



DELTARES

Independent research institute
for water and subsurface

Deltas, coastal regions and river basins are appealing areas to live and work. The effects of climate change – such as sea level rise, land subsidence and erratic rainfall patterns – also represent threats. New, broad-based, solutions will be needed to live in these areas safely and sustainably.

OUR MISSION

Throughout the world, Deltares works on innovative solutions and applications for people, environment and society. 'Enabling delta life' is our mission and ambition. We apply our top-level knowledge with the aim of delivering innovative and sustainable solutions for global issues relating to water and the subsurface. Our distinctive profile combines open source software, advanced experimental research facilities and highly qualified and knowledgeable experts.

OUR CORE BUSINESS KNOWLEDGE

Knowledge development and cooperation are important in our work. All our contracts and projects, whether financed privately or from strategic research budgets, contribute to the consolidation of our knowledge base. We also believe in openness and transparency, as is evident from the free availability of our software and models. It is our firm conviction that sharing knowledge and innovative insights worldwide enables delta life. Government and business can draw on our work to develop their own solutions. Other knowledge and research institutes can contribute their own research results, further extending the knowledge base.



AREAS OF

EXPERTISE



SUSTAINABLE
DEVELOPMENT GOALS

We address six social themes:

- > Flood Risk
- > Ecosystems and Environmental Quality
- > Water and Subsurface Resources
- > Delta Infrastructure
- > Adaptive Delta Planning
- > Enabling Technologies

The combination of specialist consultancy projects and applied research puts us in a unique position to address sustainability issues. In the framework of our corporate social responsibility, and to enhance our social impact, we focus on the Sustainable Development Goals by thinking globally and acting locally.



FLOOD RISK

Rising sea levels, population growth and economic activity are driving an increase in demand for flood risk forecasting and possible protective measures. Our research improves the precision of our assessments of dike strength, predictions of water levels, wave heights and erosion, and makes it possible to assess risks better. Our expertise covers the full scope of flood risk management: from risk calculations to practical support for making policy decisions. The result is seen in flood prevention measures that are more effective, more cost-efficient and socially acceptable.

Topics

- Healthy Water Systems Knowledge Impulse
- Resilient Ecosystems
- Nature-Based Solutions
- Integrated Modelling and Monitoring



ECOSYSTEMS AND ENVIRONMENTAL QUALITY

Pressure on ecosystems and the environment is increasing as the population and the economy grow. At the same time, governments are becoming more ambitious in terms of improving soil and water quality, and there is increasing demand for ecosystem services. Deltares develops knowledge about the quality of soil and water systems, and makes that knowledge available through model and information systems for policymakers, managers and users. The system knowledge is also used for sustainable natural solutions as an alternative to the traditional hard engineering approach, for technological innovations to improve the protection of water and soil systems, and for the sustainable exploitation of ecosystem services.

Topics

- Flood Risk Strategies
- Enabling Early Warning
- Quantifying Flood Hazards and Impacts
- Future-proof Dikes





WATER AND SUBSURFACE RESOURCES

The availability and use of water and soil resources will change in the decades to come. Deltares is mapping out the present and future availability of water to make it possible to plan for shortages and excesses. New, efficient concepts for producing renewable energy using water and the subsurface will help to achieve climate change objectives. The subsurface is also under increasing pressure due to groundwater extraction, energy production and storage, and the extraction of minerals and other resources. Deltares combines information about the availability of natural resources in the subsurface to create building blocks for more efficient and responsible practices.

Topics

- Systems for Water Security
- Subsurface Resources in a Circular Economy
- Solutions for Impacted Environment



Topics

- Future-Proof Coastal Infrastructure and Offshore Renewable Energy
- Infrastructure for Waterborne Transport
- Robust and Reliable Urban Infrastructure
- Infrastructure for Water and Energy



DELTA INFRASTRUCTURE

In delta areas, infrastructure is built on land and in the water. Building on or in soft delta soil is not without risks. The same applies to structures at sea and in rivers. Deltares research focuses on reducing costs and risks when building in coastal regions, on soft ground, and at sea. Innovative solutions are designed to ensure that the infrastructure in place can cope with climate change, where possible by using natural processes, and extreme events.

Topics

- Climate Adaptation
- Delta Governance
- Resilient Cities



ENABLING TECHNOLOGIES

The Enabling Technologies theme looks at emerging technologies that are related to the combination of monitoring, big data and software tools. The goal is to identify and assess new technologies and to stimulate integration in innovative applications.



Topics

- Big data
- Data Science
- Artificial Intelligence
- Robotics
- Fibre Optics
- Software Innovations



ADAPTIVE DELTA PLANNING

The main aim of Adaptive Delta Planning is to combine our technical knowledge about water, the subsurface and infrastructure with governance and policymaking in order to solve problems in highly complex and dynamic delta systems. The primary focus is therefore on developing and testing concepts, methods and instruments to achieve this goal.

