

water proof

Growing WaterCampus becoming the face of Dutch water technology

Drenthe Water Supply Company
celebrates 75 years of service

'Finding the right partners'

Water is a profession

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Seeing is believing

water proof

From idea to market it is about knowledge, know-how and cash



From idea to market it is about knowledge, know-how and cash. Water technology is hot. This is obvious not only from the growth in the number of companies now earning their living in this sector and the increasing level of involvement of the scientific and educational communities. But also from the fact that the Dutch government has recently designated the water sector as being of primary importance, Topsector Water. In other words: expectations are high in the Netherlands that water technology can make a significant contribution to

national economic growth. Of fundamental importance to this is the need to capitalise on innovative technologies. This requires the forging of a link between knowledge and the market. Our aim at Water Alliance is to help to create this link through, for instance, the 'Water Square' forum, an inspiring business focused meeting place where the various disciplines required for the efficient marketing of innovation can come together. A place for entrepreneurs (technology suppliers and end users), scientists, the government and financiers. We also coordinate joint participation in trade fairs, both on a national and international level. We cooperate with other Dutch organisations such as NWP and VLM. In this way we can bring the suppliers of water technology into contact with new end-users or new markets.

Now that new developments in water technology around the globe are resulting in new export opportunities for small and middle-sized enterprises, it is time to accelerate the pace of business. The expansion of the WaterCampus in Leeuwarden, due for completion in 2014, can be a catalyst in this. In addition to Wetsus, the new building will also provide space for commercial firms and will be a breeding ground for technology starters. The combination of science and entrepreneurship offers an excellent climate for the acceleration of the introduction of new water technologies to the market. This cross-pollination of knowledge, know-how and cash is also being stimulated by government policy for the primary business sector. It is not without good reason that the WaterCampus and its innovation eco system is put forward as a prime example of such policy, and as an example of how to create a link between sustainability and new technology.

The challenge facing water technology in the Netherlands: to capitalise on opportunities on a worldwide scale. This can be achieved by combining resources: the government, research institutes and the corporate world. Together we can turn the Netherlands into the European Water Technology Hub. This not only means exporting attractive, cutting-edge water technology projects. But also offering companies the perfect location for basing their European operations, as those companies will see that a location right at the heart of the world of water technology can be of substantial added value to their business. This will lead to an inspiring mix of new companies, established firms in the process of expansion and foreign businesses wishing to locate their European base right here in the Netherlands.

Enjoy the read!

Hein Molenkamp
Managing Director

Colofon

Water Proof is the magazine of the Water Alliance, a partnership between government, research institutions and industry in the field of innovative and sustainable water technology. From its base in North Netherlands, the Water Alliance builds on the 'water technology innovation chain'; a process whereby new ideas from universities, laboratories and test sites are converted into worldwide marketable products. Water Proof provides regional, national and global information on developments, results and background in the field of water technology.

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Dutch water technology at IFAT

More than 30 Dutch companies from the water technology field participated in the international IFAT Trade Fair in Munich, Germany, last May. Various innovations were featured in 2 pavilions, including Aquaver's vacuum membrane distil-

lation system and Capilix's on-line sensor range for industrial and municipal applications. Water Alliance and VLM, Dutch Association of Suppliers of Environmental Equipment and Technology, coordinated the Dutch companies' participation

with a Dutch Business Pavilion. They additionally organised a network reception and breakfast session with the Dutch embassy in Germany. Companies from more than 54 different countries were represented at the trade fair this year.

Trade fair agenda

SIWW Singapore, July 1-5 2012

The Singapore International Water Week is a global platform (trade fair and conferences) for politicians, policy-makers, industrial directors and water experts to collectively tackle challenges in the area of water. The theme featured at the SIWW 2012 is: 'Water Solutions for Liveable and Sustainable Cities'.

At the Dutch Business Pavilion, created in cooperation between

NWP and Water Alliance, many Dutch water technology companies and organisations will be present at the SIWW. More information at: www.siww.com.sg

Pollutec, Lyon, November 27 – 30 2012

A trade show for environmental technology in which water technology is prominently featured. This trade fair includes a programme of 300 conferences in the areas of, amongst others, technical informa-

tion, education and legislation. Besides these, you can also participate in the business conventions of b2fair. B2fair allows for familiarisation with new market opportunities, to find potential collaborative partners and to share business experiences at the interregional/international level. More than 200 companies from 20 countries are expected to generate more than 1,500 qualified appointments. More information: www.pollutec.com/GB/Pollutec-Lyon.htm

Water is cool!

Metro newspaper published a featurette in the beginning of June in cooperation with NWP about Human Capital in the water sector. The goal is to show pupils, university students, starting entrepreneurs and young professionals how cleverly the Netherlands goes about using water and how satisfyingly challenging studying and working in the water sector is. This effectively plays into the problem of population ageing and the need for new students and qualified personnel within this top sector.

Most modern water treatment plant in the world

In Andijk, along the IJsselmeer, PWN Technologies is constructing the most modern water treatment plant in the world: the Andijk III. This installation is based on the independently (in-house) developed technologies SIX and CeraMac, which result in improved water quality, reduced environmental impact, lower energy consumption and lower costs. The water world is fol-

lowing this construction project with great interest. PWN Technologies has already constructed a CeraMac demo installation on commission by Singapore's water company PUB as a part of their drinking water production process there. There is also considerable interest from British, American, Australian and Belgian companies.

CEW's first 'Talent Pitch' competition

During the Aqua Nederland Trade Fair, CEW's director Gerard Adema awarded the top prize of a 'Talent Pitch' to Iwan Franssen (Efrarain), who gave an impassioned speech for this product for the collection and (re)use of water for significant water and energy savings. It was not easy for jury members Gert Jan Eg (Aqua Nederland), Paul Lelieveld (Wetsus), Marcel Boorsma (WLN), Hans Wouters (Brightwork) and Luewton Lemos (CEW) to select a winner amongst the 8 very strong pitches. "All eight presentations were given with great passion and demonstrated thorough knowledge", said Adema. Marnix ten Kortenaar (Dr Ten) opened the competition with an inspiring

account of his mission to make safe drinking water available to everyone in the world. Lisa Brand (LG Sonic) explained how research into the use of ultrasound in the control of micro-organisms is producing promising results. Cees Steur (BWA-water) spoke about the Galicos project, the gas-fluid contact system, and Renee Talens (Arcadis) about her research into a nutrient-retaining weir. Harry van Dalzen (Wafilin) presented his plan for saving water. Rogier Burger (TU Delft) is only 17 and is already in negotiation with an Indian company regarding a pilot for his first project about Local Sewerage Water Treatment: sustainable and globally implementable. Annelisa Cornel and Jolet Mimpel (VWO students, both

17) capped off the presentations with a combination pitch about their mission of providing developing countries with clean and safe drinking water with their glass house. Not only were the contestants excited about the competition, so was the jury. Luewton Lemos: "All those ideas are just great. Contacts have been made and new avenues have been opened for further research and development of CEW's areas of attention for talented individuals in the applied sciences field and applicable research: water savings & re-use, water & energy, nutrients & agriculture, water system, industrial water and sensor technology."

