

# CORPORATE SOCIAL RESPONSIBILITY REPORT **2015**

COMMUNICATION OF PROGRESS  
- OUR ACTIVITIES IN 2015  
- OUR FOCUS IN 2016



## CHIEF OPERATING OFFICER STATEMENT

Water is a very important element in the majority of the defined Sustainable Development Goals (SDGs). In this year's Communication of Progress (COP) you can read more about how DHI technology and solutions support the development towards the SDGs. Together with clients, partners, universities, public and private organisations, we continuously strive to develop innovative solutions which can support sustainability and avoid water from being the limiting factor for development.

At DHI, we are ambitious in our contributions to the sustainable development of societies. Our quest is to solve the world's toughest challenges in water environments, and with our global organisation, we share our knowledge on water across continents.

Sharing knowledge and technology is one of our CSR focus areas. We are pleased to announce that we can report record high activity in THE ACADEMY by DHI and in our MIKE Powered by DHI software technology. Improving the environment and conducting responsible practices are our two other CSR focus areas. With more than 3000 ongoing environmental projects being implemented world-widen in accordance with our business integrity policy, we continue to consistently deliver on our CSR strategies.

We will continue our strong support for the United Nations (UN) Global Compact's efforts in the areas of human rights, labour, environment and anti-corruption. We are pleased to reaffirm this commitment from DHI. We endeavour to unceasingly improve the integration of the Global Compact and its principles into our business strategies, culture and daily operations.

Yours sincerely,

Jacob Høst-Madsen  
Chief Operating Officer



*We endeavour to unceasingly improve the **integration of the Global Compact** and its principles into our business strategies, culture and daily operations.*

## INTRODUCTION

This Communication of Progress is our second annual report since we joined the UN Global Compact in 2013. In the last year, we have further aligned our strategies and activities to the ten principles of the Global Compact initiative and we are pleased to present our results and achievements.

We utilise the UN Global Compact as a:

- framework for conducting Corporate Social Responsibility (CSR) initiatives within DHI Group and to ensure that our business partners support the Global Compact principles
- basis for communication with the world around us – we want to convey our views on social responsibility and the work we do in this field
- platform for dialogue with our staff, our clients and our external business partners

The purpose of this report is to:

- explain our progress to the UN
- communicate our messages, challenges and achievements to our various stakeholders — with whom we have contact with in a variety of ways
- communicate our work in implementing the UN Global Compact principles to our employees as well as to others who have an interest in CSR and social responsibility efforts

## CORPORATE SOCIAL RESPONSIBILITY (CSR)

At DHI, we contribute to our CSR through three focus areas:

- Improving the environment
- Responsible business practices
- Sharing knowledge and technology

Our global activities support the 17 UN Sustainable Development Goals (SDGs). In the coming period, we will increase our focus on supporting the SDGs through our global operations.



# IMPROVING THE ENVIRONMENT

*Each of our **Signature Projects** has ushered in considerable environmental, social and economic benefits.*

## OUR ACTIVITIES IN 2015

Our projects described below provide concrete examples of how we have helped solve the world's toughest challenges in water environments. Each of these projects has ushered in considerable environmental, social and economic benefits in their respective areas.

To prevent the introduction of invasive species via ballast water from the world's fleet, the United States Coast Guard (USCG) and International Maritime Organization (IMO) have required ballast water to be treated before discharge. DHI is approved by the USCG as an Independent Laboratory together with DNV-GL to provide independent performance evaluation of ballast water management systems (BWMS) for the approval process. The purpose of the performance evaluation is to ensure that the BWMS are capable of meeting the ballast water discharge standard in land-based and shipboard evaluations and not cause unacceptable harm to the vessel, crew, environment or public health.

DHI Ballast Water Centre underwent a very busy year at the test facility in Denmark. In 2015, six manufacturers of BWMS: Bio-UV (France), Hyde Marine (USA), KSB Aktiengesellschaft (Germany), Oceansaver (Norway), Qingdao Headway Marine Technology Co. (China) and Sunrui Marine Environment Engineering Co. (China), completed land-based performance testing according to USCG rules and the Environmental Technology Verification (ETV) protocol. Furthermore, shipboard testing of the BWMS were carried out in Asia, Europe and USA. The aim of the performance testing is to provide the documentation of treatment efficacy as required for type approval applications.

