

Deltares 2.0

Strategic plan 2012 - 2015



Research institute in the field of water, subsurface and infrastructure

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February 2012

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Deltares 2.0

Deltares is on course – both literally and metaphorically. After four years, the internal processes are working well. There is good cooperation with governments, businesses and research institutes at home and abroad. Our knowledge base has strengthened, and ‘we’ are participating in high-profile national and international projects and programmes. Within The Netherlands, Deltares is recognised as ‘the’ independent research institute in the field of water, the subsurface and infrastructure. Reasons enough for us to feel proud, but our ambitions go beyond this. Deltares aims to be a world player by 2015, to be recognised and acknowledged outside our own national borders as an authoritative research institute in our field of work. We are known and valued by many abroad, but we are striving for more: we want to be at the top. This is why we are continuing full speed ahead, in our chosen direction, introducing changes in emphasis along the way. By 2015 for instance, we aim to have one third of our turnover generated abroad. We are actively expanding our circle of customers throughout the world, in order to extend and strengthen our knowledge base. In this second strategic plan, aptly entitled ‘Deltares 2.0’, you can read how we aim to achieve this and our other aspirations between 2012 and 2015.

This plan has been brought about, through the contributions of many people, inside and outside Deltares. We have consulted more than fifty interested parties in government, businesses and research institutes, in The Netherlands and abroad. Various elements have been used to create this plan, such as an external scenario- and environmental analysis, new knowledge and information strategies and internal discussion sessions. A great deal of thought, energy and enthusiasm has gone into it, which has made this not only the strategic plan of Deltares, but above all, our strategic plan. Deltares employees as well as its management, are looking towards the future, full of confidence and ambition.

On behalf of the Board of Directors,

Harry Baayen
Managing Director



1. Strategic Plan

Deltares is a young research organisation with a long history. Deltares was established in 2008, with the merger of WL| Delft Hydraulics, GeoDelft, and parts of TNO and Rijkswaterstaat (Ministry of Transport, Public Works, and Water Management). This makes Deltares a young organisation, built from components with a respectable age and reputation. Deltares is active in the field of water, the subsurface, and infrastructure. These are specialist fields in which the Dutch have accumulated a great deal of quality know-how and experience, over the centuries. With regard to water management, the Dutch delta is one of the best documented, most studied and most efficiently planned areas in the world. Throughout the world, more and more people are settling in delta areas, coastal regions, and river areas because of good accessibility and the abundance of fertile land, minerals and fresh water. The economic potential of these areas is enormous, but they are also vulnerable. Accelerating sea level rise, extreme precipitation, extreme river floods, land subsidence, and growing pressure on space and the environment, emphasise this vulnerability. Traditional solutions no longer suffice - managing these densely populated areas has become too complex. New technologies and innovative solutions are needed to ensure the future security of people, economy and environment. This presents new opportunities for Deltares, for The Netherlands, and for the Dutch business sector.

2008-2011

Over the last four years, Deltares has demonstrated its value to society, via the activities in which it excels: applying and broadening research in concrete projects related to water, the subsurface and infrastructure. We have achieved this via the five roles of Deltares as laid down in the previous strategic plan: innovator, information centre, knowledge broker, specialist consultant and explorer. Deltares has achieved the ambitions described in the previous strategic plan. Moreover, Deltares is now established as a 'brand' and is recognised in The Netherlands as the research institute for


water and underground construction. The merger of the four organisations is a success: the bodies of knowledge on 'wet' and 'dry' infrastructures have been integrated. During this process, several activities have been transferred to the marketplace. The role and tasks of Deltares have been defined in a cabinet resolution¹ based on the findings of the Wijffels Committee and have been laid down in statutes. The way in which Deltares plays its role has been agreed with other research institutes, as well as with government bodies, funding agencies and the private sector. This has been ratified in a number of framework agreements and cooperation agreements. Together with the Council for Delta Research and the Delta Technology Steering Committee, a clear, demand-driven research programme has been established, subdivided into five themes for matters related to water, the subsurface and infrastructure. In Deltares' first four years, the volume of projects has increased slightly mainly due to projects carried out for the Dutch government. International turnover and turnover in the private sector has remained unchanged. Since the merger, Deltares has become more efficient, is ISO-certified and has achieved good results in audits on customer satisfaction and knowledge position. In short, the past strategy period can be considered successful.

Deltares 2.0

Deltares wants to continue the ascending line of the past four years and expand further. From its position as a *national* top institute, Deltares aims to become *internationally* recognised and acknowledged as an independent top institute for developing and applying knowledge on water, the subsurface and infrastructure in deltas, throughout the world. Deltares has already built up an international reputation as a leading research institute that delivers the highest quality. But we want to reach the world top. Knowledge is the core business of Deltares. We see opportunities to strengthen our knowledge base in The Netherlands, but also further afield. To belong to the best in the world, it is vital to participate in projects and research programmes worldwide, and to work closely with international top researchers and consultants. Deltares is therefore focusing more on activities abroad. International turnover is growing rapidly towards a third of the total and we aim to diversify our research and development funding, in the meantime spreading our focus to more regions and types of customers.

By 2015, Deltares will be the most authoritative supplier of knowledge in the sector, with a sound knowledge base and effectively converting the knowledge gained from our own work, from academic

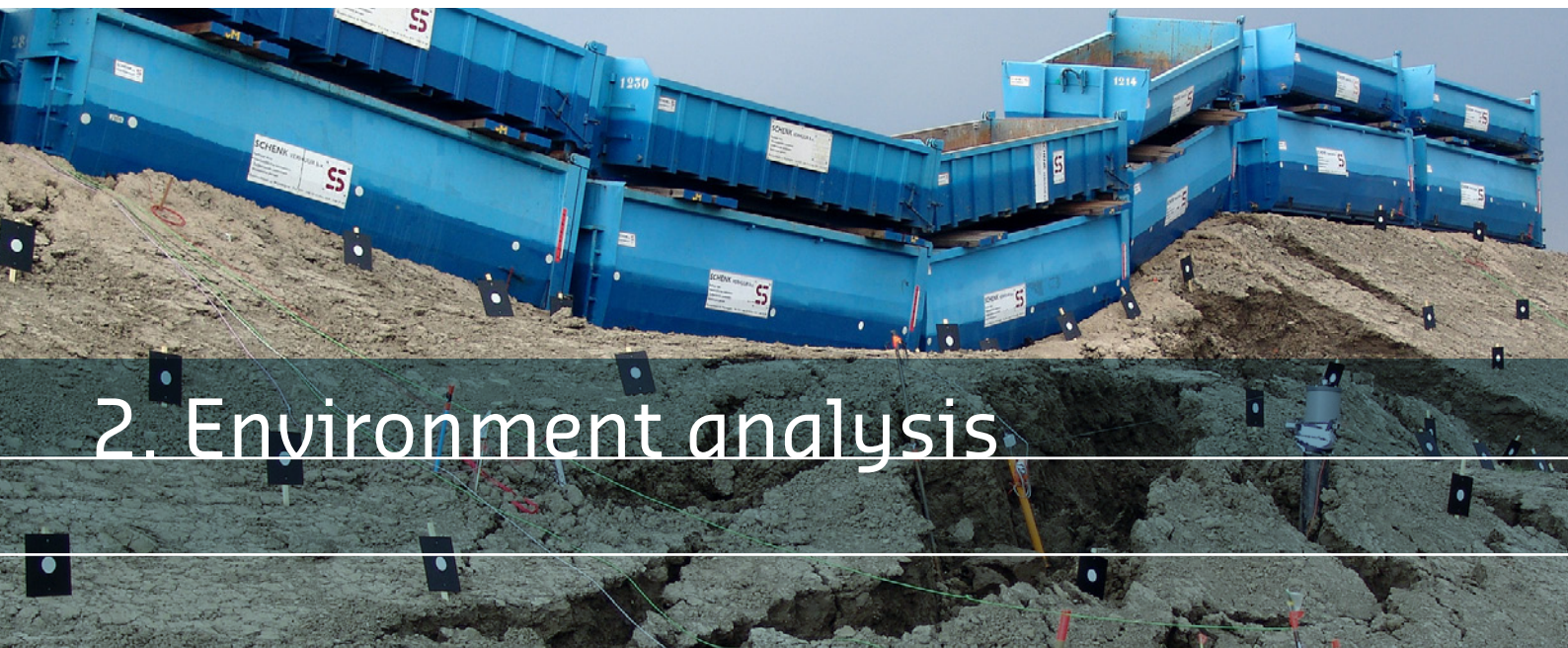
¹ Tweede Kamer der Staten-Generaal, Vergaderjaar 2005-2006, Kamerstuk 27625, nr. 63



research and from other institutes into clever innovations, solutions and applications that are of value for society. Deltares also converts its knowledge into income for trade and industry. The Dutch business sector (export opportunities) and government authorities (problem solving, cost savings) profit from this. Deltares is open and transparent: our basic principle is *dare to share*. This approach has already become manifest in our open source software and models policy. *Open source* works: that is Deltares' firm conviction. By working closely and transparently with relevant international partners in the development and application of knowledge, Deltares will be smart, successful and stable in 2015.

