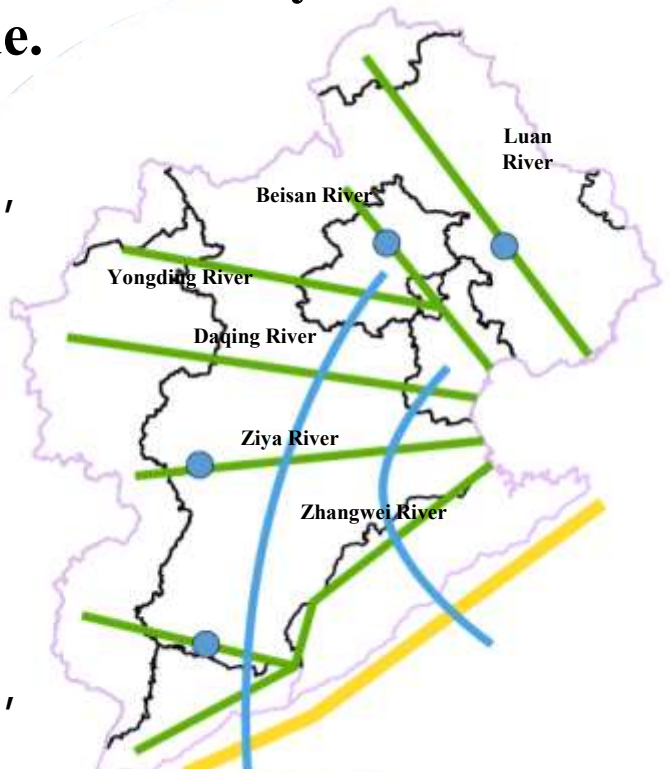
2 海河流域治理成效 The governance achievements

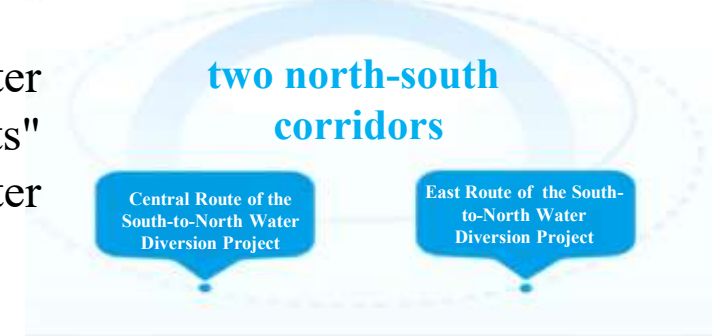
水网格局不断优化，水资源利用效率持续领跑

The water network layout has been continuously optimized, and the efficiency of water resource utilization has maintained its leading position nationwide.

- 构建了“二纵六横”的水网体系。依托流域自然水系、骨干引调水工程及重大节点工程，积极构建“纲、目、结”框架，流域"二纵六横"水网格局持续筑牢，水安全保障能力显著提升。
- A water network system comprising two north-south corridors and six east-west corridors has been constructed. Relying on the basin’s natural river systems, major water diversion projects and key node projects, the "framework, network and node" structure has been constructed. The water network pattern of "two vertical and six horizontal corridors" has been continuously consolidated, and the water security guarantee capacity has been significantly improved.

- 水资源集约节约能力提升。跨省河流水量分配方案、水资源调度方案印发实施，聚焦“四水四定”，用水总量控制在370亿m^3左右，万元GDP26.7立方米，在国内处于领先水平。
- The water conservation in the Haihe River Basin is enhanced . Trans-provincial water allocation and dispatching schemes are implemented. Under the "Four Determinants" framework, total water consumption is controlled at 3.7 billion m^3, with a GDP water intensity of 26.7 m^3/10k yuan, ranking among the best in China.





2 海河流域治理成效 The governance achievements

□ 坚持人水和谐、绿色发展，河湖生态环境全面修复

□ Uphold the harmony between humans and water and green development, and achieve the comprehensive recovery of the ecological environment of rivers and lakes.

- 积极构建上下游贯通一体的生态环境治理体系
- Actively establish an integrated ecological and environmental governance system that connects upstream and downstream sectors

河湖 Rivers and lakes

全面推进母亲河生态复苏
Comprehensively advance the ecological restoration of the Mother River

地下水 Groundwater

地下水超采综合治理行动
Groundwater Over-exploitation governance

水土保持 Soil and Water Conservation Management

清洁小流域、水土流失面积治理稳步推进
soil and water conservation management and protection

华北地下水超采量减少八成以上，面积减少2/3，流域"有河皆干，有水皆污"局面得到根本性改变。
Groundwater over-exploitation in North China has been reduced by over 80%.The situation of 'all rivers run dry and all water is polluted' has been fundamentally changed.