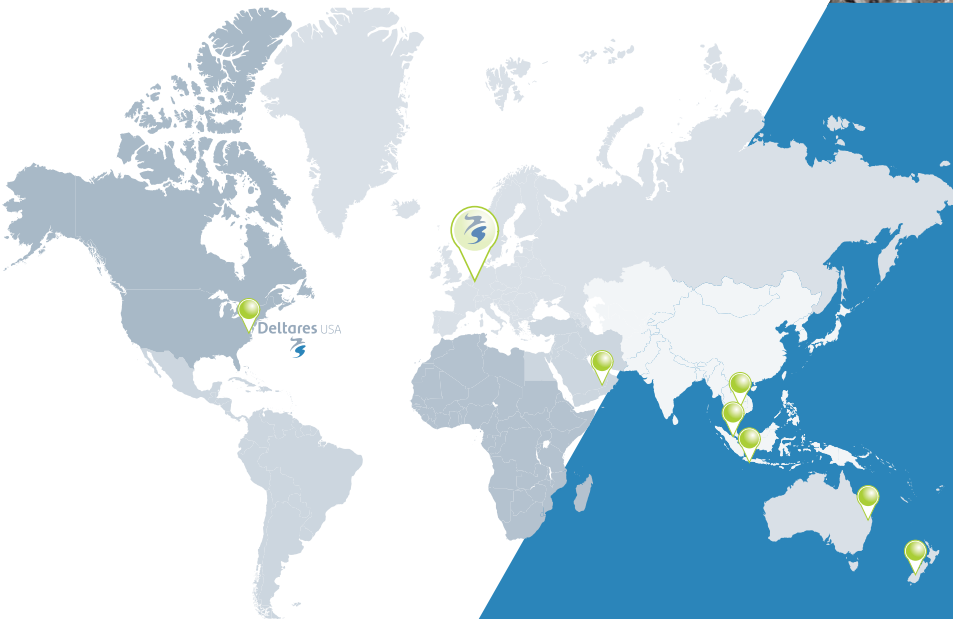
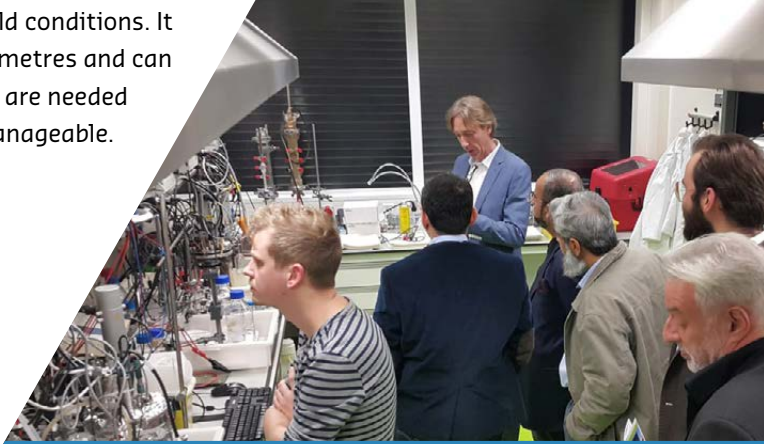


OUR RESEARCH FACILITIES

Deltares has a wide range of facilities: from laboratories and field studies to test arrays and simulators. We study the quality of water and the morphology of rivers, lakes and the coast, the strength of soil and the subsurface, and the effects of waves and currents on physical structures. Various physical processes often meet in a single experiment. These unique combined facilities allow Deltares to conduct small- and large-scale integrated studies in these fields on your behalf.

The Delta Flume is a versatile facility that can be indispensable in many projects to test coastal, harbour and offshore structures under real-world conditions. It has an overall length of almost 300 metres with a depth of 9.5 metres and can be used to devise and study the new, innovative measures that are needed to live in safety and to keep our feet dry while keeping costs manageable.

“We share knowledge to boost innovation”



ABOUT US

Deltares is a leading, not-for-profit, independent and applied research and specialist consultancy institute. We operate internationally, incorporating advanced expertise on water, subsurface, the environment and infrastructure. We work closely with government authorities, business, other research institutes and universities at home and abroad.

INTERNATIONAL ADVISORY BOARD

Deltares has an International Advisory Board (IAB) that advises on the international context in which it operates and draws attention to new trends and developments. It reviews the Deltares Research Programme with the aim of raising the social impact of our work on the international stage. The chair is the Dutch Water Envoy Henk Ovink.

OUR OFFICES

Deltares, which is based in Delft and Utrecht, the Netherlands, employs over 800 people who represent some 40 nationalities. We have branch and project offices in Australia, Indonesia, New Zealand, the Philippines, Singapore, the United Arab Emirates and Vietnam. In the USA Deltares also has an affiliated organization. The international offices play an important role in establishing and sustaining the international research and project contacts of Deltares: some form of local presence is often required to provide continuity and maintain efficiency.

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