Woudagemaal Lemmer in Madurodam

The largest steam-driven pumping station in the world still in use today - the ir. D.F. Wouda Steam Pumping Station in Lemmer (Woudagemaal) - now has a little brother. Madurodam Miniature City in The Hague features an impressive scaled-down

replica of the Wouda Pumping Station, which has been on UNESCO's World Heritage List since 1998. Specialists at Madurodam built the model according to the original construction plans made available by the Wouda Pumping Station. In the

area surrounding the new replica, the Dutch struggle with water and for water management is featured by means of information screens in a modern-day manner.

Northern water companies and governmental water boards join forces

'Connection' is the keyword for the foundation of the Vereniging van Participanten Waterketen Noord-Nederland (North Netherlands Association of Participants in the Water Chain). The Friesland Water Board, Waterschap Noorderzijlvest and Waterschap Hunze en Aa (municipal water boards), Waterbedrijf Groningen (Groningen water company) and Waterleidingmaatschappij Drenthe (Drenthe Water Supply Company) have bundled their forces in order to more efficiently invest in research, at lower costs. Hilde Prummel, director of Waterlaboratorium Noord (WLN) and initiator of the association: "Cooperation in the water chain is crucial. With the foundation of the association this cooperation has now been formalised and intensi-

fied. The connection of knowledge and skills and the joint approach in (long term) research is a logical step in addressing future challenges in the area of water quality, water treatment and water management, together." To gain new insights and develop effective solutions, the water partners will jointly participate through the association in a number of Wetsus' research programmes, a premier water technology research institute. Wetsus director Johannes Boonstra calls the creation of the association "an important step which will lead to greater synergy in the water chain and the establishment of the water boards in Wetsus' research." He also expressed his hope that more water boards will join the new association.

New export product from Groningen

An innovation from Groningen: IJKdijk. A dike equipped with sensors which immediately warn of a threat of dike breaching. China has already shown interest and has committed to buying the sensors for the immensely long dikes along the Yellow River. This will initially be a pilot project. The IJKdijk Foundation is a partnership between STOWA, Deltares, TNO, NOM, Sensor Universe and Dutch businesses.

Frisian microorganism detection system deployed for gas drilling operations in the US

The Frisian company Biotrack expects to deploy its Aquascopes for the US gas and oil industry this year. The Aquascope is a machine which detects micro-organisms, indicating the types detected within a few hours. "This is an excellent opportunity for us", says Gerard Schouten. He does not yet want to reveal the name of the client, "but I can say that it is a top-5 company in the US in the oil and gas industry", he says. "This project represents the beginning of our involvement in

this new niche market. As a business company we are constantly looking for interesting markets where we can deploy our products; gas extraction is one of these." Biotrack's bacteria detection system is extremely effective during the extraction of natural gas. This process requires a lot of water. If this water contains too many bacteria, it will become polluted and will disrupt the environment and the gas extraction process. In the most extreme case, the gas extraction

Water technology also full of opportunity for secondary and higher vocational education

Friesland College has applied for the 'Toptechniek in Bedrijf' programme for the development of a Centre for Innovative Expertise, specifically for the Water top sector. These public-private collaborations are aimed at a specific top sector which is strongly represented in the region. In such a Centre for Innovative Expertise, secondary vocational programmes and employers collaborate closely. The 'Toptechniek in Bedrijf' programme has an available budget of 11.4 million Euros, allowing for investment in 6 top sectors. Future Centres within the Chemical, Water, High Tech Systems & Materials, Logistics, Life Sciences & Health and Creative Industry top sectors will be eligible for financial support. A maximum amount of 1.9 million Euros will be available for each initiative, with at least 50% co-financing. 'Toptechniek in Bedrijf' is a programme which strives towards sustainable secondary and higher vocational technical programmes. The programme, an initiative of three ministries, has a goal of producing more and better educated technicians. The programme is conducted by the Science and Technology Platform.

His Royal Highness The Prince of Orange visited Wetsus



Foto Wetsus

His Royal Highness The Prince of Orange visited Wetsus today. The Prince was welcomed by Cees Buisman and Johannes Boonstra, Executive Board of Wetsus. His Royal Highness was accompanied by Robbert Dijkgraaf, President of the Royal Netherlands Academy of Arts and Sciences and Erik Oostwegel, CEO of Royal Haskoning, who also joined him in the Greenland expedition last year.

After an introduction about Wetsus,

the group started an extensive lab tour. Six research topics were highlighted and the Prince interacted with the researchers about their project. The Prince was informed about the newest developments in water technology. Meeting with the Prince, Dijkgraaf and Oostwegel was very inspiring for the Wetsus staff and students.

Research topics included in the tour were: "the inner structure of the water bridge", "Recovery of energy

from separated urine", "Improvements for Blue Energy", "Water saving in households", "Breakthrough in desalination" and "Water harvesting from air".

The Prince and the rest of the group also visited the adjacent Business and Science center Johannes de Doper, for a lunch with a selection of Wetsus company participants and universities. During this lunch the Wetsus innovation system was discussed by the attendants.

World Water Day 2012: Solutions for water and food security

The UN's World Water Day 2012 featured a central theme of "water and food security" in developing countries. In the Netherlands, Wageningen University and Research Centre (UR) hosted the

event. The day was organised by Aqua for All, the Netherlands Water Partnership, the Nutrient Platform, Rabobank, Wageningen UR and the Ministry of Foreign Affairs. "Water and food security" will be a recur-

ring and increasingly urgent topic in the coming decades. By 2025, an estimated 1.8 billion people will inhabit regions with acute water shortage. This consequently puts great pressure on food production.