Outline

The following section contains an analysis of the Deltares environment. It describes the most important external trends and factors relevant to our strategic choices. The third section describes the mission. Sections four and five are written from the perspective of the customer and concern Themes and Market, respectively. The internal perspective can be found in sections six (Expertise) and seven (Organisation). Section eight outlines the position of Deltares in 2015.



2. Environment analysis

The world is constantly in motion. Changes follow each other at high speed. Predictions about the future are surrounded by great uncertainty. The demands that society will place on Deltares in the coming years will be determined by the following socio-economic and infrastructural developments: increasing pressure on space that is in short supply; the availability of fresh water and soil resources; (anticipated) climate change and sea level rise; the opportunities offered by new knowledge and technology in all these fields. This section describes the most important trends and factors that will direct the strategy of Deltares. Five developments are described briefly: 1) global trends, 2) technological developments, 3) changes within the Dutch government, 4) developments in the Dutch private sector, and 5) investment trends in knowledge and research.

2.1 Global trends

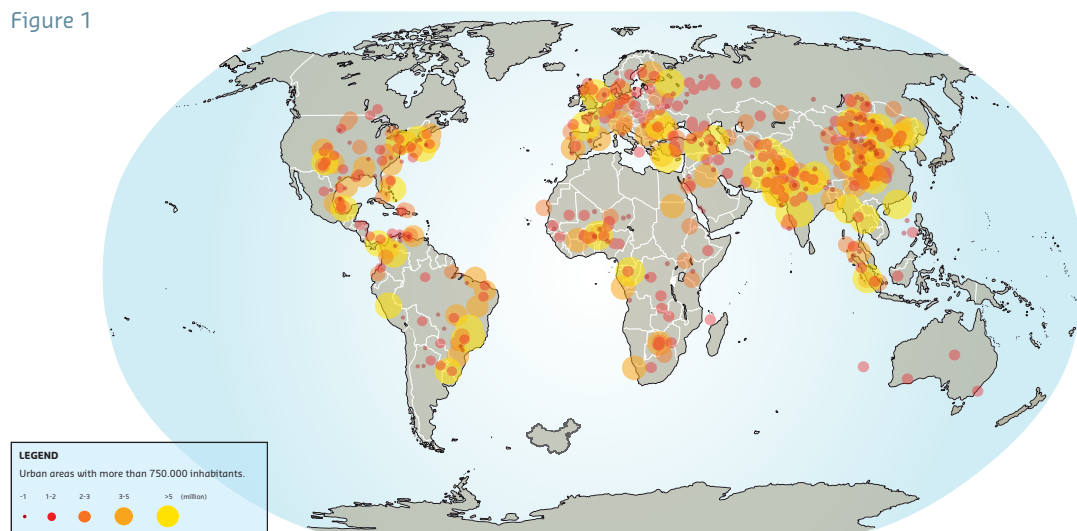
The following global trends are of importance for Deltares.

- *Growing world population, scarcity of natural resources and increasing pressure on ecosystems*
The growth of the world's population leads to an increased demand for water, raw materials, energy and space. In order to make sustainable choices, research is necessary on the possibilities offered by hydrological and geological systems. There is a greater need for new technology and innovative ideas for organising the physical infrastructure. This includes the purification and recycling of water, the extraction of raw materials from waste (water), the re-use of energy and the extraction of energy from alternative sources. There is a growing demand for research related to combating water shortages, water- and soil pollution, and the decline in biodiversity. All these developments offer opportunities for Deltares, with its unique know-how in the field of resource efficiency.

- *Excessive urbanisation in delta areas*

A large part of the growing world population lives in deltas and coastal regions. The pull towards these areas will continue in the future: in 2050, it is expected that 80% of the world's population will live in these regions (see figure 1). The ensuing shortage of space, calls for greater knowledge about the use of underground space in urban areas, seaward expansion (land reclamation), and also for better spatial planning, with multiple usage of space in river catchments, deltas and coastal regions. Deltares has the innovative know-how to meet this type of knowledge demand.

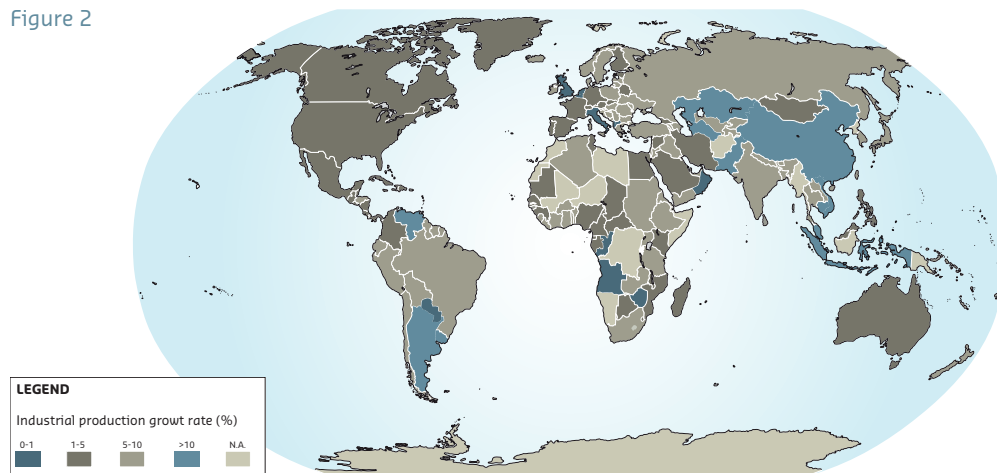
Figure 1



- *Shift of the economic centre of gravity to Asia, Africa, South America and private sector*

The world's economic centre of gravity and economic growth are shifting to countries in Asia, Africa and South America (see figure 2). In urbanised areas in these regions, there is an increasing need for knowledge about water, the subsurface and infrastructure. Deltares strives to collaborate with local research organisations and is therefore an interesting research partner for governments and businesses in the emerging countries. Another trend in a number of countries is the shift in responsibility for large-scale vital infrastructure for safety, transport, and public utilities, from the public to the private sector. Governments mainly supervise and regulate. The business sector carries the responsibility and risks. This results in commercialisation and a change in cost awareness, which creates new opportunities for Deltares.

Figure 2



- *Connections with emerging delta regions and developing countries*

In developing delta regions, there is an increase in investment in infrastructure for transporting goods by water, road and rail. The same is true for the transport of energy, water and food. Such transport networks are linked throughout the world by sea routes and ports. These developments present opportunities for Deltares, thanks to our knowledge in the field of pipelines and physical infrastructure for water, road and rail transportation.

- *Disasters and risk acceptance*

The world is constantly shocked by natural disasters, such as floods and periods of drought that have ever-increasing consequences for man, nature and the business sector. There is an increased risk of disasters occurring, but there is a decrease in the tolerance of citizens and businesses to accept these risks and the ensuing problems. They demand a higher quality and safety from the living environment and the business climate. Insurance companies capitalize on this. Deltares can play a role within this framework by providing risk information for citizens, insurers or governments.