In Northern India, we developed a Real-Time Decision Support System (RTDSS) for the Bhakra Beas Management Board (BBMB) – the entity in charge of managing droughts and floods in the North Indian States. BBMB also has the duty to ensure that people living in the North Indian States have enough water to meet their irrigation needs. Our RTDSS provided BBMB with the latest information available on the state of the water in its catchment and command area, allowing them to improve flood management, leading to minimised loss of life and property for those living along the rivers.

In the western Indian state of Rajasthan, we helped to improve the water supply and distribution system through hydraulic modelling in 222 towns. Rajasthan is known for its natural beauty and colourful history. However, 60% of the state's land is desert – the main cause of its acute water deficiency. In the context of water distribution, benchmarking is an effective tool to identify critical components of the water distribution system where interventions are required. Our study and the results gleaned provided an immediate solution to the challenges facing the demand-loaded water distribution network in Rajasthan, helping the state government in their objectives of equalising water pressure and enabling its equitable distribution network.



We helped companies like Statoil – that conduct oil and gas explorations – ensure that noise from their work does not harm marine mammals. Current noise risk assessment models assume that marine mammals are stationary. However, contrary to the assumption, marine mammals move around their environment, which means traditional risk assessments can lead to unrealistic results. Using the Chukchi Sea as the demonstration area, we created a Dynamic Risk Assessment Model for Acoustic Disturbance (DRAMAD) to model the movements of marine mammals before, during and after noise exposure. DRAMAD provides far more accurate results and enables Statoil to convey environmental awareness to the local communities in the area.

In the Czech Republic, we helped in the sustainable management of Non-Revenue Water (NRW) in their overall water distribution network. Severočeské Water and Sewerage Company (SCVK a.s.) operates the largest regional water supply system and distribution network in nearly 400 settlements in the Czech Republic. However, many of the water distribution networks suffered from high leakage levels – to the tune of 20-40%. In close cooperation with SCVK a.s., we developed a method which catered to specific requirements within their NRW reduction strategy, the most important part of which was the implementation of our Leakage Monitor. The monitor has effectively helped to manage leakages in the water distribution networks and maintained them at stable and economically optimal levels.

In the Lake Victoria Basin, East Africa, we helped develop a Water Resources Information System (WRIS) to enable stakeholders to access, share and evaluate available basin data. Several East African countries depend on Lake Victoria – the world’s second largest freshwater body – for transportation, hydropower generation, food and water. Environmental changes in recent years have highlighted the need to coordinate various water resources and environmental initiatives in the basin. Our WRIS – developed as part of the large-scale Lake Victoria Environmental Management Programme – enables easy and robust data exchange for improved management and planning with a national and regional perspective.

In Singapore, our coral modelling research project carried out in collaboration with Singapore National Parks Board won an R&D award in a national urban sustainability congress. The award was presented for innovation in using agent-based modelling (ABM) to determine ecological connectivity in marine environment and to sustain marine biodiversity during coastal development. The ABM of coral larvae dispersal can be readily applied to various areas in the management of coastal and marine environments, particularly in relation to land reclamation, offshore construction and conservation planning. Our project findings have paved the way for new projects looking at seagrass connectivity as well as location optimisation for marine habitat enrichments for coral reefs in Singapore.



In Thailand, we protected millions of lives against devastating flooding by implementing our Decision Support System (DSS) for flood forecasting in the Chao Phraya River basin. During the 2011 monsoon season, severe floods ravaged Thailand. With hundreds dead and millions of dollars in economic losses, it was one of the worst floods to hit the country in decades. The Hydro and Agro Informatics Institute have engaged us to develop a flood forecasting and flood management DSS to improve Thailand's flood management in the future. Based on real-time information, the DSS will enable Thai authorities to make sound decisions and undertake preventive measures to alleviate the detrimental impacts of severe flooding. Furthermore, it will aid authorities in warning the public about imminent flooding, giving residents and businesses time to prepare and react in times of need.

