Netherlands



Photo credits: Gerhard van Roon/Kunst en Vliegwerk RP

Together towards a water secure tomorrow!

Thailand and the Netherlands

Foreword

On behalf of the Embassy of the Kingdom of the Netherlands in Thailand

Water plays an essential role in our daily lives, our economies and our future. Both Thailand and the Netherlands have a long history of living with water. As climate change brings new challenges, from flooding to water scarcity, our shared experience reminds us of the importance of working together. By exchanging knowledge, ideas and practical solutions, we can better prepare our countries and communities for the future.

Thailand and the Netherlands share a strong relationship that goes back more than four centuries. Water management has long been an important part of this partnership. In 2021, our countries strengthened their cooperation by signing a Memorandum of Understanding on Water Cooperation. Since then, governments, businesses, knowledge institutions and local communities have continued to work together, sharing expertise and exploring new opportunities.

The Partners for International Business (PIB) Greater Bangkok programme is a good example of this cooperation. It brings together Dutch companies with expertise in water management, flood protection, climate adaptation and innovative technologies. By combining this expertise with Thailand's local knowledge and experience, we can develop solutions that respond to real needs and benefit both countries.

I look forward to building on this strong partnership. I believe that open dialogue, shared knowledge and practical cooperation are key to addressing the water challenges we face. I am confident that this programme will continue to create valuable connections, new opportunities and lasting results.

Together we can work towards a water secure tomorrow!

ร่วมมือกัน เพื่อน้ำที่มั่นคง อนาคตที่มั่นใจ



Margriet Leemhuis
Ambassador of the Kingdom of the Netherlands to Thailand

Thailand and the Netherlands: a forward-looking partnership in water

The partnership between Thailand and the Netherlands in the water sector represents a significant step towards resilience, innovation, and sustainable development. Anchored in the Partners for International Business (PIB) Water programme, this collaboration unites Thailand's ambition to tackle pressing water challenges, such as flood resilience, water scarcity, and inclusive, adaptive, and climate-resilient water management, with the globally recognised expertise of the Dutch water sector.

The PIB programme offers Thailand a structured, long-term opportunity to engage with a consortium of Dutch companies operating under a single Netherlands platform, supported by the Dutch Government and Embassy. In addition, Thai stakeholders benefit from direct access to Dutch academic institutions and relevant public-sector organisations, fostering a holistic and impactful approach to shared water-related goals.



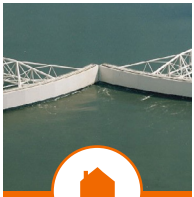
What is the PIB Water programme

The Partners for International Business (PIB) programme is an initiative of the Government of the Netherlands to support Dutch consortia in building long-term international partnerships in strategic markets. In Thailand, this collaboration takes shape through the PIB Water initiative: a public-private partnership bringing together Dutch companies, knowledge institutions and government partners to co-create practical solutions for Thailand's water and climate challenges.

The Netherlands brings a distinctive approach to water management. With much of the country situated below sea level and shaped by rivers, coasts and deltas, managing water has long been a matter of balancing competing interests, anticipating climate risks and working with, rather than against, natural systems. This experience has shaped a uniquely integrated approach: connecting different water demands with spatial planning and urban development, and bringing public and private stakeholders together around shared and sustainable solutions.



River Basin Management & Delta Masterplanning



Flood, Drought & Salinity Control Infrastructure



Smart & Sustainable Agriculture



Urban Resilience & Smart Water-management

Nature based Solutions

Policy, Financing and Institutional

Strengthening Thailand's water resilience together

The PIB Water programme brings Dutch experience together in a cluster of Dutch companies with expertise across the water project cycle, from river basin and coastal management, strategic planning, design and project management to innovative solutions on the ground. Rather than promoting isolated technologies or one-size-fits-all solutions, the programme focuses on understanding how interventions interact across the wider system and translating this into solutions that can be implemented, financed and maintained.