- *Social debate on climate change*

In recent years, the tone of the social debate about the causes and extent of climate change have become more critical. Research results are viewed with greater scepticism, and there is more frequent discussion on the need to invest in mitigation and adaptation measures. For an organisation such as Deltares, this means that it must also take up its role as an independent top institute in the field of water, the subsurface, and infrastructure in the social debate and in the media. Here too, Deltares can make a difference.

2.2 Technological developments

Three technological trends offer prospects for Deltares. Firstly, technological development and innovation are stimulated by an increasing shortage of natural resources and by the focus on sustainability. Examples of this include the technology used in recycling water and soil resources and the extraction of scarce raw materials from them, or heat and cold technology. Countries want self-sufficiency in the provision of high-quality fresh water, and furthermore, the ability to (sustainably) create energy themselves. Resource efficiency is central to this: to obtain the maximum return on natural capital. In water, soil resources, energy and transport chains, Deltares can find opportunities to make a useful contribution to adapting and adjusting large-scale physical infrastructure.

The second trend is related to ICT developments (sensors, calculation speed, communication). The quantity and availability of free measurement data and software via Internet is increasing rapidly. Models are being standardised throughout the world, making it easier to link data sources with models from elsewhere. Deltares is leading the way with real time information services for flood and environmental risks and crisis management. Together with government and business, Deltares gives professionals and the broad public, access to risk information about water, the subsurface and infrastructure.

The third and final trend is the fact that technology use has given access to locations with extreme conditions, e.g. the Arctic or the deep-sea for the mining of raw materials. Underground construction at ever greater depths, or building on water and a soft soil, also demand innovative solutions and knowledge about the behaviour of soil, water and structures under extreme temperatures and pressures.

2.3 Developments in the Dutch government

With the arrival of the Ministry of Infrastructure and the Environment, the organisation of national government has been substantially altered. Various Dutch (and European) policy themes and investments in physical infrastructure within The Netherlands are now located under one roof. What is more, the 'wet' and 'dry' elements of the Rijkswaterstaat have been integrated. This creates new opportunities for Deltares as an organisation that was set up to support primary government processes, by providing knowledge. These opportunities are most tangible in the field of flood safety, water supply, underground structures, environment and infrastructure.

The financier for Deltares is the Ministry of Economic Affairs, Agriculture and Innovation (EL&I). Together with the Ministry of Foreign Affairs they commit funding for research and innovation, to strengthen the competitive position of the Dutch business sector. In doing so, they support the position of Deltares in the 'triangle' of government/private sector/research organisations (potentially supported by European research and innovation programmes).

Mutual interaction and good cooperation with the private sector and the government then becomes even more important. The same is true for cost awareness when converting knowledge into value for society. The government is stepping back and acting increasingly in accordance with the adage 'Decentralise when possible, centralise when necessary'. This means that the national government is now handing over more tasks and responsibilities to lower government bodies. This can partly be seen in the Administrative Agreement on Water (Bestuursakkoord Water) and the Soil Covenant. Implementation tasks are also being transferred to the market. Because large orders and assignments will now be spread across smaller projects, Deltares is not only involved with different customers, but also, potentially, with more customers. For this reason, clear agreements must be made between all parties, about the contribution to research and the role of Deltares.

'Deltares is leading the way with real time information services for flood and environmental risks and crisis management.'

Another positive development is the Delta Programme. The House of Representatives passed the Delta Act in June 2011. The aim of this act is to protect The Netherlands from flooding, both now and in the future and to maintain the provision of fresh water. The Delta Act forms the legal basis for the Delta Fund that is to be used to finance this ambition. The act also demarcates the role of the Delta Commissioner who must ensure that a Delta programme is drawn up each year and that progress reports are prepared. The Delta Programme comprises nine subprogrammes, which include six regional programmes and three more general ones, namely Safety, Fresh Water Supply, and Building and Restructuring. Opportunities for Deltares can be found here, as these programmes closely match the five social themes on which Deltares is focused (see section 4).

2.4 Developments in Dutch business

The water- and delta technology sectors have an annual turnover of between 400 and 500 billion euros, and this turnover is increasing by some 5% each year. Dutch companies hold a strong position on this world market. Nonetheless, international opportunities for Dutch businesses can be

substantially increased, if they can offer innovative and integral solutions for complex social issues. In January 2011, the Dutch water sector presented its vision of the future in *Water 2020 – World leaders in Water*. This vision encompasses the ambition that The Netherlands will be the ‘Water Valley’ of the world in 2020. To achieve this, close cooperation between governments, trade and industry and the research world is essential. European governments support these ambitions via the EU 2020 strategy.

In June 2011, the Topteam Water presented recommendations to the cabinet on strengthening the competitive position of the Dutch water sector. The term ‘water sector’ includes organisations and enterprises that are active in the field of delta technology, water technology and the maritime sector. The Topteam pinpoints seven priorities that will offer exceptional opportunities in the long-term for strengthening the Dutch competitive position. The Topteam advises the cabinet to invest in these priorities and also describes 13 *business cases* that are seen to be full of potential. A fourteenth business case was added later, namely ‘The Netherlands as a test bed’. All these business cases will promote the development of knowledge and innovation, and Deltares will contribute proactively to them. Deltares is not only extremely active in the Topsector Water, but is also involved in the Topsectors Transport, Energy and Food, in view of its knowledge on large-scale physical infrastructure and its adaptation to a changing environment.

‘Excellent knowledge forms the core of Deltares.’

2.5 Investment in knowledge and research

There is a drop in government financing for strategic research directed at meeting long-term demands from the public and private sectors. The Deltares budget for strategic research in 2015, is expected to be half that of 2008. A critical lower limit is approaching: the objective of Deltares laid down in the statutes, to maintain a sound knowledge base in the field of delta technology in The Netherlands, is under pressure. Perspectives for funding by the European Commission are better, with investment in the framework programmes remaining unchanged or even increasing. The European Commission has high ambitions in the field of knowledge and innovation. European programmes require competition and co-financing, preferably by organisations and governments. It is therefore crucial for research organisations to participate, and to lead the way in European networks for applied research. The decrease in government investment in research, combined with the European requirement for co-financing, means that Deltares must actively work on generating knowledge development funds for major long-term social themes.


Deltares is expected to support primary processes from the Ministry of Infrastructure and the Environment in the field of water and infrastructure development through the cost-effective provision of knowledge. Moreover, there is a service level agreement related to software and models that are crucial to the functioning of the Ministry. Deltares strives for a greater role in primary processes that focus on transport infrastructure (roads, railways), soil- and environmental policy, and the provision of information. In addition, the demand for knowledge from provinces, water boards, and local authorities has grown, since tasks have been transferred from the State to lower government bodies. The overall demand for knowledge is increasing, despite the fact that government investment in research in The Netherlands is under pressure. The EU and foreign governments, with or without support from development banks, are parties where Deltares sees prospects for developing knowledge and tools. Western countries outside Europe (United States and Australia) are also calling on the services of Deltares more frequently.

In 2010, the turnover in research for products and services from trade and industry was substantial. The majority came from Dutch businesses and their offices abroad. In The Netherlands and in Europe, there is the potential to utilise innovation funds together with the Dutch business sector. There is a growing demand from large companies, for excellent research and they purchase this all over the world. This presents further opportunities for Deltares.

2.6 The course of Deltares

It is impossible to predict how and to what extent the previously mentioned trends and factors will ultimately develop. Numerous future scenarios can be envisaged, which Deltares will need to consider in the formation of strategic choices. No matter how widely they differ, a number of common, enduring elements can be distinguished from these scenarios. At all times, these are critical success factors for the course of Deltares.