#### **Minimising emissions of greenhouse gases**

DHI has a strong focus on reducing our emissions, which includes carbon dioxide (CO<sub>2</sub>) and other greenhouse gases, through our behaviour. In the last decade, we have worked diligently to reduce the emissions through specific projects, such as in solar power and energy optimisation. In the summer of 2015, an energy audit of the activities at our Headquarters in Hørsholm, Denmark was conducted. The results led to the development of a wide range of new opportunities to reduce our heating and electricity consumption. Through the use of The Climate Compass, we quantify and visualise our emissions and reduction targets. The CO<sub>2</sub> emissions are measured in metric tonnes and the reporting is based on scope 1, 2 and selected 3 sources.

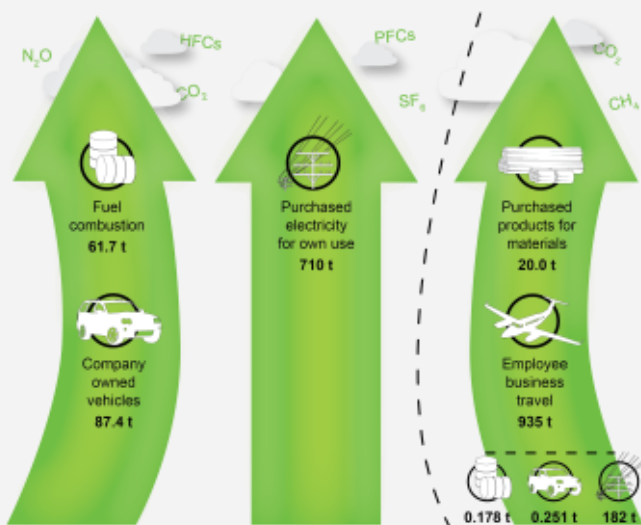


## OUR FOCUS IN 2016

In 2016, we resolve to implement an environmental policy which sets out the framework for environmental management – with objectives and measurable targets to be achieved by all DHI offices worldwide.

We also aim to implement an environmental management system in accordance with ISO 14001. In addition, we will measure our worldwide CO<sub>2</sub> emission caused by energy consumption and work-related transport and will publish our CO<sub>2</sub> footprint calculated according to The Climate Compass.

We will also establish a method to estimate the reduction in CO<sub>2</sub> emission if we choose video conferences over physical trips.



*The main emissions in our headquarters arise from the use of electricity and heating in office buildings as well as employee business flights, which accounts for more than 90% of the total emissions.*

The Climate Compass was formed in cooperation between the Confederation of Danish Industries and the Danish Ministry of Business and Growth. For more information on The Climate Compass, please access The Corporate Climate Portal here: [www.climatecompass.dk](http://www.climatecompass.dk)

View all our projects here: [www.dhigroup.com/references](http://www.dhigroup.com/references)

# RESPONSIBLE BUSINESS PRACTICES

*To enhance our internal focus on CSR issues, **we have launched our 'Am I being DHI?' campaign***

## OUR ACTIVITIES IN 2015

In 2015, we launched our 'Am I being DHI?' campaign — describing how DHI staff contribute to a good DHI culture and a great working environment. It also emphasises that staff must conform to our business integrity policies.


We have also made our responsible business practices policy a part of our New Employee Induction and our Project Manager training. This will further ensure our continued implementation of CSR best practices throughout our organisation.

Furthermore, we have integrated a requirement to recognise and follow a Code of Conduct as part of the qualification process when subcontracting. This process will help improve the process of assessing CSR impacts during the subcontractor qualification phase and convey our CSR policies to our subcontractors.

In addition, we have extended our whistle blower policy to include reporting of violations of human rights and labour principles – anonymously if the person so chooses.

In 2015, we have implemented our documented management system – the DHIBus in an additional five of our global offices. The system includes policies and procedures related to CSR.





*We reaffirm our commitment to ensuring responsible business practices throughout our organisation.*

## OUR FOCUS IN 2016

To further strengthen our commitment to engaging in responsible business practices, we will screen projects for violation of human rights and labour principles, damage done to the environment, and governmental corruption as part of the risk analysis during the bidding decision process prior to entering into contracts and agreements. This will enhance our internal focus on CSR issues and notify our clients of our CSR principles, helping to prevent and mitigate the risks of violating human rights and labour principles, as well as damage to the environment and state corruption that occurs.