Vitens harbours a wealth of water technology expertise

Water is a profession



Water supply company Vitens annually invests millions in research and development, contributing to a wealth of expertise for the company in the area of drinking water technology. Every day, some 29 experts at the Vitens Technology Centre address fundamental questions relating to the extraction, treatment and distribution of water. Water Proof spoke with the manager of the Technology Centre, Johan Driessen.

Vitens

Water supply company Vitens employs more than 1,700 staff. They ensure that their 5.4 million customers are supplied with top-quality drinking water every day. Vitens is active in the regions of Friesland, Overijssel, Flevoland, Gelderland

and Utrecht, making it the largest drinking water supply company in The Netherlands. Internationally the company helps to facilitate the supply and improvement of drinking water for 20 million people across the globe.

"We are the Vitens knowledge institute specialising in the area of water technology", opened Driessen. "We have the expertise and quality required to answer all of an organisation's relevant questions in that area. And for anything which we are not able to fully address ourselves, we can call on a large network of specialists, such as the Centre of Excellence for Sustainable Water Technology Wetsus in Leeuwarden." According to Driessen, Vitens is a pioneer in The Netherlands when it comes to research and development in the water technology field. "It was a conscious decision by the company to invest majorly in this, and it is entirely consistent with our responsibility to our fellow humans, society and the environment. Socially responsible business is a high priority for us. We are constantly moving towards greater sustainability. This means that we take care of the environment from which we collect our water. In order to limit the environmental impact of our activities as much as possible, we are continually investing in development and innovation."

Innovation platform

A good example of this is the Vitens Innovation Centre in Noardburgum which was opened in October 2011. It is the site for research and development for process technologies and is specially equipped for pilot studies for Vitens and industrial suppliers. The Innovation Centre also acts as one of the specialised Demo Sites within the water technology innovation chain of the Water Alliance cluster. Driessen: "Companies and 'techno starters' can develop, test and demonstrate their new technologies here. The research location is

equipped with all associated necessary facilities such as the supply and extraction of different types of water, electricity and a small laboratory. It is the intention that, through cooperation and the sharing of expertise, the testing hall will evolve into an open innovation platform." A little further up lies the water company's testing site, where water pipes will be installed underground. Everything going on in the pipes will be monitored with sensors and cameras. "We are not only involved in the further development of the production process, but also of the distribution process."

Vitens' laboratory in Leeuwarden plays an important role in all these processes. It is the most modern drinking water laboratory in Europe, processing hundreds of water samples daily. Water is assessed for turbidity, acidity, colour, hardness and for the presence of nitrites, nitrates and chlorides. The majority of the work is automated.

Vitens gladly crosses borders, and is involved in a number of international projects. "We deploy our expertise, for example, for the improvement of drinking water facilities in developing countries. Just recently, a colleague from the Technology Centre travelled to Ghana to provide assistance with laboratory analyses there. You could simply send equipment there, but it is imperative that you also send qualified people there to teach them how to use it most effectively. The Netherlands is a global authority in the area of water, and it is only fitting that we contribute to this reputation – not just because we want to, but also through a sense of responsibility on our part."

Vitens converts methane into electricity

This summer Vitens will begin construction of a new installation on the premises of drinking water production company Spannenburg in Tjerkgaast (Skarsterlân municipality, Friesland). This installation must serve to collect the methane produced during treatment of pumped groundwater. The gas is

then transferred to a gas motor. This motor powers a generator, which will supply the premises with electricity. Until now, the methane gas would usually be left to evaporate in the atmosphere, contributing to the greenhouse effect. In the vein of the increased sustainability of water treatment processes, Vitens will now significantly reduce methane emission at Spannenburg. The technique

applied for this, vacuum degassing, was developed independently by the company. The Technology Centre played a major role in this. Since then the technique has won several important innovation prizes. Spannenburg drinking water supply company supplies circa 140,000 households and businesses in the western half of Friesland province with drinking water.

Sensor technology from Emmen aids farmers worldwide

'Spraying and irrigating at the right time'

What is the best time to fertilize the fields? When exactly do crops need to be watered? Is it the right time to spray pesticides now? Thanks to data collected from soil sensors and mini weather stations in farmers' fields in more than 30 countries, Dacom in Emmen now has the precise answers to these questions.



In Emmen they usually know the condition of crop fields in, for example, Egypt, Saudi Arabia, South Africa or Russia even before the farmers themselves do there. More than 60 computers continuously collect data from thousands of underground soil sensors, weather stations and associated equipment which the company has placed in customers' fields across the globe. Using this data, Dacom assesses whether it's time to turn on the water, dig in fertilizer or to apply pesticides.

Support

The farmer is subsequently in-

formed of this via GPSR, internet, cell phone, fax or telephone. "We help farmers to make the right decisions", explains Jan Hadders. The former potato farmer is founder and owner of Dacom. Fascinated by computers, in the '70s and '80s he searched for the possibilities that this technique could afford in supporting farmers in their work. The days of farmers looking to the heavens and checking the wind with a wet finger in order to determine whether or not he should water or fertilise, are long gone now. This is essentially just guesswork, says Hadders. "The farmer often did as his forefathers, but this is not

by definition the best thing for the crops, nor for our water supplies. Our Agri Yield Management warning system ensures that farmers can work far more accurately." This has numerous significant benefits – water usage is reduced, fertiliser is dug in at the most optimal time, and pesticides are used more effectively. This will promote healthy crop development, save money, increase yields and will benefit the environment.

Potato blight

This sensor technology is also the foundation of the program developed by Hadders to combat the

feared potato disease Phytophthora. "The fungus which causes this disease is especially active during certain weather conditions. We can now promptly warn for this, ensuring the application of pesticides only at that time. Large quantities of preventative spraying treatments are no longer necessary."

All Dutch potato farmers have already adopted this system, but it is now also being tested by Zulu farmers in South Africa.

The environmental benefits of Agri Yield Management should not be underestimated. Water scarcity

is after all a global problem, and agriculture's role in this is considerable – this sector consumes at least some 70% of the Earth's available freshwater. This percentage is even higher in some countries, attests Hadders.

"In the Middle East this figure is 80% and in Oman even 90%. Our system can reduce this level of usage by 25 to 50%."

Innovative attitude

This year Hadders was named Drentse Entrepreneur of the Year. According to the jury report Hadders deserved this title on account of his perennially innovative at-

titude. Since May 1st, his daughter Janneke runs the company's daily operations, although this does not mean that Hadders can now rest on his laurels. "I'm still always busy with new discoveries and still very much enjoy travelling to the countries to which we supply our systems. I have had countless business meetings in countries with people from a wide spectrum of cultures, which is something I cherish very much and consider an enrichment to my life."