1. *Excellent knowledge.* There is a worldwide demand for applied research on water, the subsurface and infrastructure, where top quality and short time to market are essential. This presents opportunities, because (excellent) knowledge forms the core of Deltares.
2. *Visible added value for society.* In this 21st century, the scarcities of water, energy, raw materials and food have become major and mutually related social themes. Also safety and design, construction, operation, maintenance, adaptation and management of new infrastructure, are



increasingly important themes. The demands are complex: solutions only offer added value if they also take into account sustainability and the interaction with adjacent systems and their functions. This is what Deltares does.

3. *Linking research and the market.* All Deltares activities contribute to strengthening the knowledge base. Our research objectives form the guiding principle for the choices to be made, in research as well as in the market place. Cohesive programming and thematic portfolio management are important mechanisms in this.
4. *Strengthening business.* There is no growth without innovation, no innovation without knowledge. Innovative ideas develop when nurtured by knowledge, mature technology can be brought onto the market. With government support, Deltares innovates and transfers its knowledge, products, services and spinoffs to the business sector (small and medium enterprises as well as larger organisations). As knowledge grows, so too does the economy.
5. *Attractive organisation.* High-quality research only flourishes in a favourable climate. Deltares is an attractive employer for top talents throughout the world, thanks to its open culture, unique facilities, and a well-functioning organisation that takes its 'environmental footprint' into account. Without a top set-up, there can be no top organisation.
6. *Financially robust.* In a period of globalisation and internationalisation, it is essential to operate with an excellent performance-/price ratio and to have a solid financial base. The need to be continuously alert for, and pay attention to, improving the quality and efficiency of the organisation, is self-evident.

The strategy of Deltares is based on these elements. Flexibility and the spread of risk are incorporated into this strategy.



3. Mission

The Deltares mission is as follows:

Developing and applying top-level expertise in the area of water, subsurface and infrastructure for people, planet and prosperity.

Deltares is an independent institute that provides a high standard of expertise and advice. We work closely with governments, businesses and research institutes in The Netherlands and abroad. Deltares delivers economic added value, acting with social responsibility and constantly searching for answers for society as a whole. In doing so, we draw on both our own expertise and the knowledge of others.

By 2015, Deltares aims to be among the world's top in its field of work, by continuing to build and consolidate its knowledge base. As an applied research institute, the success of Deltares depends on the extent to which its knowledge is applicable in and for society. After all, the Deltares motto is *Enabling Delta Life*.



4. Themes

4.1 Targeted investment in knowledge

Deltares delivers added value in five areas of society: flood risk management, availability of water and soil resources, delta infrastructure, healthy water and soil systems, and sustainable delta planning. These themes were identified by the Council for Delta Research in 2009 and are closely linked to the social themes and top sectors of the Dutch government. Within each of these themes, Deltares carries out various types of activities: strategic research, applied research, product development, information sharing and specialist advice. All these activities are knowledge-intensive and innovative.

In order to continue and to strengthen the Deltares knowledge base, good relationships with top universities and a healthy mix of activities within the knowledge portfolios is essential. Therefore the guiding principle for the choices Deltares makes within its research projects and in the marketplace are the practically oriented research objectives. Programmes and projects are selected on the basis of their potential contribution to the knowledge objectives. Through adequate thematic portfolio management, it is possible to make coherent and optimal use of the different funding sources and partners.

The themes comprise several programmes, and each programme contains a number of research lines in various stages of development. The mix of financing for a particular priority depends on the stage of development. This also applies to the nature and scale of market involvement. This involvement will be further expanded for all development stages in the coming years. Making research profitable for Deltares and its clients, the business case, will therefore receive increased attention.



Figure 3 Deltares' five areas of society

Developments thus far

Based on a dialogue with the Council for Delta Research and various feedback groups, the number of themes has been reduced from eight to five, in recent years. The Deltares annual research programme has been made more accessible in maps that demonstrate the relationship between, and funding of, focus areas, programmes, themes and societal questions. The Deltares portfolio management has been established, with regard to the five themes and the relationship with research institutes and market parties, has been strengthened. Improved connections between the Deltares research portfolios and the business cases of the Top Sector Water and other relevant top sectors are increasingly being pursued.

Ambitions for 2015

- The continuation and consolidation of the knowledge base is the guiding principle for the choices Deltares will make, as regards research programming, entering into partnerships and acquisition of projects. The process of setting up programmes will be more goal-oriented and increasingly targeted at innovation paths with the business world.
- Deltares will strive towards a healthy thematic portfolio and towards maintaining a balance between new initiatives and market-oriented knowledge. The mix of programme and project-funded activities will be adjusted accordingly.
- Deltares intends to bring sound, validated knowledge into practice as quickly as possible, for the benefit of governments and Dutch business.

4.2 Focus on five research themes

The following is a brief description of the five themes within which Deltares is active.

Flood risk

Due to accelerated sea level rise, in combination with land subsidence, more variable rainfall patterns, and an increase in population and industrialisation, the risks in urbanised delta areas, are substantially increasing. This theme involves the prevention and management of (the consequences of) floods. The management of flood risks requires targeted investment and careful communication regarding the residual risks. In delta areas in The Netherlands and abroad, investment in flood risk management is high. Deltares intends to apply its knowledge to provide people living in these areas with a safe and sustainable living environment at affordable costs, and with acceptable residual risks. The chosen priorities for the coming years can be divided into three so-called 'layers': 1) protection against flooding with more attention for efficient, effective, and innovative design and management of levees, dunes, coastal works, 2) risk-zoning and 'flood-proofing' of low lying regions, and 3) disaster management using innovative solutions for warning systems and crisis management. The overall objective is to optimise the combination of this 'multi-layered safety'. It involves methods and tools for flood risk management. Deltares wants its homegrown knowledge to be widely applicable internationally, and to use international knowledge and experience to contribute to flood safety in The Netherlands.

Availability of water and soil resources

This theme concerns the scarcity of natural resources; the demand for and the provision and distribution of fresh water in river catchments and deltas; water availability and salinity during dry periods; the role of water in urban areas; the role of water as a means for storing and extracting energy; and the role of the subsoil as a source of raw materials such as sand, gravel, clay and peat. Deltares aims to contribute to the economically and ecologically responsible management and utilisation of natural resources. Deltares knowledge and solutions contribute to resource efficiency, and assist in satisfying the increasing demand for water, raw materials, energy and food.

Deltares wants to develop its own hydrological modelling systems, which can be used to simulate water and sediment management at various scale levels (global, catchment basins, national, regional, local). Deltares develops innovative combinations of sophisticated measuring and monitoring techniques that are capable of mapping system limits and characteristics both above and below ground. One of Deltares' priorities is to develop and test innovative solutions that can be used to safeguard water supply for cities and the food supply in deltas. This also applies to new methods for generating and saving energy using water (tidal energy, hydropower, by mixing fresh and salt water (Blue Energy), and heat-cold storage).

Delta infrastructure

The theme 'Delta infrastructure' concerns the economically responsible, safe, effective and durable design, construction and maintenance of infrastructure in delta areas. For example harbours, roads, water- and railways, hydraulic structures, (offshore) foundations, industrial infrastructure, and (underground) structures in urban areas. Safeguarding, developing and communicating knowledge with regard to hydraulic engineering, geotechnology and risk management of infrastructure is paramount to this theme. Deltares wants to reduce the risks and costs of infrastructural networks and structures on, in, or with soft subsoil, in all life cycle phases. In addition, Deltares wants to guarantee the intended safety of large-scale (hydraulic) structures, using new knowledge and tools.

Together with the Dutch civil engineering sector, Deltares intends to realise innovative, sustainable, and easy-to-maintain infrastructure, and to embed this in the natural environment in the best way possible. Dutch companies can also export these solutions (knowledge valorisation).

For Deltares, the priorities for the coming years include: 1) safe construction (above- and underground), with a manageable environmental impact, 2) reducing uncertainties regarding the structure and behaviour of the subsoil (including land subsidence), 3) an integrated set of numerical design instruments for civil engineering works, combining water (load) and foundation (response), and 4) embedding 'wet' and 'dry' infrastructure into the natural system (eco-engineering).