In addition, we will make it easier for all to find our existing corporate whistle blower portal at our corporate website, enabling easier access to the policy and report form.

We will continue to strive to exhibit CSR best practices and assess labour-related risks in our operations, with health and safety as focus areas to be prioritised. Moving forward, we will evaluate the risks and implement actions to ensure the health and safety of all our employees.



# SHARING KNOWLEDGE AND TECHNOLOGY

*Around the world, we share **our**  
**knowledge** of water environments.*

## OUR ACTIVITIES IN 2015


*'Education is the most powerful weapon which you can use to change the world.'* – Nelson Mandela

With this powerful message in mind, DHI has invested heavily in the young minds of the world, while also sharing our knowledge and technology globally. With several thousands attending our seminars and courses worldwide – more than 6,500 people in 2015 – we help increase the knowledge and skills of professionals within the field of water.

DHI has signed Memoranda of Understanding (MoUs) with universities and research organisations around the world to support educational activities. In DHI South Africa, we support local universities with internship opportunities for their students, providing mentorship and capacity-building at every step of the way.

In the past year, we co-organised many UNEP-DHI Eco Challenges – online serious gaming competitions for high school students in Asia. The UNEP-DHI Eco Challenges educate the youth about the importance and interconnectivity of water, as well as how it can be better managed sustainably. What started out as a small competition in four countries involving about 100 students in 2013 has grown to include over 10 countries and more than 3500 students in Asia Pacific in 2015.

In 2015, our not-for-profit online serious game – Aqua Republica – was a tribute to Singapore's 50 years of independence. The 2015 Eco Challenge used a modified version of Aqua Republica to include scenarios reflective of Singapore's water problems, allowing the players to embark on their own 'Singapore's Water Journey'. The 2015 finals were held in conjunction with World Water Forum 2015.



*By continuing to share our knowledge, we will **help others** further enhance their knowledge of water environments.*

We also collaborated with Singapore's Public Utilities Board (PUB) to run a mini inter-generational competition on World Water Day, where children, parents and grandparents participated in the game to improve their knowledge about water. Together with UNEP-DHI and Water Youth Network, we conducted a game session for young water professionals in the World Water Forum, where more than 50 participants enrolled to learn about the interconnectivity of water and land use.

DHI's presentation of our Aqua Republica online game was a highlight at Wasser Berlin International 2015, one of the biggest water-sector trade fairs in Germany. Teams of international students were able to test their knowledge in the area of integrated water resources management in a virtual competition against one another. The four players that economised the restricted resources in the best possible ways received a prize. The students gained a valuable understanding of water systems and the integrated utilisation of such systems. Our German office sponsored this activity by preparing the case study and supporting the event with our human resources department, as well as providing both hardware and software including other educational material.

Floods cause devastating disasters worldwide and can also lead to diseases and contamination of water supplies. In Turkey, for example, major flood disasters occur every year, resulting in loss of lives and damage to properties. DHI has provided Turkish water authorities with assistance to adapt to the Water Framework Directive requirements by providing input to flood risk assessment activities. We conducted training courses on flood management for more than 100 experts in 2014 and 2015 where about 10% of the participants were university students. At DHI, we encourage the youth to be actively involved in such activities. In Thailand, we arranged a flood seminar in collaboration with the Southern Natural Disaster Research Center at Prince of Songkla University for executives from regional offices of government agencies in Thailand.

One of the major water challenges in several Czech, Hungarian, Slovak and Bulgarian cities is the loss of water in water distribution systems. Losses are usually between 15-60% – a massive waste of potable water and energy. In light of climate change and drought threats, this high percentage of potable water loss indicates one of the most visible wastages of resources in Europe. To counter this problem, DHI has developed a unique technology for reducing the leakage of potable water from distribution systems. The system is implemented in utilities and leads to the reduction of water losses through online monitoring.



## OUR FOCUS IN 2016

As seen in the SDGs, ensuring sustainable management of water is high on the world agenda. At DHI, this is also one of our priorities. We conducted three sessions of a 3-day integrated water resources management (IWRM) training course in Vietnam and Myanmar. The course focused on tools to implement IWRM – enabling environment and institutional roles as well as management instruments. During the course, participants had the opportunity to enhance their ability to undertake IWRM with a special focus on watershed and river basin catchment management, as well as on ecosystems and climate change aspects. The courses were arranged in collaboration with the UNEP-DHI Centre, which promotes IWRM at national, international and cross-national levels as well as support climate change resilience through considered water resources development, management and use.