The PIB is therefore more than a platform for exchanging knowledge or showcasing Dutch solutions. It is a long-term partnership designed to connect Thai and Dutch experience, innovation and implementation capacity, and to develop solutions together that are locally relevant, resilient and scalable. Through knowledge exchanges, workshops, expert sessions, site visits and joint activities, the programme strengthens existing relationships and builds new ones.

The PIB operates across four key areas where Dutch experience is particularly relevant to Thailand. Across these areas, the Dutch contribution combines technical expertise with integrated design and implementation, Nature-based Solutions, multi-level stakeholder engagement, institutional development and innovative financing approaches.

1. River Basin Management & Delta Masterplanning
2. Flood, Drought & Salinity Control Infrastructure
3. Smart & Sustainable Agriculture
4. Urban Resilience & Smart Water Management

A shared vision for a water-secure future

At the heart of this partnership is a shared belief: that water challenges are best addressed through collaboration, integration, and innovation. By combining Dutch experience with Thailand's knowledge and ambitions, the PIB programme supports tangible, lasting progress on water-related goals, while fostering strong relationships between institutions, experts, and communities.

Together towards a water secure tomorrow!



Sustainable Development Goals

The Sustainable Development Goals (SDGs), also known as the Global Goals, were adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity. The Dutch cluster for Greater Bangkok programme as part of the Partners for International Business (PIB) contributes to the achievement of the following sustainable development goals:



SDG2 | Zero hunger:
By improving water availability and efficient irrigation through Dutch-Thai cooperation, this partnership enhances sustainable agriculture and food security in Thailand. Innovative water management supports crop resilience amid climate change, ensuring reliable harvests and better livelihoods for farmers, thus contributing directly to ending hunger and promoting sustainable food systems.



SDG6 | Clean water and sanitation:
The collaboration advances integrated water management to reduce flood risks, improve water quality, and increase water access in urban and rural areas. Through shared expertise and adaptive planning, the partnership ensures inclusive, sustainable water governance, securing safe, clean water for all and fostering climate-resilient water systems.



SDG9 | Industry, innovation, and infrastructure:
Bringing together Dutch innovation and Thai local knowledge, the partnership co-creates smart, climate-proof water infrastructure and technologies. This collaboration promotes resilient industries and adaptive urban planning, enabling sustainable economic growth and strengthening the capacity for infrastructure development through knowledge exchange and cutting-edge solutions.



SDG11 | Sustainable cities and communities:
By integrating flood protection, inclusive water infrastructure, and nature-based solutions, the partnership helps make Greater Bangkok and other cities safer, greener, and more resilient. It supports liveable urban environments that adapt to climate change while preserving cultural heritage, fostering inclusive communities that thrive alongside water.



SDG12 | Responsible consumption and production:
The partnership fosters sustainable water use through efficient irrigation, water reuse, and data-driven decision-making. It encourages circular approaches and responsible management of water resources, supporting Thailand's commitment to sustainable consumption patterns while reducing environmental impacts across water and related sectors.

River Basin Management & Delta Master Planning

The Chao Phraya River supports around half of Thailand's agricultural and economic activity, but is increasingly exposed to floods, droughts and other climate-related pressures. While substantial infrastructure investments are underway, rapid urbanisation, pollution and fragmented governance continue to challenge effective basin-wide management. There is scope to strengthen adaptive capacity, restore natural system functions and better align river morphology, coastal developments, infrastructure and land use.

The Netherlands has developed a strong track record in managing complex river and delta systems. Dutch Delta Master Planning combines long-term spatial and water planning with system understanding, engineering and ecological knowledge, scenario development and adaptive pathways. It provides a framework for managing uncertainty while aligning investments and interventions across scales, from the river basin and coastal areas to local projects.