Healthy water and soil systems

This theme concerns the sustainable use, management and restoration of water and soil systems. Deltares develops knowledge and innovative cost-effective solutions that facilitate the sustainable use of water, soil and ecosystems, protect their chemical and ecological health, and preserve and make optimal use of ecosystem services. In addition, innovative organisational concepts are developed that provide an optimal and sustainable combination of subsurface and water functions (for instance, safety combined with nature development). Worldwide there is plentiful, yet fragmented, knowledge about chemical and ecological processes in water and the subsurface. The focus of Deltares is on integrating this knowledge in understanding the fate of nutrients and contaminants (from 'land parcel to sea'), and on developing innovative solutions for the sustainable use, management and restoration of water and soil systems. Priorities for the coming years are:

- 1) ecology for economy; knowledge of ecosystem services and function links;
- 2) eco-engineering; utilisation of natural processes in land use and infrastructure development, and vice versa;
- 3) next generation information tools; models and information systems for water and soil quality and ecology;
- 4) eco-innovations; solutions based on knowledge of systems and technology;
- 5) from land parcel to sea: knowledge about the relevant processes on the boundaries of disciplines, compartments and systems.

Deltares continues to be an international leader in the field of particle flow models, data model integration, and eco-engineering. In the coming years, Deltares will grow towards a nationally leading position in the field of integrated research concerning the scientific characteristics and socio-economic values of ecosystem services. Deltares will also acquire a nationally leading position in describing chemical and ecological processes on the boundaries of disciplines (for instance ecology – morphology), compartments (for instance groundwater – surface water), and system boundaries ('from land parcel to sea').

Sustainable delta planning

Sustainable delta planning is *the* integration theme of Deltares. The term 'integration' involves a spatially coherent approach to delta problems, the intelligent integration of Deltares knowledge in policy analyses and regional development, and bringing together knowledge of engineering, water and subsurface, social sciences and spatial planning. The integral management and use of water, subsurface and infrastructure also form part of this theme.

'Sustainable delta planning is the integration theme of Deltares.'

Within the theme, new concepts are developed for regional stability with regard to climate change and for different forms of multiple, intensive use of space. The objective is to discover sustainable, affordable solutions – partly by combining functions – for which there is a basis in society. The theme looks further into decision-making for complex problems in the field of water and soil management and the construction of infrastructure. The final goal is to make decision-making faster and smarter.

The four priorities for the coming years are: 1) scenario analysis and adaptation strategies during (climate) change, 2) governance aspects of water, subsurface and infrastructure management, 3) new concepts, methods and tools to support spatial planning in both the short and long term, and 4) test sites for sustainable development and infrastructure. The theme focuses on heavily urbanised delta areas all over the world. It brings together various challenges such as flood safety, water and subsurface resource availability, vital infrastructure, intensive construction, and the environment. With its Delta programme, The Netherlands will be an important home market in the coming years. The six regional subprogrammes therefore serve as test beds for new concepts, methods, and tools.



Ambitions for 2015

- Deltares wants the results achieved within the themes (developed knowledge, innovations, concepts, models, etc.) to become more widespread in society through publications, papers, and the participation of employees in international symposiums and conferences.
- In each of the five social themes, Deltares is involved in prominent policy (for instance the Delta Plan) and infrastructural developments (land reclamation, harbours, dams, levees, tunnels, nature development). Deltares will participate in prestigious and iconic projects – with regard to location, customer, opportunities for unique acquisition of knowledge and funding.
- The themes will have a balanced contribution from engineering-, systems-, and policy knowledge, making it possible to execute both technical and more integrated projects and to answer social questions.



5. Market

5.1 Where we are active

Deltares has its home base in The Netherlands and the European Union. The North Sea and the catchments and deltas of the Rhine, Meuse, Scheldt and Ems are the primary focus. In general, Deltares is active in areas with substantial economic activity, often in delta areas where rivers meet the sea and where there are harbours, infrastructural facilities and cities. In order to become a world leader in its field, participation in projects and research programmes around the world, as well as cooperation with international top researchers and consultants, is essential. On the global market, Deltares takes a regional and national approach. The selection of the regions and countries is made on the basis of strategic, market and operational criteria. For instance, attention is paid to whether there is a good match with the five social themes, if our knowledge base can be strengthened, or if funding is adequate and reliable. Excellent knowledge, strategic cooperation agreements and a focus on investment scenarios, are success factors that distinguish Deltares. The strategy is to seek structural cooperation with knowledge partners, governments and businesses in all activities.

Developments thus far

In 2010, 80% of Deltares' turnover was generated in The Netherlands. A (more) international order portfolio is required to realise the international ambitions of Deltares. Therefore, more emphasis will be directed outside The Netherlands. Deltares will actively focus on the following regions: the European Union, North America, North Africa, the Middle East, and South-East Asia. Developments beyond these regions – such as those in the BRICS nations – will be closely followed, and Deltares will respond, should major changes or interesting possibilities develop there. For each region, ambitions are defined and the approach is determined. Both will be evaluated annually. Dutch policy ('Water Mondiaal', Dutch foreign aid focus countries, and Top Sectors) significantly influences the direction charted by Deltares, as well as the choice of focus countries of international financing institutions. In addition, the presence of Dutch businesses and the need for Dutch knowledge will play a role when

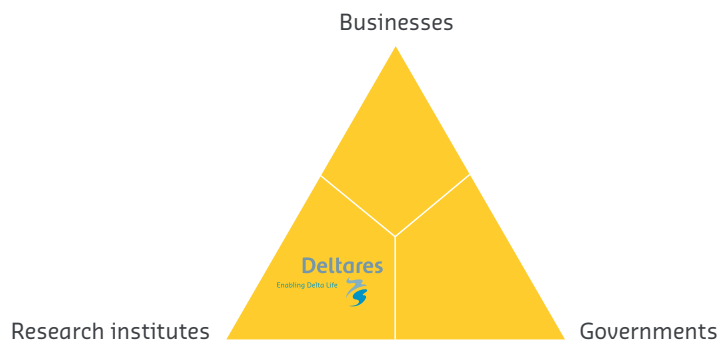
selecting regions and countries. Cooperation agreements with national research organisations and the local presence of Deltares in the regions are necessary, both for the development of knowledge as well as from the perspective of capacity building and business development.

5.2 For whom we are active

Deltares is active in the 'triangle' of governments, businesses and research institutes. As an applied research institute, Deltares focuses on societal questions and primary processes, as well as on supporting and strengthening the business sector. In the case of major social questions in a pre-competitive phase, this often occurs in public-private cooperation. Projects and research programmes are often performed in cooperation with other national and international research institutes. The relationship of Deltares with the three partners/customers in the 'golden triangle' will be explained in more detail below.

Governments

Deltares works for governments who are responsible for water, space, the environment and vital infrastructure. The most important Dutch client is the Ministry of Infrastructure and the Environment. In addition, provinces, water boards, water companies and municipalities are important partners. Deltares develops and valorises knowledge and makes it applicable for companies and governments involved in the vital infrastructure of the water, transport, energy and food sectors. These activities are jointly supported by the Top Sector policy of the Ministry of Economic Affairs, Agriculture and Innovation. For the European Commission, Deltares works together with European partners within policy frameworks such as the Water Framework Directive, the Flood Directive, the Soil and Marine, Energy Transition, and Climate Adaptation Framework Directives. Governments from outside Europe also approach Deltares. Deltares works with them on policy questions, management of and large-scale investment in infrastructure and spatial development.



Businesses

Through research, Deltares contributes to finding innovative solutions for society and the business world. This pertains to companies that advise governments and other clients, and to multinationals who are jointly responsible for vital infrastructure. Deltares provides knowledge for planning, developing and managing the following services:

- Soil and soil materials (sand extraction, dredging, land reclamation, earth moving, preparing land for construction, building materials, construction waste, and recycling);
- Water (water drainage, canals, dams and reservoirs, underground storage, irrigation and drainage for drinking water and industrial water as well as for food production, water emissions and recycling);
- Transport (waterways, locks, harbours, transfer areas, railways, stations, roads, tunnels, bridges, airports);
- Energy (offshore, pipelines, terminals, storage, refineries, cooling water, heat-cold storage, wind turbine parks, hydropower and power stations, and pipes).