In 2016, we aim to continue sharing our knowledge of water environments through capacity development programs, training courses and seminars around the world. Our collaborations with universities worldwide and our annual UNEP-DHI Eco Challenges which targets the youth, ensure a focus on the next generation in our activities. The UNEP-DHI Eco Challenges enable students to learn about integrated water resources management in a fun and engaging way through serious gaming. This year, we will be co-organising the UNEP-DHI Eco Challenges again in Asia, with the aim of increasing the outreach even further. In addition to this, we will be arranging a number of other challenges for students in other parts of the world.

Climate change and its impact on the world is significant. It is already affecting water resources and their management in various regions. This can lead to severe impact on urban areas, including increased flood risks, reduced water supply and displacements from coastal cities. Urgent action is needed as emphasised in the SDGs. As such, we will continue to focus on offering training courses and raising awareness on climate change mitigation and impact reduction.

We will also continue to offer free and easily accessible online courses and webcasts aimed at sharing knowledge and providing further insight into understanding and modelling the world of water. To us the message is clear: knowledge holds the key to unlocking the right solutions.

# COMMUNITY ENGAGEMENT

*We aim to make a positive impact in the communities where we work by contributing our knowledge and resources to initiatives and charities.*

Passionate DHI employees from our global offices dedicate their free time to engage in community-based activities or help people in need around the world through pro bono work, fundraising or by volunteering their knowledge and experience. For example:

In the Czech Republic, more than a dozen of our employees helped to collect waste from the River Sazava in April as part of the environmental initiative 'Cista Sazava'.

In our South African office, instead of providing corporate gifts and Christmas cards to clients, our colleagues are using the money to sponsor the studies of Aphiwe Nzimande through the iThemba Academy. They have been sponsoring Aphiwe for three years. The iThemba Academy offers fundamental early education to orphaned and vulnerable children from the broader Valley of 1000 Hills Community in Kwa-Zulu Natal. The independent school staffed by dedicated educators aims to ensure that the potential of each child is nurtured. Many DHI staff at our South African office has graduated from the University of Kwa-Natal, and as such, this area is close to our hearts. DHI also sponsors the mathematics prize at the school as we hope to encourage early engagement in the science and engineering fields.



*Aphiwe Nzimande, whom DHI is sponsoring through the iThemba Academy.*

Apart from the above, DHI South Africa has also donated a set of chairs, desks, computers and electronic equipment to Zitikeni Secondary School in Thembisa to help improve its training room facility.

In Singapore, employees took part in a 50 km walk event organised by Raleigh Society to celebrate life and to raise funds for hospice care. They created an online donation platform to channel additional funds to hospice care and raised the first donation.

In Denmark, DHI laptops are on their way to newly-arrived refugee families. This initiative will hopefully support them tremendously in their communication with loved ones at home, with the Danish authorities, and eventually in their efforts to get a job and integrate into Danish society.



THE GLOBAL GOALS  
For Sustainable Development

# UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

*Our activities **support** the goals to end poverty  
protect the planet and ensure prosperity for all*

1 NO  
POVERTY



## Secure availability of water resources for drinking water and increasing resilience

The poorest are among those hardest-hit by lack of basic water services and lack of ability to reduce their exposure and vulnerability to climate-related extreme events and other disasters. DHI is involved in a wide number of projects globally aimed at improving water management. This allows water to be made available as a resource for drinking water. Through our modelling systems, we provide the basis for early warnings of floods both in urban and rural areas.

2 NO  
HUNGER



## Improve the water basis to achieve food security

The limiting factor for food production is the availability of water. Today, our freshwater resources are being rapidly diminished and climate change is putting additional pressure on the resource. Sound water management in general and management of disasters such as droughts and floods, in particular, are key elements in the protection of our precious resource. The numerous donor projects undertaken by DHI throughout Africa as well as in South and South-East Asia has contributed to an improvement of water management. This consequently leads to improved food security. In Malawi, DHI is undertaking the project 'Shire Basin Operational Decision Support System through Enhanced Hydro-Meteorological Services'. In this project, we are establishing a forecast system that provides seasonal forecast to support the agricultural communities in undertaking proactive adaptation to climate-related risks. The forecast system thus contributes to improved food security in Malawi. Flood forecasting and early warning components can further enable timely action to reduce losses and damages.