For the Chao Phraya and the Gulf of Thailand, an integrated approach can help balance competing water demands, strengthen climate resilience and protect ecosystems, while creating a coherent long-term vision for the basin and delta.



Photo credits: Haskoning – Room for the River Nijmegen

Areas of action

1. Adaptive water management and Delta Planning
- Develop masterplans, adaptation pathways and long-term investment strategies
- Improve system understanding and functionality
- Strengthen climate analysis, scenarios and risk assessment

2. Create room for the river
- Integrate innovative and Nature-based Solutions to strengthen flood resilience, improve cost-efficiency and deliver wider co-benefits
- Pilot, test and scale innovative solutions

3. Sediment management, riverbank erosion and morphology
- Develop sustainable, nature-supported approaches to dredging, including sediment management strategies for large-scale dredging in the Chao Phraya
- Develop innovative and Nature-based Solutions for riverbank erosion

4. Institutional and governance frameworks
- Strengthen institutional arrangements for integrated river basin management
- Support multi-level stakeholder coordination and decision-making
- Develop frameworks that enable long-term, adaptive water management

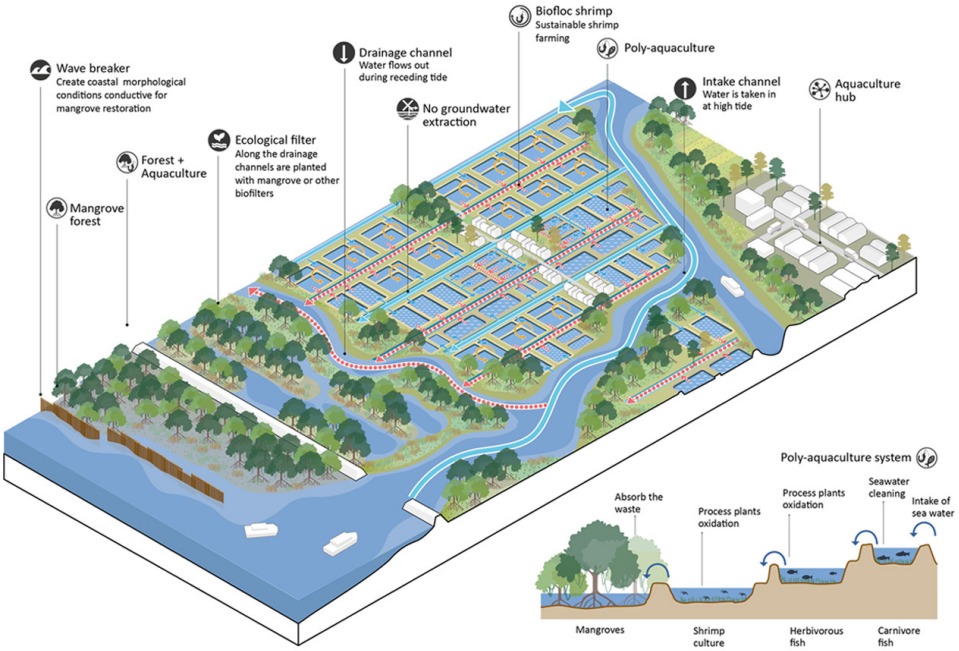


Photo credits: Defacto Urbanism – Mekong Delta Integrated Regional Plan

Flood, Drought & Salinity Control infrastructure

“Thailand’s low-lying coastal and riverine areas face increasing pressure from flooding, salinity intrusion and sea-level rise. During the dry season, reduced freshwater flows in the Chao Phraya can allow salt water to move further upstream, affecting drinking water supplies, agriculture, industry and freshwater ecosystems. Climate change and rising sea levels may further increase these risks.

The Netherlands has extensive experience in combining flood protection with the management of freshwater and saltwater systems. Dutch water management uses advanced monitoring, numerical modelling and carefully operated hydraulic structures to manage water levels and control salinity intrusion. At the same time, Dutch flood infrastructure is increasingly designed to serve multiple functions, combining protection from sea-level rise and storm surges with freshwater management, ecological connectivity and spatial development.