Jan Hadders

Founder and owner of Dacom in Emmen

Born: March 24th 1948 in Emmen, The Netherlands

Marital status: Married, three children

Career: Following his studies at the MTS in Emmen and the Hogere Landbouwbouwschool (Higher agricultural school) in Dronten, he left for Canada for 6 years. In 1976 he returned to Emmen, taking over his father's farm. Since then he has been guiding Dacom for some 25 years, an innovative company with 25 staff.

A number of these employees work in Saudi Arabia and South Africa.

He leased out his own 35-hectare field 4 years ago.

Hobbies: "I still have a big motor bike in the garage which I like to ride every now and then. I don't do it enough, though. I also enjoy tinkering with old machines."

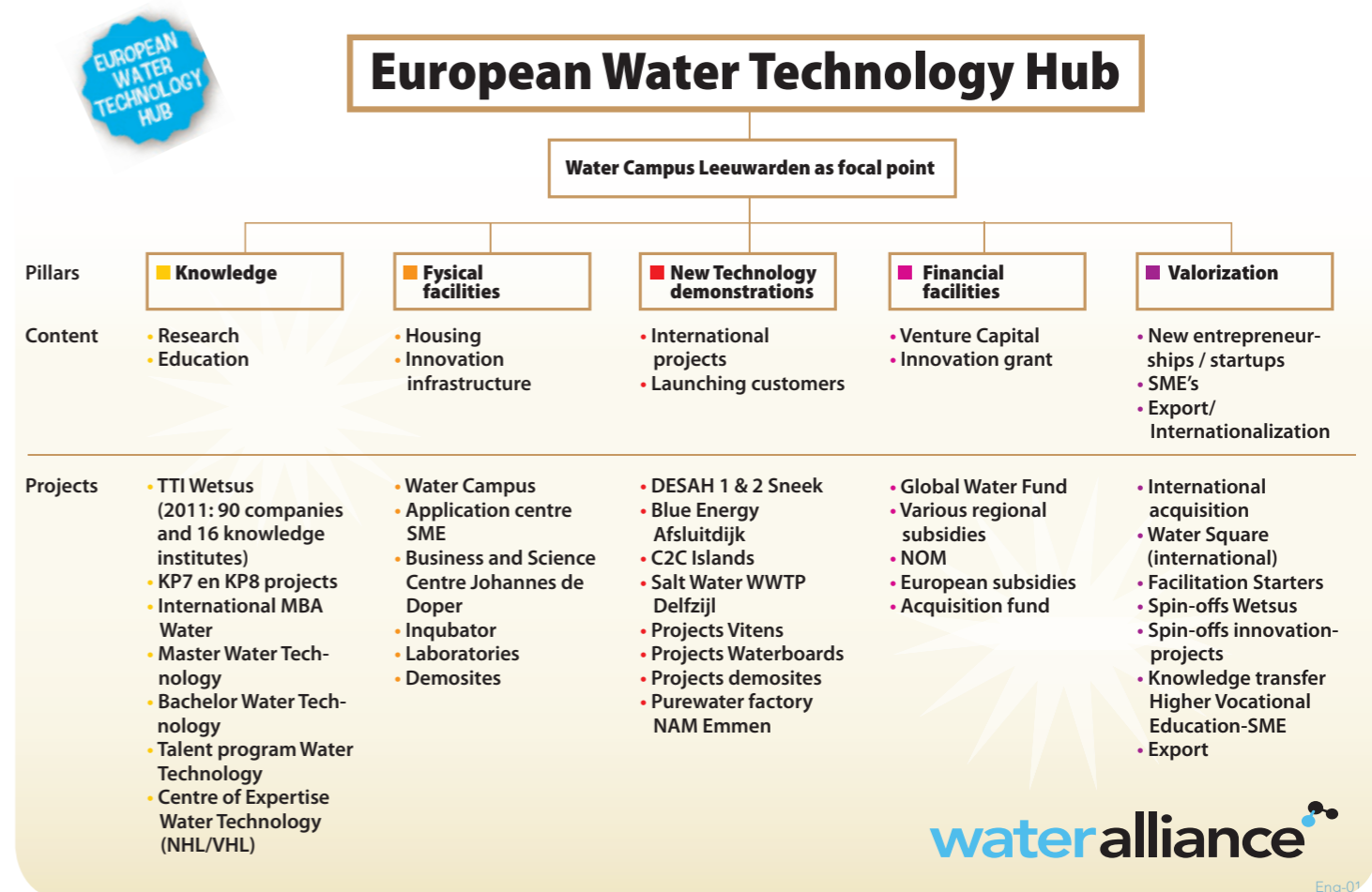
Growing WaterCampus becoming the face of Dutch water technology

The Dutch water sector is increasingly showing its collective face in the form of the WaterCampus in Leeuwarden. The physical and virtual concentration of companies, knowledge institutes and demonstration projects in and around the Frisian capital city allow knowledge and techniques to be more effectively commercialized, increasing the international visibility of the sector. The ambition: The Netherlands as the European water technology hub, with the WaterCampus as its physical core.