3 GOOD  
HEALTH



## Reduce the number of illnesses caused by polluted water

More frequent extreme rain events put pressure on the water infrastructures in the cities globally, leading to increased recurrent contamination of drinking water, more combined sewer overflows and wastewater-contaminated urban flooding. Human exposure to contaminated water results in an increased risk of infections. DHI develops links between hydraulic models and health risks related to drinking water, water for reuse, recreational water and urban flooding. The models help to estimate or predict infection risks and can be applied in areas such as the planning of climate change adaptations, estimation of intervention effects and can be used for warning of health risks during urban flooding. Examples are modelling of cholera risks – in Dhaka, Bangladesh, as well as infection risks during urban flooding in Copenhagen, Denmark.

4 QUALITY  
EDUCATION



## Increase availability of quality technical water-related education

Knowledge often holds the key to unlocking the right solutions. In today's rapidly changing world, continuous learning is vital to overcome water-related challenges. Through THE ACADEMY by DHI, we offer training courses, capacity development packages and seminars around the world to help tackle these challenges. We also offer online (freely accessible) courses and webcasts to share our knowledge and raise awareness of water issues to the global community. Furthermore, with each Memorandum of Understanding DHI has signed with universities and research organisations around the world, we promote the growth of activities in educational institutions by providing educational materials and resources and offering internships to students. With our online serious game, Aqua Republica, we have engaged thousands of students through partnerships and activities such as the UNEP-DHI ECO Challenges to educate our youth about the importance and interconnectivity of water, as well as how it can be managed more sustainably.

5 GENDER  
EQUALITY



## Empower women through Women's Water Initiative

Since 2006, DHI has strived to empower women in the water sector by providing training courses for women from developing countries. In November 2015, DHI has headed a training course for nine women from the Central Asian states in Denmark. The women were exposed to the Danish approach in water management through lectures and visits to authorities and utilities. In addition, the course focused into strengthening the women's personal career in the water sector. The trainees are paired to a personal mentor for a year after the training course. DHI is still keeping in contact with trainees from previous courses to help them in their careers.

## Ensure availability and sustainable development of water

Through the work of its United Nations Environment Programme (UNEP) collaborating centre (UNEP-DHI Centre), DHI is helping to ensure the availability and sustainable development of water in countries that are under the greatest pressure. UNEP-DHI Centre was part of the core United Nations (UN) technical team that supported the formulation of the Sustainable Development Goals (SDG) 6, and is now part of a group of UN agencies and partners that will provide assistance to countries in achieving their ambitions till 2030. More specifically, UNEP-DHI has been invited to help lead UN country engagement efforts under SDG target 6.5 (to implement integrated water resources management at all levels, including through transboundary cooperation as appropriate by 2030) which will involve periodic national self-assessments in all countries. This not only provides an indication of water resources management status, its greatest value will be in helping both countries and donors better understand water management needs and determine how they can be best addressed. Building on this, UNEP-DHI is now assisting the African Ministers' Council on Water (AMCOW) in developing a high profile pan-African water monitoring and reporting system that will be fully integrated with SDG monitoring, reporting and follow-up.

## Improve the basis for renewable energies like hydropower and wind power at sea

DHI's extensive hydrological experience, combined with our advanced modelling and remote sensing technology, allows us to supply our clients with detailed knowledge on the water resources, accounting for future changes in climate and land use. Such analyses are crucial in the search for the best sites for new hydropower (HP) installations, to evaluate their economic efficiency and for proper design of the infrastructure. We have recently completed such analyses for feasibility studies of 25 medium-size HP plants in Peru and for augmentation of the large Salto-Grande plant between Uruguay and Argentina. DHI is often contracted to quantify impacts from large dams and to propose possible alleviation measures. We have just finalised detailed analyses of the impacts on the heavily-populated Mekong Delta from 12 projected HP dams on the mainstream river. We have also advised many reservoir owners and designers on how to alleviate reservoir sedimentation in order to help sustain the life time of the reservoirs. Our advanced forecasting and operations technology has assisted many HP operators (such as Bhakra Beas Management Board in India, HAJII in Thailand and Colbun S.A. in Chile) in optimising their daily and seasonal operations.