永定河实现全年全线有水
The Yongding River flows year-round along its entire course.

白洋淀生态水位达标率达100%（6.5-7m）
The ecological water level of Baiyangdian Lake has met the required standard.

漳河、京杭大运河全线贯通
The zhanghe river and Beijing-Hangzhou Grand Canal is now fully operational

清洁小流域建设美丽
Clean Small Watershed Developed

2 海河流域治理成效 The governance achievements

- **坚持人水和谐、绿色发展，河湖生态环境全面修复**
- **Uphold the harmony between humans and water and green development, and achieve the comprehensive recovery of the ecological environment of rivers and lakes.**

- 河湖复苏先行先试样本示范——永定河，综合治理与生态修复成效显著
- Pioneering Model for River and Lake Restoration: Yongding River, the achievements of Comprehensive Governance and Ecological Restoration is Remarkable

During the 1960s and 1970s, reduced upstream water inflows caused the river downstream of Lugou Bridge to cease flowing for 197 days.

In the 1980s, the riverbed downstream of the Marco Polo Bridge experienced 361 days of water drying up.

In the 1990s, the riverbed downstream of the Marco Polo Bridge experienced year-round water drying up..

The average water resource utilisation rate in mountainous areas reached as high as 80% (2010–2020).

The utilization rate of surface water resources reached 82.1%, significantly exceeding the international 40% threshold (2010–2020).

Yu River Shanxi Datong

Red-crowned Crane

Blackfin cod

Sickle-billed Crane

Chinese pufferfish

Sanggan River

Yang River

Yongding River

Yongdingxin River

Water Quality Improved

The proportion of river sections meeting Class III water quality standards or higher has risen to 95%; River sections with substandard water quality below Class V have been largely eliminated.

Biodiversity

Cumulative surveys have identified 51 species of fish and over 360 species of birds. Over the past 22 years, numerous sightings of nationally protected species of Class I and Class II status have been recorded.

Ecological flow satisfaction

The annual ecological water flow satisfaction rate at key control sections exceeded 100% throughout the year.By the end of 2021, the water storage volume at Guanting Reservoir reached 623 million cubic metres, surpassing the target storage level.

Vegetation of floodplains and riverbanks

The vegetation coverage area along the riparian zones and floodplains of key river sections totals 288.3 square kilometres, accounting for 28.7 per cent of the total area. This represents an increase of 152.3 square kilometres compared with 2016.

实施综合治理与生态修复前
The previous scene, before Implementing governance measures

实施综合治理与生态修复后
The current scene

2 海河流域治理成效 The governance achievements

经验做法 Practices and experiences

高位谋划，顶层设计 high-level planning and top-level design

永定河综合治理与生态修复总体方案，提出“流动的河、绿色的河、清洁的河、安全的河”目标
“Flowing river, green river, clean river, safe river” has been issued in the general Plan for the Comprehensive Governance and Ecological Restoration of the Yongding River .

永定河综合治理与生态修复总体方案 (2022年修订)，提出巩固治理成效。 Further consolidate the governance achievements of the Yongding River has been promoted in the issued general Plan (2022 Revised Edition).

2016 2021 2022 2023

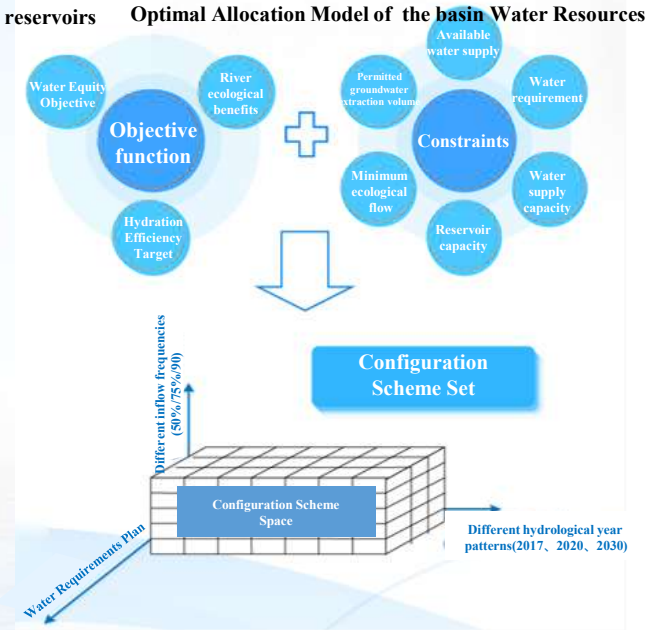
国家十四五规划和2035年远景目标纲要提出实施永定河综合治理。The National 14th Five-Year Plan and the Long-Range Objectives outline of the Year 2035 explicitly state that ‘comprehensive governance of the Yongding River shall be implemented’.