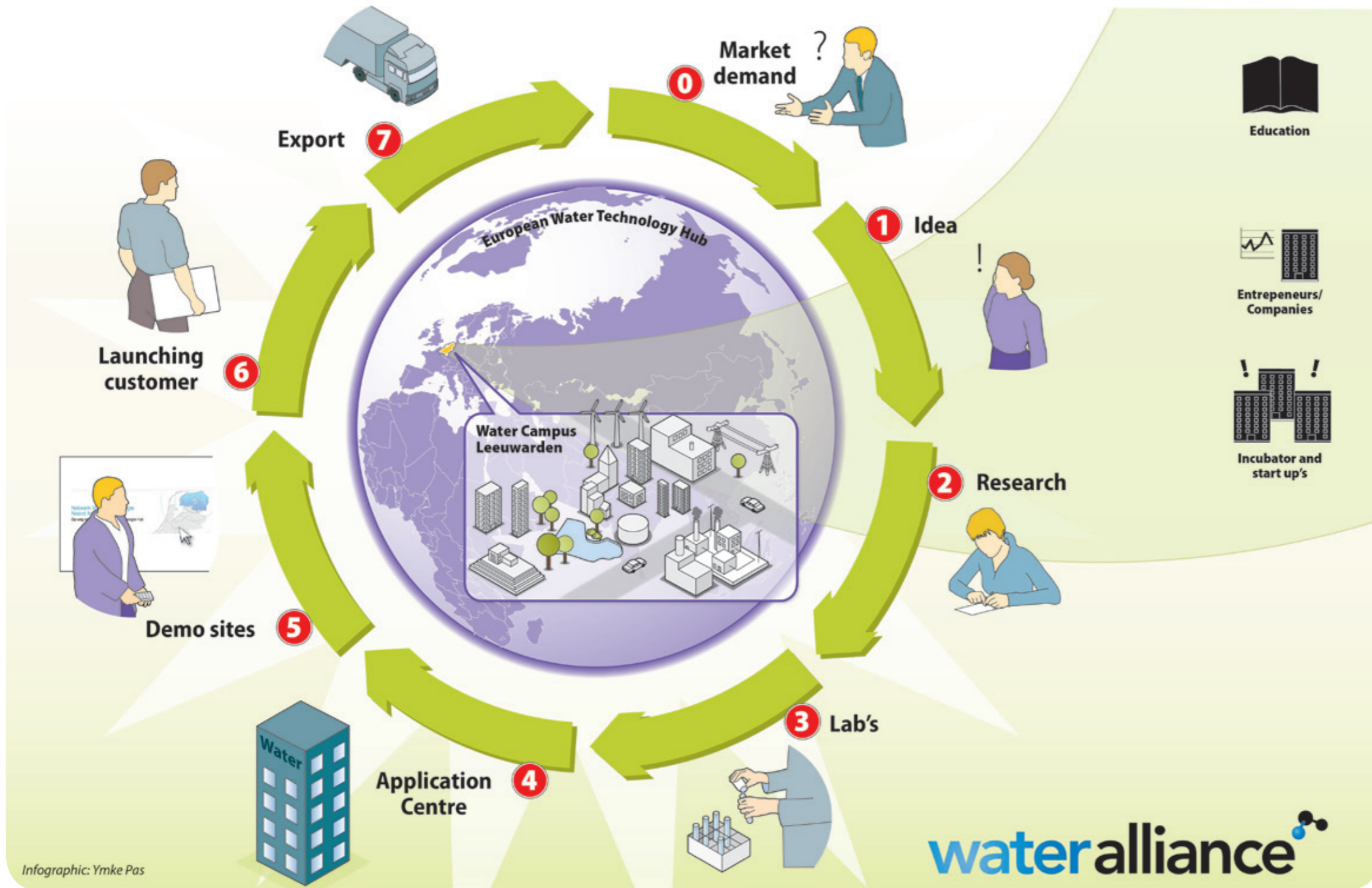


Since the foundation of TTI Wetsus in 2007, a physical WaterCampus has emerged surrounding this Technological Top Institute for Water Technology in Leeuwarden. Here research, know-how, business (circa 20 companies and institutes with a collective of three hundred knowledge workers), venture capital, talent and education are physically concentrated. This concentration of multidisciplinary knowledge as well as the international network of several hundred knowledge workers who aggregate at Wetsus at set times (90 companies and 16 universities in The Netherlands and abroad have affiliated themselves as participants in Wetsus' research program) is very appealing to entrepreneurs. In order to meet the growing demand, a new Campus building will open in 2014. The ambition is that by 2020 some 2,000 knowledge workers will work in and around the WaterCampus, many of them Dutch. It is expected that the manufacturing industry will also reap the rewards. The organizations and entrepreneurs who are active in and around the WaterCampus will find common ground in the Water Alliance. This partnership between entrepreneurs, knowledge and educational institutions and governments has the task of facilitating and promoting the clustering, profiling and valorization of the activities in the WaterCampus and its inland regions. Besides the business community, the Northern provinces, municipalities, Wetsus, the Chamber of Commerce, the NOM and many other organizations are actively involved in Water Alliance's activities.

Hein Molenkamp, managing director of the Water Alliance, explains how entrepreneurs are accommodated in their innovation projects from within the WaterCampus. "We use, amongst other tools, demo sites - an important link in the innovation chain for the advancement of new innovations. These places are located in the vicinity of the WaterCampus, where companies can test, up-scale and demonstrate their technologies to potential clients. Examples? –Desalination technology and Blue Energy in Harlingen, municipal wastewater technology in Leeuwarden, drinking water technology in Noardburgum, sensor technology related to drinking water in Glimmen and hospital wastewater in Sneek. Moreover, various showcase projects have emerged in the past years, where new technologies are implemented; for example, the industrial salt wastewater treatment plant in Delfzijl and the PureWater factory in Emmen. This plant upgrades treated sewage to ultrapure water for the energy company Nederlandse Aardolie Maatschappij B.V. (NAM). NAM heats the ultrapure water to create steam that is being used in the redevelopment of the Schoonebeek oil field. The regional government also plays an important role in facilitating innovations. Molenkamp: "Friesland province and Leeuwarden municipality are doing just that in the form of innovation and demonstration subsidies, and also through co-financing of Wetsus, Water Alliance and the WaterCampus. A good example is the innovation program Fryslân Fernijt, in which approximately 40



Water Technology Innovation Chain From idea to market!



Infographic: Ymke Pas

small-to-medium-sized companies have been involved in 15 innovation projects over the past years. This has resulted in 9 new products and 4 new companies. The Frisian water cycle management agreement is also geared towards stimulating innovation. The local government, the drinking water company and the governmental water board work together with other parties from the water cluster. The agreement's intention is a more sustainable, more effective and more customer-directed water chain in Friesland. Innovation is one of the aspects needed in order to

reach these goals. Special attention will be given to cross-sector innovations, whereby connections are sought with, for example, developments in relation to energy, agriculture, healthy ageing and households."

The question of valorisation: Capitalisation of knowledge and technology?

"We know of a number of tools for marketing innovations. One of them is the Waterplein (Water Square). These are meetings where researchers, entrepreneurs and investors make acquaintance

based on a realistic business case. With these meetings-organized in cooperation with the NOM, amongst others - question-oriented marketing is stimulated. Entrepreneurs work together regarding the current market demands of end users. In this way, you can make the market stronger as a consortium with the end user. The NOM uses their network to not only connect the parties within the water sector to the Water Square, but especially also those outside the sector. In the vein of export stimulation, the Water Square also caters to current international (export) market demands and collaboration between national and international technology partners. From within the Water Alliance, the NOM and

the Chamber of Commerce (in cooperation with NWP and Agenschap NL) are strongly involved in the international acquisition and promotion of the Water Square. By focusing more on potential business cases, trade missions will more easily pique the interest of potential participants from the small to medium-sized business sector. This is one of the concrete activities for the further shaping and implementation of our ambition, to be the European Water Technology Hub."