The companies that are active in and for these sectors include engineering consultancies, construction, drilling and dredging companies and suppliers of materials. The EU innovation policy and the Dutch Top Sectors policy are vital to developing the export position of such companies. Deltares strengthens the export position of businesses in the Dutch water- and delta technology sector, by providing knowledge, expertise and tools. Furthermore, private investment banks and insurers are interesting customers for Deltares.

Research institutes

Deltares works together with (other) research institutes and universities. This cooperation is of strategic importance, if we are to realise our ambition of becoming internationally recognised and acknowledged, as a top institute. Our alumni network also plays an important role. Strong partners strengthen (the position of) Deltares. Deltares is internationally active alongside research organisations, among others in the Delta Alliance, which combines the complementary strengths of the Dutch public research institutes. Deltares also develops knowledge together with leading research institutes in Europe, the United States and Singapore, and with local research organisations in countries where we are active. This can help provide for local knowledge and networks. In this context, one should think of national water-, geological- and weather services. In its research activities, Deltares maintains close contacts with top institutes and universities in its own and complementary areas of expertise, such as meteorology, biology and economy. Deltares can only develop and apply research at the highest level with the help of permanent, strategic research partners. Deltares has therefore signed agreements with the most prominent parties involved, in order to make cooperation easier and faster.

'Deltares works together with research institutes and universities.'

Developments thus far

Deltares maintains good relationships with Dutch and foreign governments and businesses. There is high customer satisfaction for projects that have been carried out. The total turnover of Deltares has increased slightly in recent years. The Dutch government is the most important customer; more than half of our turnover originates from them. Deltares sees possibilities for maintaining the standard of its activities, by broadening its field of operations to include infrastructure and the environment, and by further developing its position as knowledge provider for regional governments. Activities for international governments have remained at the same level and may increase in future. For instance, a growing number of projects for European framework programmes and projects outside Europe, are financed by governments and development banks.

Ambitions for 2015

- Deltares is a sought-after cooperation partner, has an excellent national and international research network, and exchanges new information with top universities and research institutes.
- Using a focused market and regional policy, Deltares will continue to expand its knowledge position - also with the support of the Dutch government - and in 2015 will be a world leader in its field. Deltares strengthens the position of Dutch businesses.
- Deltares is involved nationally and internationally in interesting and innovative projects, where knowledge development and the application, play a prominent part.
- By 2015, there will be a significant increase in turnover from the European Union, the private sector at home and abroad, and from foreign governments. In 2015, international turnover will amount to one third of the total Deltares turnover. The total scope of activities will remain the same, or may increase slightly up to 2015.



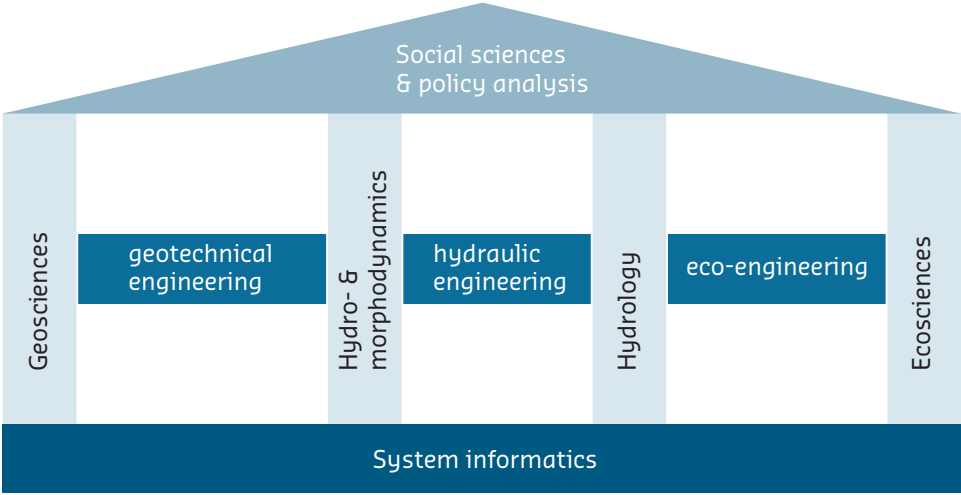
6. Excellent knowledge

Excellent knowledge is essential to achieve the ambitions of the five themes. Deltares distinguishes the following clusters of disciplines and expertise, as essential for realising the objectives:

- *applied geosciences & soil mechanics*, including geology, soil mechanics and soil structures;
- *hydro- & morphodynamics*, including hydrodynamics, sediment transport and morphology;
- *hydraulic & geotechnical engineering*, including foundation engineering, underground construction and constructive hydraulic engineering;
- *hydrological sciences*, including hydrology and geo-hydrology;
- *environmental sciences & engineering*, including chemistry, microbiology, ecology and eco-engineering;
- *system informatics*, including measuring and monitoring, mathematics, information science and software engineering;
- *social sciences & policy analyses*, including human- and social sciences, spatial sciences and risk management.

In the discipline clusters *applied geosciences & soil mechanics*, *hydro- & morphodynamics*, *hydraulic & geotechnical engineering*, *hydrological sciences* and *environmental sciences*, Deltares wants to be among the world's best. Intensive cooperation with top universities is a prior condition for achieving this ambition. In the above disciplines, Deltares intends to be internationally prominent in linking and integrating knowledge in the 'engineering' disciplines, together with and for, public and private parties.

The discipline clusters *social sciences and policy analysis* and *system informatics* have a different position. The former provides for embedding of technical knowledge in social and political processes. The latter provides for tools and support. Especially in these disciplines, Deltares aims to lead the way in linking their specific knowledge and expertise with those of the other disciplines. Together, the discipline clusters form the Deltares knowledge base in. The knowledge position of these discipline clusters is regularly assessed by a committee of internationally reputed experts, based on scientific and application-oriented criteria, tailored to Deltares as an applied research institute.



6.1 Top talents

Deltares relies on the excellent knowledge of its employees. Deltares can only fulfil its role in and for society if this knowledge basis is sound and strong. Together, the employees create the results demanded by our customers and achieve the added value in the five social themes. Deltares has more than 800 employees, the majority of whom are researchers. This is excluding the masters students and the more than fifty PhD candidates whom we host. For each of the discipline clusters, Deltares strives to have a well-balanced distribution of personnel, as regards experience, seniority and diversity, in order to guarantee the quality and continuity of the organisation and its products and services. Developing and sharing knowledge is vital for Deltares, which is why we put so much emphasis on the (personal) development of our employees. This is achieved partly through coaching, cooperation with other research partners and on the job experience, through participation in leading research and consultancy projects. Sharing knowledge is ‘mans handiwork’, and Deltares contributes by means of scientific publications, public reports, conferences, seminars, workshops and Deltares Academy.