For Thailand, this creates opportunities for both local and large-scale interventions: from strategically located, flexible flood barriers and inflatable dams to multipurpose gates, sluices and barriers that manage storm surges, sea-level rise and salinity intrusion while maintaining freshwater availability.”



Photo credits: Study tour to the Netherlands – MaeslantbarrierNijmegen

Areas of action

1. Multipurpose hydraulic barriers
- Design and operation of gates, sluices and movable barriers
- Large-scale barriers and coastal protection against sea-level rise and storm surges
- Managing freshwater–saltwater transitions and limiting salinity intrusion
- Ecological connectivity, including fish passage and controlled transition between fresh and salt water

2. Local flood control infrastructure
- Innovative, low-impact flood protection solutions
- Integration with local drainage and water management systems

3. Freshwater and salinity management
- Numerical modelling of salinity intrusion under climate and sea-level scenarios
- Real-time support for water management and hydraulic operations
- Optimising freshwater reservoirs

4. Infrastructure as part of a system-wide solution
- Integrated flood, salinity and freshwater strategies
- Water availability and risk assessments
- Nature-based Solutions and adaptive land-use planning



Photo credits: Wavesave – deployment of the SLAMDAM

Smart & Sustainable Agriculture

Thailand has made important progress in modernising irrigation systems and improving water management, including infrastructure upgrades, real-time monitoring and more efficient water allocation. Yet increasing water scarcity, climate variability and competing demands for water create a need for more precise and flexible management at farm and irrigation-system level.

The Netherlands has extensive experience in making agriculture more productive and water-efficient under conditions of limited water availability. Dutch approaches combine precision irrigation, sensor-based monitoring, crop-specific water management and the coordinated use of surface water, groundwater and storage. Digital tools and data-driven decision-making help farmers and water managers match water supply to crop demand, while climate-smart and nature-based approaches strengthen resilience.

For Thailand, these approaches can help improve water productivity, reduce losses and make agricultural systems more resilient to drought and climate variability. The focus is on achieving more crop per drop while strengthening the wider water system.



Photo credits: GOPA – Smart Innovative Water Management Indonesia's lowlands

Areas of action

1. Irrigation efficiency
- Modernise field-level irrigation and water delivery systems
- Improve distribution efficiency and reduce water losses
- Optimise the combined use of surface water, groundwater and storage

2. Smart irrigation & decision support
- Satellite- and sensor-based irrigation monitoring
- Crop-specific irrigation scheduling and digital decision-support tools
- Support for conjunctive surface and groundwater management

3. Climate-smart agriculture & water productivity
- Water-efficient and diversified cropping systems
- Agroforestry, rainwater harvesting and nature-based approaches
- Saline agriculture where appropriate

4. Water governance & institutional strengthening
- Strengthen water user groups and irrigation management
- Improve water allocation and operational frameworks
- Support coordination between water and agricultural authorities



Photo credits: Dutch Watermanagement B.V. – Tilting weirs for precise water control

Urban Resilience & Smart Water Management

Thailand's rapidly growing cities and industrial areas face increasing pressure on water resources. Seasonal droughts, climate change and rising demand are intensifying competition between urban, industrial and agricultural users. In areas such as Chonburi, Rayong and Chachoengsao, high industrial water demand places additional pressure on already limited freshwater resources. At the same time, urban areas need to become more resilient to flooding, heat and water scarcity.

The Netherlands combines experience in urban water management with climate-resilient spatial design. Dutch approaches integrate blue-green infrastructure, water-sensitive urban design and Nature-based Solutions with smart water systems, efficient infrastructure and circular water use. This is complemented by a strong focus on water stewardship: helping industries and other large water users understand, reduce and manage their water footprint while contributing to the resilience of the wider water system.