How does regional education respond to the opportunities in the water sector?

"Vocational colleges in Leeuwarden are also active in the field of water technology. They do that, for example, in collaboration with small and medium-sized companies. In order to stimulate these partnerships, the Centre of Expertise in Water Technology (CEW) was established. This centre concerns itself with applied research in water technology and is a partnership of NHL University of Applied Sciences, Van Hall Larenstein University of Applied Sciences, Wetsus, Vitens, Wetterskip Fryslân (Friesland Water Board), Stichting Well (Well foundation), Water Alliance and WLN. Leeuwarden is maturing into the national education centre in the area of water technology, where a comprehensive water technology curriculum is offered (College/University/Vocational/PhD level). It is a place where you can enroll in water technology at all levels, and can emerge as an innovative professional, a water technology expert or an excellent water researcher. The bundling of the different educational levels into one physical location ensures close collaboration with the business world within a climate of innovation. By means of the present facilities and knowledge programmes, practice oriented education is possible through internship and research for water-related projects. This is attractive for students as well as companies."

What, according to you, is necessary in order to further increase the added value of the bundling of forces in the Netherlands?

"The unabated continuance of Wetsus and the further expansion of the WaterCampus in combination with entrepreneurship. Wetsus' research programme is of great significance nationally as well as internationally. It is fundamental for the entire water sector in the Netherlands. Wetsus' business plan provides, amongst other things, a doubling of the current research programme and strong growth in the number of involved organisations, and subsequently also the WaterCampus. We are standing on the cusp of the largest international water technology research programme in the world."

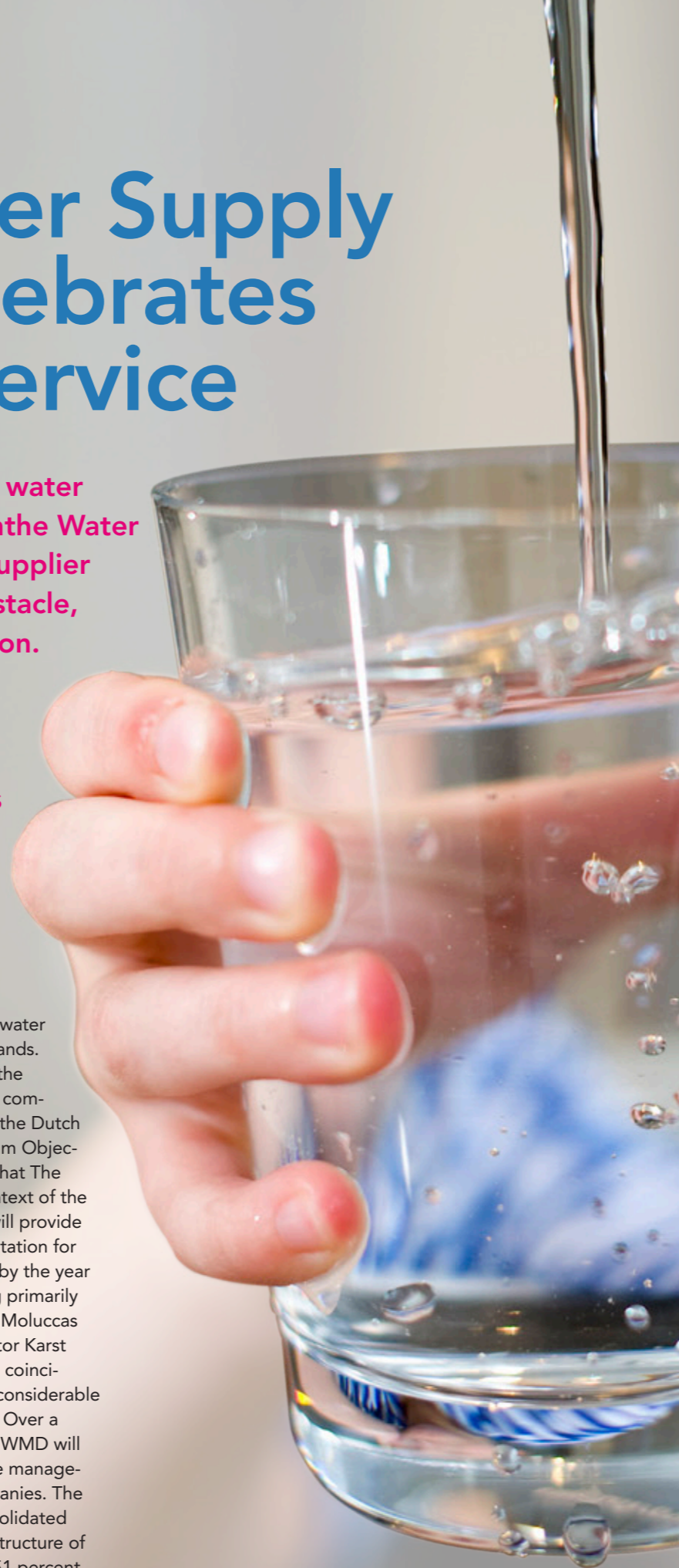
An innovative player

Drenthe Water Supply Company celebrates 75 years of service

Supplying thirty billion litres of drinking water per year to a half million residents, Drenthe Water Supply Company is the smallest water supplier in the Netherlands. That status is no obstacle, however, to paving the way for innovation. Besides extracting, treating and distributing drinking water, the organisation distinguishes itself through the development of innovative activities and ideas. Drenthe Water Supply Company is now celebrating its 75th birthday.