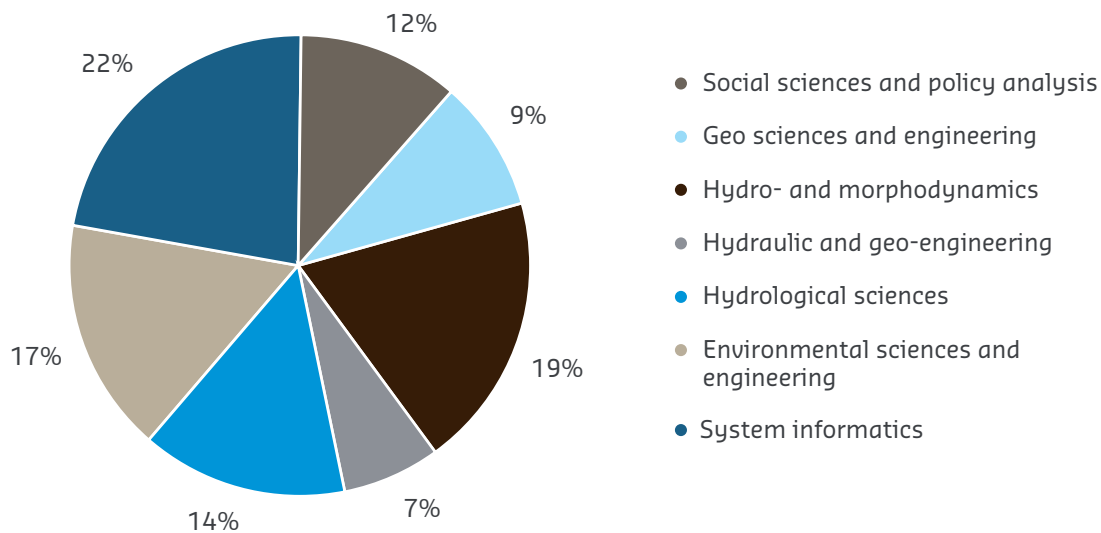


Figure 4 Clusters of disciplines

As well as investing in the quality of its knowledge base, Deltares also invests in the competence of its employees, such as leadership skills, communication, cooperation in teams, sensitivity in relation to customers, the market and environment, and cost awareness. Deltares firmly believes in the value of a diverse mix of staff. With its worldwide ambition and an international circle of customers, a well-balanced male-female ratio, as well as cultural diversity in (project) teams, is a must for Deltares.

Developments thus far

Over the past number of years, Deltares has become an integrated organisation of the highest level. Employees are creative, enterprising, independent and environmentally aware. The number of foreign employees has increased. There is ample opportunity for each employee to develop in terms of both personal knowledge and competence. The total number of staff has remained stable; external mobility of employees is not high. Deltares has recognised that it has a 'greying' staff, and wants to give more attention to the development of young talent, partly by the transfer of knowledge from 'master' to 'apprentice.' In view of its international ambitions, Deltares has a growing need for personnel with international experience who can contribute to the organisation for shorter or longer periods. Deltares aims to offer an attractive working environment to both its temporary and permanent staff.

Ambitions for 2015

- Deltares strives for a well-balanced and diverse mix of staff in all the disciplines of the organisation.
- Deltares aims to retain - and where necessary attract - international high-flyers in the field of science and consultancy in all discipline clusters, partly through cooperation with universities on research projects.
- Deltares intends to further develop and stimulate the disciplinary knowledge level and the international skills of its employees by means of internal transfer of knowledge, external coaching, culture training, schooling, and education. At Deltares, knowledge is transferred from 'master' to 'apprentice'.
- Deltares strives for a healthy balance, as regards the flow of employees into, through, and out of the organisation, so that the size remains unchanged whilst the quality increases.
- Deltares will extend the flexible outer shell of the workforce so that it can react more rapidly and effectively to changes in volume and nature of customer demand. Deltares offers an attractive work environment for temporary staff.

6.2 Deltares Works

In an increasingly digital world, Deltares wants to offer its employees an optimal working environment. This work environment must facilitate cooperation, must be suitable for the activities carried out by Deltares and must stimulate the integration of knowledge, both within and outside Deltares. This means that the offices must be comfortable, and that the computer facilities and company systems must support the primary processes.

During the first years after it was established, Deltares concentrated on ensuring that the company systems and processes were in order. This has been achieved. It is however possible to achieve even more with these systems, and in doing so, to further improve the work process of staff. With 'Deltares Works', the work process has been made more sustainable for the future and more effective. 'Deltares Works' means working in a way that is independent of time and place, where cooperation, interaction and contact are central. The concentration of staff in offices in Delft and Utrecht, as well as adjustments to the office facilities, are important steps in this direction.

In the future, there will be an increase in the need to work on-site with customers and at project locations. This will certainly be the case for projects abroad. A permanent work place will no longer be the starting point for carrying out daily work. The work place will be 'selected' depending on who, where, or what is needed at that time. 'Deltares Works' supports the open, international culture at Deltares, characterised by short lines of communication and an informal atmosphere.

Ambitions for 2015

- Deltares is investing in reducing the number of locations from four to two: one in Delft and one in Utrecht. There will also be investment in office facilities in countries where Deltares is involved in a large number of extensive projects.
- 'Deltares Works' is one of the means of achieving the ambition to be an (international) top institute. 'Deltares Works' not only involves office space, but also digitalisation of the information flow and the provision of overall easy access to information.

6.3 Research facilities and test sites

Physical experimental facilities, laboratories, field measurements and test sites are vital for an applied research institute, such as Deltares. From experiments new and unique hydraulic, geotechnical and environmental knowledge can be gathered, and smart and innovative concepts can be tested. This process knowledge is used, for example, to validate numerical models or to test innovative construction designs. Deltares has physical facilities for both large-scale and small-scale experimental research that (together) are unique in the world: Deltaflume, Delta Basin, Atlantic Basin, Scheldt flume and the Geocentrifuge. Deltares is also involved with physical experimental facilities in the field. Processes are monitored and closely studied *in situ*, at test sites where field measurements can be made (for example, the Zandmotor and the IJkdijk). The research facilities and test sites (including high-quality measurement methods and techniques and specialist personnel) form an important link in completing the so-called knowledge innovation cycle.

The Dutch government is a co-investor in these physical facilities, which are relatively expensive to exploit and for which the demand can be variable. The State has a primary responsibility for flood protection and large hydraulic and geotechnical engineering structures. Periodic assessments are essential to ensure that the flood protection systems meet the required standards. It is therefore of strategic importance to have direct access to research facilities that can help to develop the necessary assessment instruments. Furthermore, the benefits of developing knowledge and innovations in this field can take root in the public and private domain. The State is usually the body that directly or indirectly commissions large civil engineering infrastructural works. Using the knowledge developed from the Deltares physical experimental facilities, can make such projects less expensive and/or more sustainable. The Deltares facilities are also important for trade and industry. Partly thanks to these facilities, knowledge within The Netherlands has been strengthened in the field of

hydraulic, geotechnical and environmental engineering, and water management. Dutch engineering consultancies and contractors can use the knowledge generated by Deltares to improve their status. Examples of collaborations include the IJkdijk, Flood Control 2015 and Building with Nature. Deltares shares its facilities with knowledge partners at home and abroad (EU programme Hydralab). Deltares will continue this cooperation in the coming years. The possibility for carrying out large-scale experimental research in the field of hydraulic, geotechnical and environmental engineering attracts top researchers and talented (PhD) students. Knowledge developed with the help of the Deltares research facilities finds its way into the scientific and technical world via conferences, publications, manuals etc. Knowledge is also actively transferred via courses and interaction with interested parties via education and the media.

‘Physical experimental facilities, laboratories, field measurements and test sites are vital for Deltares.’

Developments

Supported by the Dutch government, Deltares has begun modernising its research facilities. This modernisation process will be completed in the coming strategic plan period with the construction of a new large-scale facility, the Deltaflume. The Deltaflume will make it possible to answer new questions related to protection against flooding, soil-water interaction, water management, and sustainable development in delta areas. It will also help meet the need to carry out large-scale tests and combined physio-biological or chemical-biological experiments. In addition, Deltares is committed to improved synoptic measurement techniques to gather and display new data (data model integration).

Deltares is working towards further integration and increased flexibility of the research facilities, critically evaluating the knowledge output and costs. Where necessary, the research facilities will be adapted to meet new knowledge demands. If necessary, funds available for facilities in The Netherlands (NWO) and Europe (ESFRI) will be used.

Ambitions for 2015

- By consistently investing in its research facilities and in improved multiple measurement and visualisation techniques and data model integration, Deltares has become the architect of unique tests that are important for developing knowledge in the five social themes.
- Together with public/private stakeholders and research partners, Deltares has invested in research-relevant test sites, both nationally and internationally.
- Deltares has made its office space more cost-effective and has achieved flexible use and management of its research facilities – including broader employment and development of the required personnel.
- Deltares collaborates with more universities and other research partners in Europe, including the sharing of facilities (thanks to the EU programme Hydralab and the ELGIP network, among others).
- Deltares has obtain better access to data and results of (inter)national experiments, in order to streamline, to extend and to build up knowledge.