加快推进永定河流域治理管理现代化工作方案，提出打造全国流域治理管理现代化标杆. Accelera the modernization of the Yongding River governance Program, create benchmark

强化调度，优化配置 Strengthen scheduling and optimal allocation

四水统筹、五库联调Integrated management of the four water resources, coordinated operation of the five reservoirs

水资源优化配置模型 Optimal Allocation Model of the basin Water Resources



综合治理，生态修复 Comprehensive governance and Ecological restoration

健全机制，协同管理 Sound mechanism and Coordinate management

2 海河流域治理成效 The governance achievements

□ 坚持数智赋能、提升能力，数字孪生海河成效初显
□ Uphold digital intelligence and enhancing capabilities, the watershed digital twin has begun to construct

◆ 立足“需求牵引、应用至上、数字赋能、提升能力”，全链条推进数字孪生流域、数字孪生水网、数字孪生工程建设。实现经济社会数据、遥感影像、三维模型等80项，3TB数据共享。

- Advance the development of digital twin river basins, digital twin water networks, and digital twin engineering projects.
- Achieved sharing of 80 datasets, 3 terabytes, including economic and social data, remote sensing, and three-dimensional models.

◆ 永定河：基本建成覆盖全流域的水量、水质、水生态监测感知网，涵盖60类数据、280余个图层、2600余种属性信息的数字底板；融合防洪调度、生态水量调度、工程安全评价3大类21个专业模型、智能模型、可视化模型，构建多模型集成平台。

- A full-basin monitoring network for water quantity, quality and ecology has been basically built.
- A digital base with 60 data categories, over 280 layers and more than 2,600 attribute types has been basically created.
- A multi-model integrated platform is constructed by integrating 21 specialized, intelligent and visualization models in three fields: flood control scheduling, ecological water scheduling and engineering safety evaluation.

Multi-model integrated platform of Yongding River

3 海河流域未来规划与展望 The planning and outlook

- 构建现代化流域水旱灾害防御体系
- 构建安全韧性现代水网体系
- 构建协同贯通河湖保护治理体系
- 构建高效赋能数字孪生海河体系
- 构建高水平水资源节约集约利用体系
- 构建水治理体制机制法治保障体系

- Establish a modern flood and drought disaster prevention system for the river basin
- Establish a safe and resilient modern water network system
- Establish a coordinated and integrated river and lake protection and governance system
- Establish a highly efficient and empowered Digital Twin Haihe River system
- Establish a high-level water conservation and intensive utilization system
- Establish a legal guarantee system for the water governance system and mechanisms

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1 合作背景 Cooperation Background

- 2011年以来，海委与法国水资源国际署联合牵头实施了中法海河流域水资源综合管理项目，在中欧水资源交流平台下开展了流域管理领域的技术研讨与项目合作，建立了良好的合作基础。

Since 2011, the Haihe River Water Conservancy Commission (HWCC) and the International Office for Water (OiEau) have jointly implemented cooperation activities on integrated water resources management.These exchanges were developed under the framework of the China-Europe Water Platform (CEWP) and EU–China Water Cooperation programmes.

- 2024年9月，海委与法方召开了中法永定河流域综合治理技术研讨会，明确在中欧水资源交流平台及中欧水资源合作项目框架下，开展中法流域结对项目。

In September 2024, a Sino-French technical seminar on the Yongding River confirmed the launch of a dedicated River Basin Twinning Project, focusing on basin-level cooperation.

2 合作进展与成效 Cooperation Progress and Achievements

口 合作机制建设 Cooperation Mechanism Development

2025年，通过线上沟通、两次线下工作会议，中法双方商定了永定河流域与塞纳河流域结对合作谅解备忘录。
The year 2025 marked the official operational start of the Sino-French River Basin Twinning Project.Activities focused on:Aligning governance approaches at basin scale; Sharing technical methods and operational tools; Linking policy frameworks with concrete basin management practices

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● 合作领域：河湖生态复苏、数字孪生流域、水旱灾害防御等
合作方式：交流互访、实地考察、专题研讨等

- The cooperation is based on a basin-to-basin institutional approach, involving river basin authorities and operators on both sides.