For Thailand, this integrated approach can help cities and industrial areas become more water-secure, climate-resilient and resource-efficient. It connects urban design with water availability, infrastructure and digital management, while creating opportunities for public and private actors to contribute to sustainable water management.



Photo credits: Defacto Urbanism – Urban water storage, Germany

Areas of action

1. Urban water resilience & blue-green infrastructure
- Climate-resilient urban design and water-sensitive planning
- Blue-green infrastructure, Nature-based Solutions and urban water retention
- Reconnecting urban development with natural water systems

2. Industrial water stewardship
- Water stewardship strategies and corporate water-risk assessments
- Industrial water efficiency and circular water use
- Digital operational water management and asset optimisation

3. Innovative water technologies
- Energy-efficient and low-maintenance infrastructure
- High-efficiency pumping and treatment systems
- Modular and decentralised treatment solutions



Photo credits: Bosman water management – High capacity drainage pumps

Coordinator

The Netherlands-Thai Chamber of Commerce (NTCC), established in 1991, is a self-funded organisation representing Dutch business interests in Thailand. It facilitates trade, fosters partnerships, and promotes knowledge exchange between Dutch and Thai companies to strengthen bilateral commercial relations and cooperation.

PIB partners

Haskoning is an independent international consultancy specialising in engineering, design, and technology. A global leader in water, they address climate change and water scarcity, working with utilities, governments, and industries worldwide through a team of 6,800 experts across 25+ countries.

Delta Context is an independent Dutch consultancy specialising in resilient water management across deltas, coasts, and rivers. With over 30 years' expertise, it delivers integrated climate adaptation, flood risk management, and nature-based solutions, focusing on South and Southeast Asia, working with governments, development banks, and the private sector.

Defacto Urbanism is an award-winning Dutch landscape architecture and urban design firm specialising in climate adaptive, integrated urban planning. Combining research with innovative design, they deliver nature-based solutions and flood risk strategies globally, working closely with diverse stakeholders to create resilient, liveable cities and landscapes in rapidly urbanising regions.

GOPA Netherlands, part of wider GOPA Group, works in water management, agriculture and climate resilience, providing project support, applied research, capacity strengthening and policy development. Combining a European base with a long-established presence in South and Southeast Asia, we bridge the gap between policy and practice, supporting governments, institutions, and businesses to turn ambition into action and reform into reality.

Hydrosat

Hydrosat is a space and data analytics company developing an Earth observation constellation and software to provide unique high-resolution thermal infrared imagery. Their mission is to deliver valuable insights for environmental monitoring, food and water security, and other vital applications worldwide.

bosman watermanagement

Bosman Watermanagement founded in 1929, specialises in customised water management solutions, including pumping stations and wastewater systems. With nearly a century of expertise, Bosman has supported major projects in Thailand, delivering high-performance pumps and comprehensive services to enhance surface water and flood control infrastructure.

DUTCH WATER MANAGEMENT
control • store • protect

Dutch Watermanagement designs, manufactures and supplies reliable solutions for water control, flood management and water storage. We help manage excess water when it is abundant and preserve it when it is scarce. Built with corrosion-resistant materials, our solutions ensure reliable, low-maintenance and long-term operation, even under demanding conditions.

WAVESAVE

WaveSave B.V. is a Dutch leader in innovative flood protection and water management. Their SLAMDAM solution offers rapid deployment flood defence while capturing water as a resource, promoting sustainable, scalable technologies that enhance climate resilience, especially for vulnerable regions facing growing water challenges.

Associated partners

Deltares

IHE DELFT Institute for Water Education under the auspices of UNESCO

NWP | Netherlands Water Partnership

THE OCEAN CLEANUP

TU Delft Delft University of Technology

UNIVERSITY OF TWENTE. | ITC

WAGENINGEN UNIVERSITY & RESEARCH

Let’s team up for the future of water

By working together, we can create a water secure tomorrow!

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