In 1894, Meppel became the first municipality in Drenthe which was provided with a water supply line. Assen followed in 1897, and Coevorden in 1915. Of the major places in Drenthe, the last to be provided with a water supply line was Hoozevee in 1927. Initially, local water supply companies who were involved were only active within their own municipalities. This left almost eighty percent of the population of Drenthe reliant on wells, water pumps and rainwater reservoirs. When the Drenthe Water Supply Company (WMD) was established in 1937, this finally came to an end. WMD, which employs 170 staff, is a public corporation with Drenthe province and its eleven municipalities as shareholders. With three percent of the national households as customers, this organisation in

Drenthe is the smallest water supplier in The Netherlands. WMD is also active on the international front. The company is contributing to the Dutch government's Millennium Objective. It is the intention that The Netherlands, in the context of the fight against poverty, will provide drinking water and sanitation for over 50 million people by the year 2015. "We are focusing primarily on North Sulawesi, the Moluccas and Papua", says director Karst Hoogsteen. "That is no coincidence - Drenthe has a considerable Moluccan community." Over a period of fifteen years, WMD will take over the corporate management of the local companies. The companies will be consolidated in a holding company structure of which WMD occupies 51 percent



of the shares. The local government will accommodate personnel and concessions. WMD will provide the management, the knowledge and a quarter of the investment funds. The approach is aimed at the recovery and establishment of infrastructure, technical support and the training of employees. The intention of the project is that Indonesian water suppliers, in time, will be able to operate completely independently and cover their own costs. The project must ultimately provide 3 million people with clean drinking water. "The costs of the Indonesian activities total 10 million Euros. 7.5 million of this amount comes from the Ministry of Development Cooperation, and 2.5 million from WMD. "The investments will be earned back," says Hoogsteen. "The project covers all costs. Besides the tasks that stem from our sense of social responsibility, I also see these projects as management tools. We are well on our way to finishing the waterworks. By implementing new projects abroad, you expand and preserve your know-how, and become more attractive as an employer."

In Drenthe province, the water distribution company is involved in other civic affairs as well, such as involving the province's youth in work projects. "We sponsor practical training for handicapped youth, where they can gain experience by, for example, doing landscaping maintenance. They have to feel like they have a place in society as well." An opportunity which, according to Hoogsteen, is seldom taken advantage of in The Netherlands, is the use of ground- and gray water for heating purposes. "Enormous potential for developing alternatives for residential heating lies in this option", he explains. "We are working together with regional partners on preliminary activities for such a water and energy project in Hoozeveen. The groundwater can, before it is treated for drinking water, be warmed up or cooled down by several degrees. By separating the stream of water, it is possible to

extract either warm or cold water out of the drinking water stream. A heating pump will subsequently ensure that the pumped water can then be used for the heating or cooling of nearby buildings."

Looking ahead to the future, Hoogsteen expects that the management of water will become the new source of income for the agricultural sector in the north of The Netherlands. "By carefully managing the water on and under agricultural fields, farmers can make an important contribution to the local water quality. Farmers will have to receive reasonable compensation from the water supply company and the water boards. This could represent a guaranteed basic income for the farmer. Moreover, this is necessary considering that traditional crops in Drenthe and Groningen are becoming less important and the European agricultural subsidies for production are on the decrease. A further benefit is that the subsidies for farmers who work with conservation techniques, the preservation of landscapes or enhancing the sustainability of rural communities are only becoming higher. That means that farmers will earn money not only by practicing conservation methods and nature development, including afforestation and recreation, but also by protecting the groundwater and the creation of possibilities for water storage." Hoogsteen calls the Hunzedal a good example of an area where these types of developments are already in place. "The farmers in the area were sceptical at first about more water and nature in the Hunze stream valley, but many agrarians are now involved in the plans for better water quality. They have the possibility to sell sections of land or to trade land plots. They can get rid of the low-lying and wet fields. One of the farmers sold a large piece of land along the Zuidlaarder Lake in order to accommodate a nature development project by the Drenthe Land Trust and a housing project by Tynaarlo municipality."

NWP: Working together towards a strong and vibrant water network in the Netherlands

'Finding the right partners'

The Netherlands Water Partnership (NWP) is a public-private network organisation. By bringing organisations in the water sector together, the Netherlands will be able to make an even greater contribution to tackling water-related issues on an international scale. This pooling of resources will serve to strengthen the position of the Netherlands in the international water market.

NWP director Lennart Silvis: "The NWP is a network organisation established by the water sector in the Netherlands with the aim of bringing together the government, research institutes and social organisations under one umbrella. Some people seem to think that the NWP is simply the office here in The Hague and nothing more, but that is not

of contact when it comes to information relating to the Dutch water sector. Almost all of the leading organisations with international and social ambitions in the water sector, like Water Alliance for example, are members of the NWP. Silvis: "Using the networks, they are able to reinforce each other by adjusting their policies to fit each



the case. The office functions merely as a supporting mechanism for the pooling of all resources within the sector. Here we have the knowledge and the expertise required to do that. The NWP is the web of networks that arises from this work."

Point of contact

In the space of ten years, the organisation has grown to become the point

of contact when it comes to information relating to the Dutch water sector. Almost all of the leading organisations with international and social ambitions in the water sector, like Water Alliance for example, are members of the NWP. Silvis: "Using the networks, they are able to reinforce each other by adjusting their policies to fit each other and by creating strong alliances. This improves competitiveness in the international arena considerably. It means that when you have found the right partners you do not have to do all the work yourself on your own."

This is needed more than ever now, as competition in the water sector on the international stage is becoming even greater. Water is big business. More

and more countries are turning their attention to innovative water expertise. As a result of increasing competition, the prominent role that the Netherlands has historically enjoyed in this area can no longer be taken for granted; all the more so because of the fact that we are not exactly regarded as cheap in the market, according to Silvis. "There are many countries that provide cheaper solutions to water problems, but these are usually only short-term solutions. The Dutch water sector, on the other hand, offers long-term, sustainable solutions. We tackle problems in a comprehensive and integrated manner. This often requires higher levels of investment, but these costs are generally recovered in the long run. And that is the message that we need to communicate."

Cause and effect

Silvis mentions, as an example, the subsidence of the capital city of Indonesia, Jakarta. As a result of the continuous pumping of groundwater, the city is now sinking at a rate of 20cm each year, making it very vulnerable to flooding from the sea. "You can keep on reinforcing your sea defences, but you will eventually also have to stop the process of subsidence. To do this you need to look at the water situation for the entire city. What changes need to be made to the drinking water supply system so as to eliminate the need for pumping from groundwater sources? Flooding is also caused by rainwater coming from the mountains. There are a lot of canals in the city, but these were usually used for dumping waste. A Dutch consortium dredged these canals and instructed the local population on how to keep the waterways clean. This is an excellent example of an integrated, comprehensive approach."

The NWP has an extremely wide range of services, including encouraging in-

novation in delta and water technology, the coordination of joint plans and vision, organising market strategies, trade missions and trade fairs, promoting Dutch water expertise and the exchange of information and news. Essential to all of the above is the optimal exploitation of the innovative capabilities of the Dutch water sector.