- Main cooperation themes:
- River and lake ecological restoration
- Digital twin river basins
- Flood and drought risk management
- Cooperation modalities include expert exchanges, field visits and thematic technical workshops.

● 合作单位 Cooperation Organizations

Chinese Side: 水利部海河水利委员会 Haihe River Water Conservancy Commission
永定河流域投资有限公司 Yongding River Basin Investment Co., Ltd.
French Side: 塞纳河大湖组织 Seine Grands Lacs
水资源国际署 Office International de l'Eau

2 合作进展与成效 Cooperation Progress and Achievements

口 交流访问 Exchange Visits

2025年7月，由法国水资源国际署、塞纳河大湖组织4名专家组成的代表团访华，中法双方共同商讨了合作谅解备忘录及工作计划，开展了多场技术研讨与实地调研，正式开启了中法流域结对项目合作。

A French delegation composed of experts from OiEau and Seine Grands Lacs visited China in July 2025.The visit aimed to: Discuss and finalise the cooperation framework and workplan; Conduct technical exchanges on basin governance; Initiate joint field-based reflections. This visit officially launched the implementation phase of the twinning project.

2 合作进展与成效 Cooperation Progress and Achievements

□ 实地调研 Field Visits

2025年7月，代表团实地调研了官厅水库、永定河卢三段等，考察流域治理、生态修复及防灾减灾等项目进展。

Field visits in the Yongding River Basin. Field visits were organised at key sites, including:Guanting Reservoir, Yongding River (Lu-san section). The visits focused on: Integrated river basin management practices; Ecological restoration projects; Flood and disaster risk management measures

2 合作进展与成效 Cooperation Progress and Achievements

□ 技术研讨 Technical Exchanges

2025年7月，举办法国水资源管理体制及塞纳河大湖流域治理专题讲座，介绍了法国流域水资源管理体制及塞纳河大湖流域治理进展及成效，就法国水资源管理体制机制、流域规划编制、水信息系统建设等深入交流。

A thematic lecture on the French water governance system and the Seine Grands Lacs basin management model was organised in July 2025.Exchanges focused on:Institutional arrangements; Basin planning processes; Water information systems and decision-support tools

2025年7月，举办流域协同治理与生态修复技术研讨会，围绕流域协同治理、河流生态修复、基于自然的解决方案等议题开展技术研讨。

A thematic seminar was organised in July 2025 on:

Basin-scale coordinated governance

River ecological restoration,

Nature-Based Solutions (NBS) for water management

2 合作进展与成效 Cooperation Progress and Achievements

口 技术研讨 Technical Exchanges

- 2025年7月，举办数字孪生技术研讨会，围绕中欧流域数字孪生建设成果和数字孪生技术应用展开技术研讨，交流分享法国、芬兰数字孪生技术经验和永定河数字孪生流域建设经验。
- 2025年12月，举办中欧水资源合作流域结对——数字孪生水利技术线上研讨会，围绕数字孪生水利数据底板构建、卫星遥感与数据共享系统、人工智能在水利数字孪生中的应用、欧洲数字孪生流域建设及在防洪领域的应用等开展技术研讨。
- A dedicated technical seminar on digital twin river basins was held in July 2025. In December 2025, an online EU–China workshop was organised under the ECCoW framework.

Discussions addressed:

European and Chinese experiences in digital twin basin development

Applications for flood management and basin planning

Contributions from France, Finland and the Yongding River Basin

Digital twin data platforms

Satellite remote sensing and data sharing

Artificial intelligence applications

European experiences in flood management using digital twins

3 2026年合作计划 Cooperation Plan 2026

- 持续围绕河湖生态复苏、数字孪生流域、洪水防御等领域开展互访交流、技术研讨和实地调研。重点针对河湖生态复苏标准、关键技术及效果评估，数字孪生建设中数据管理、场景构建，流域洪水监测预报等议题联合举办技术研讨会。
- 共同参加国际重大水事活动，宣传推广中法流域结对项目合作成果。

- **2026: consolidation and structuring of cooperation**

- 2026 will focus on:
  - Consolidating cooperation mechanisms
  - Deepening technical work on priority themes
  - Enhancing visibility of the basin twinning approach at international level
- Activities will continue to combine:
  - Technical exchanges
  - Field-based cooperation
  - Participation in international water governance fora

汇报完毕

THANK YOU!