6.4 Software, models and data

Deltares has a wide range of software systems available. Next to her employees, software is the most important knowledge medium for Deltares. Deltares makes knowledge useable and available to others via software. Deltares software is highly regarded in (inter)national circles. Within the five given themes, the software is used to develop numerical models and forecasting systems for water and the subsurface.

When Deltares was established in 2008, each of the original merger partners brought with them their own software, models and information systems; all in all, an eclectic mix. These have been maintained and developed further in the period 2008-2011. New developments have also been realised such as the early warning systems, the Delta model, and serious gaming. To make integrated system simulations possible ('from land parcel to sea' and 'from ecology to economy'), it is not only necessary to link Deltares' own models, but those of other partners as well. Together with international partners, Deltares has worked out standards for linking the models. In the meantime, Deltares has made part of its software and models freely available to interested users (open source). The advantage of open source software is that other research institutes and experts can initiate and

accelerate new developments. Furthermore, use of 'our' software generates more research demands for Deltares. Open source works. The combination of software and data is important for numerical models and forecasting systems. In recent years, Deltares has built up a strong position in the field of operational forecasting and information systems and in the associated field of data model integration.

Developments

Ever increasing calculation speeds make it possible to use more complex 3D models in our projects and forecasting systems. Uncertainty in data, models and forecasting systems can be reduced or at least quantified and higher-quality forecasting systems can be set up through the use of more data, to meet the increasing demand. Policy-making increasingly requires the use of widely accepted models (consensus models) such as the Delta model. At the same time, the integration of natural and socio-economic systems is becoming increasingly more important. In The Netherlands, Deltares works closely with other research institutes via the National Modelling and Data Centre (NMDC). Government bodies are also cooperating more closely with each other, in the provision of information, for example in the Informatiehuis Water and the Informatiehuis Marien. They stimulate Deltares to work with other research institutes and to develop a common set of modelling tools (for example, the National Hydrological Tools). Governments are economising on monitoring, but at the same time have an increasing need for information. Measurements must therefore be made in a smarter way and better use must be made of available data. This presents possibilities for Deltares, in the area of integrating data and models.

'Open source works.'

Also Deltares' activities abroad involve more and more work in communities using open source software. This offers opportunities for using the expertise of others to improve the Deltares software, models and information systems. The availability of data makes the configuration of models, to support policy development, and decision-making, as part of real time warning systems, increasingly easy. A growing concern is the affordability of software maintenance. The needs are increasing, whilst the budget is decreasing.

Ambitions for 2015

- Deltares has high-quality software that incorporates knowledge from a variety of disciplines. Most of our software is organised so that third parties can help develop it further. Most of Deltares' major software systems are open source.
- Deltares has developed its Next Generation Software, supported by infrastructure funds from government and the European Union.
- There is more intense collaboration with universities in using and developing software. Private parties are more involved in Deltares' software use, and in co-financing the maintenance and development of software, models, and forecasting systems.
- All relevant Deltares software is set up in such a way that integral system models and probabilistic computations are possible. Software for describing the (social) consequences and assessment functionality are integrated. Simplified versions are available for quick and low-cost use in practice. Deltares and its partners have created a number of (national) consensus models.
- Deltares has leading tools for accessing and processing ('enhancing') data, for example from satellites, and for integrating data and models. Access to and use of (inter)national data sources have been streamlined and extended for water, subsurface and infrastructure applications.



7. Organisation

Deltares is a competent and flexible organisation for applied research and specialist consultancy. The organisation is effective in the continued development of its knowledge base, and aims to re-use the experience acquired from projects. Deltares communicates openly and clearly with employees and the outside world about ambitions, strategy and responsibilities. The communication strategy of Deltares strengthens and supports the profile and the preferred position of the organisation. Deltares focuses on cooperation and sharing information. Responsibilities lie close by the primary work process, and communication lines are short.

Deltares is a cost-conscious organisation with a positive price/performance ratio. Deltares achieves this by means of sound risk management during the preparation, execution and delivery phases of projects. A suitable organisational structure, efficient management and excellent support also contribute to this. Deltares is reliable and stable thanks to sound leadership, a quality system (ISO), the ability to learn (audits), and positive financial results.

Developments

The organisation of Deltares was quickly established after Deltares was founded, and has continued to develop since. The process of demand identification, programming, and knowledge management are in place. Operational and content control have been arranged, operational systems and processes have been updated, and Deltares is ISO 9001 certified. Continued improvement is supported by the quality system and customer and employee satisfaction are high. The organisation has been set up to be flexible, and is adjusted in a process-led way as and when deemed necessary.

The ambition to achieve a top international position places new demands on the organisation. The financing mix calls for stronger research entrepreneurship. Operating internationally also means that personnel policy, project risk management and tariffs, need to be adjusted. At the same time, Deltares must continue to be reliable, socially responsible, and financially robust. Guaranteeing quality must remain at the forefront of all development and (future) activities.

Ambitions for 2015

- Deltares is more international, English is the second working language. The support departments are well equipped to facilitate international work. In countries where it is considered worthwhile, Deltares has organised a local presence with partners.
- Deltares is seen as an organisation that organises its knowledge management well: the external drive to meet the demands of Dutch government and businesses, the development and enhancement of its knowledge base, and the transfer of knowledge to practice.
- Deltares is 5% more efficient, thanks to improvements in the primary process and reduction of the overhead. Management reports and a balanced scorecard enable effective management of Deltares, at an operational as well as at strategic level.
- Deltares is a solid, stable and growing organisation, with healthy financial results (annual 2% profit, solvency >50% and current ratio >1.2) and is ISO 9001 and 14001 certified. Deltares is aware of its environmental footprint and operates in a socially responsible way.




8. Deltares in 2015

Deltares has expanded and strengthened its international position by 2015. Deltares aims to be internationally recognised and acknowledged as an independent top institute for the development and application of research in the field of water, subsurface, and infrastructure in deltaic areas worldwide. In 2015, Deltares is the most authoritative supplier of knowledge in the sector, because it effectively translates knowledge acquired from its own research, through cooperation with partners, or from other sources, into smart innovations, solutions and applications for society. Strategic cooperative relationships, with top international institutes, strengthen the international (knowledge) position of Deltares. Knowledge is at the core. In addition, Deltares will consolidate its knowledge base by funding its research and development from a variety of sources.

By working together intensively and regularly with a variety of national and foreign partners, Deltares aims to be **smart, successful** and **stable** in 2015.

Smart, as Deltares reinforces and extends its knowledge base, with the best and most committed research staff, who have access to unique experimental research facilities, excellent software infrastructure, and the most up-to-date and high-quality data and knowledge, in their area of expertise. The new knowledge generated makes the difference for our customers as well as for Deltares. Each project strengthens, consolidates and expands the knowledge available and adds to Deltares' knowledge treasury. The quality of the knowledge acquired and the broad orientation make Deltares an institute that is unique in the world.

Successful, as all Deltares activities are directed at finding solutions for social issues in its field of operation. Deltares wants to make a greater contribution to strengthening and supporting Dutch businesses. As a provider of knowledge, Deltares wants to generate faster returns for the business sector. The shift in focus to the international market contributes to this. The knowledge that Deltares



gathers abroad, can lead to applications that are of benefit to the Dutch government and business sector. The development and transfer of knowledge at the highest level is something that Deltares cannot and does not do alone: it is part of the Dutch and European knowledge infrastructure. Deltares holds a strong European position and is connected to the relevant international networks in the field of water, subsurface and infrastructure.

Stable, as Deltares is a competent, cost-effective and result-oriented organisation. In projects, Deltares operates in a decisive and focussed manner, is competitive and cost aware, and remains reliable and stable by means of adequate risk management and good financial results.

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