Brainboxes

Silvis: "The link between the "brainboxes" - those who spend their time 'in the attic' working on new water technology inventions - and those at the business end of things needs to be strengthened. The aim of the NWP is to improve the links between research and business, inventors and financiers, and suppliers and end users." A plan of action has been developed using the framework of the Water Technology innovation programme. Though this programme has come to an end, the plan upon which it is based is currently being rolled out by the NWP at the European level.

According to Lennart Silvis, this approach has enabled the NWP to become a strategic partner adept at bringing different parties together based on their substantive input. "We don't just deal with parties within the water sector itself, but also with parties from other sectors. For example, we are currently working together with the space exploration sector in the Netherlands on using satellite technology to monitor dike stability and to measure surface water levels. This has already resulted in a new project in Vietnam. Cooperation with the agricultural sector is also a source of new opportunities, as are the energy sector and the overseas development sector. The NWP network is the place where the various forms of cooperation can come together in a productive manner."



Lennart Silvis

Managing Director of the Netherlands Water Partnership (NWP)
Education: After finishing secondary school in Leiden, attended the Technical University of Delft where he graduated in water management and civil engineering.
Career: As a civil engineer, worked at the research dept. of the Civil Engineering faculty in Delft. Went on to work for an Australian engineering firm in Sydney. In 1999, returned to the Netherlands to work as a consultant and manager for WL Delft Hydraulics (now known as Deltares). In 2005, took up a position at the NWP, initially as programme manager. Promoted to the post of operational director. Managing Director of the network organisation since July 2011.
The power of the NWP according to Silvis: "I am a firm believer in the need for building partnerships between organisations in the water sector and the need to keep on improving. Together we can make a bigger impact, both in the Netherlands and abroad."



'Back to the village water pump'

The ultimate goal of Join the Pipe, a non-profit organisation based in Amsterdam, The Netherlands, is a fair worldwide distribution of clean drinking water. In order to achieve their goal, the organisation sells public tap water points, amongst other products. The proceeds made will be used to install drinking water pumps or digging wells in developing countries, an initiative which has already begun to pay off.

What have overweight children in the Netherlands got to do with the strides of Join the Pipe in order to stimulate the drinking of tap water and to invest worldwide in drinking water projects? Nothing, you might assume at first. According to initiator and founder of the Amsterdam-based non-profit organisation and advertiser, Geraldo Vallen, however, overweight children in The Netherlands have everything to do with Join the Pipe's efforts towards clean drinking water worldwide. "It all began with a campaign against child-

hood obesity in elementary schools which promoted the drinking of tap water."

Inexpensive and healthy

Tap water is extremely inexpensive, is always available and you won't get fat from drinking it like you would with soft drinks. Recent European studies indicate that Dutch children drink the most soft drinks: a whopping 0.6 litres per day. In part as a result of this, 22% of Dutch children between the ages of 10 and 12 are overweight, and 6%

are extremely obese. Vallen: "If we teach children at school to drink tap water, they will continue to do so as they get older. Drinking tap water is much healthier than all of those soft drinks."

The promotion of drinking tap water is still an active goal, but is no longer restricted to elementary-age children. For Vallen, the promotion has furthermore long passed the phase of just an advertisement campaign. In the meanwhile, drinking water has become his passion, where he can use his experience as an advertising guru very well, allowing him to successfully couple Join the Pipe's idealistic principles to practically feasible and recognizable methods.

Dream

The dream now is to build the longest aqueduct in the world in order to provide everybody with clean and safe drinking water. "Along with oxygen, drinking water is the most important necessity to life on Earth. Every year, more than a billion people die because of the lack of clean drinking water, while we who are living in rich Western countries spend billions on bottled water. It's just too ridiculous for words if you

think about the high quality of the water that comes out of the tap", reflects Vallen.

That's why Join the Pipe sells reusable water bottles, carafes and why they install water taps. Every bottle, carafe and water tap symbolizes a piece of the pipeline. The proceeds will fund water projects in Africa and Asia, amongst other regions. "In the past, there was a water pump at every village square where you could quench your thirst. We want to bring water pumps back to The Netherlands, so you can fill up our stylish and sustainable water bottles with clean tapwater. Every water pump here in the Netherlands has a sister pump in a developing country. The buyer of the pump decides for him/herself in which country the sister pump will be placed.

Google Earth

There are now water pump points in Amsterdam, Utrecht, Groningen, Leeuwarden, Arnhem, Wageningen, Zwolle, Eindhoven, at Schiphol Airport, at the train stations in Bostel and Roermond, and also in Canada, Singapore and Belgium. Furthermore, Join the Pipe lets participants in their project see what's happen-

ing with their investment. Vallen: "The problem with many support organisations is that they can't or don't make visible what it is exactly that they are doing with the money they receive. We do. Right after a water pump is placed somewhere in a developing country, the participant who had chosen that country receives photographs of the project as well, as the coordinates of the water pump, which makes it possible to follow the project on Google Earth.

According to Vallen, it's a double-edged sword. "The project is also a kick-start for sustainable business. The production of tap water is inexpensive and has a negligible effect on the environment. That, however, does not count for the bottles of spring water lining the shelves of the supermarket or that you get served in most restaurants. In the Netherlands alone, 500,000 of these bottles end up in the garbage every day – 182 million bottles per year. None of us should want that, away with all that bottled water. We should quench our thirst by just getting some water from the tap, or by going to the village water pump."

Winning design vision for WaterCampus extension



Alderman Henk Deinum from Leeuwarden municipality has announced the winning design for the expansion of the WaterCampus. In a European procurement, the design by the architects collective GEAR was judged the best. GEAR is comprised of Architectenbureau TWA, Achterbosch Architectuur, Jelle de Jong Architecten and Borren Staalenhoef Architecten. Buro Wassenaar will be the construc-

tion consultant and Grontmij will provide consultation with respect to installations and sustainability. Under the direction of Leeuwarden municipality and in cooperation with Wetsus, the design team is expected to present their definitive design by the beginning of 2013.

The completion of the expansion is scheduled for the autumn of 2014. "Leeuwarden has the ambi-

tion to become the centre of the European Water technology Hub, as capital of watertechnology. The WaterCampus offers current and future generations of scientists and entrepreneurs all the conditions necessary for bundling knowledge/expertise and facilitating innovation. The expansion to the WaterCampus represents yet another significant stride in the right direction", said alderman Deinum.

Members WaterAlliance



The Northern Netherlands Provinces (SNN):

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