## Promote entrepreneurship and job creation for water and process technology developers

The demand for efficient water and process technologies increases every day due to stricter environmental regulations as well as the need to recover and reduce the use of cost-intensive resources such as energy, water and raw materials. The market for highly efficient water and process technologies is large. Successful access to this market will result in significant job creations for technology developers. The success rate of new technologies and processes require an in-depth fundamental approach in the development phase. This ensures that optimisations are based on an understanding of the governing mechanisms of the technology. At DHI, we work closely with technology providers and industrial end-users to develop innovative technology solutions using highly-specialised knowledge and competencies. This results in job creations within sectors such as engineering, construction, installation, commissioning and service. We have dedicated laboratory facilities, modelling tools for scale-up, as well as equipment that supports both field testing and documentation. We create value and jobs for our clients by reducing the risks of failure in the innovation process, reducing investment costs and by issuing and publicising verification statements to summarise the efficiency of the technology.

## Increase the basis for sustainable and resource-efficient industrial production

Water scarcity significantly affects manufacturing industries in several areas of the world, resulting in either over-exploitation of existing water resources or the inability to operate which eventually affects economic growth and job creation. In 2014 and 2015, DHI has assisted a large manufacturer within the rubber industry in the water-scarce region of Tamil Nadu in India to develop a corporate water strategy. This enables a future growth of up to 200% of current production capacity without increasing their water consumption. The corporate water strategy focused on optimising existing procedures and processes to be more water efficient, designing of new onsite water reuse solutions and access to alternative water resources, thereby enabling a growth strategy decoupled from their water footprint. In Denmark, DHI has orchestrated the creation of DRIP (Danish Partnership for Resource and Water Efficient Industrial Food Production), a public-private partnership focused on water efficiency in the food industry. The ambition is to produce more with less water – once again decoupling water footprint from economic growth. The partnership is supported by DKK 50 million from Innovation Fund Denmark and DKK 48 million from the partners.

## Promote cooperation in international shared waters

Poverty reduction and water management are linked in many parts of the developing world. For instance, predictable and reliable access to irrigation water benefits the poor through higher agricultural production, higher yields, less crop failure and higher employment. It also enables small holders to switch from subsistence production to high-value market-oriented production. In India, as part of the National Hydrology Project II, DHI has developed a generic Decision Support System (DSS) for integrated water resources planning and management for nine Indian states. The DSS was, amongst others, customised to address seasonal planning through the integrated operation of reservoirs supplying to a variety of sectors. The DSS visualises the consequences of possible plans for sharing the often scarce water resources, particularly in the dry season, and helps farmers optimise their crop schedule. The DSS further enables a higher degree of transparency in water management decisions.

## Make cities more water safe and resilient to water related disasters

A number of scenarios exist for how the climate will develop in the future. These climate changes scenarios are global and there is a need for down-scaling the global scenarios to local conditions in order to analyse local impacts. DHI has developed software for statistic downscaling of the extreme events. Hence, new infrastructure can be designed in the most robust and cost-efficient way, and adapted to the future climate. The software is made available as part of DHI's product offerings. Today, many cities around the world are hit by urban flooding. Urban floods typically have the highest impacts on the poorest people as they typically live in cheaper and more flood-prone areas of town. Urban flood water is often a mixture of rain and sewage, posing a serious health risk for the city dwellers. DHI has developed a software tool which computes urban flooding and health risks for the population due to direct contact with flood water. This provides a unique possibility into understanding the interaction between urban flooding and the health risks caused by direct human contact with the flood water. It also provides a viable option for reducing the burden of diseases through the use of intelligent urban flood risk management. The software has been made available to DHI's software clients.

### 6 CLEAN WATER AND SANITATION



### 7 RENEWABLE ENERGY



### 8 GOOD JOBS AND ECONOMIC GROWTH



### 9 INNOVATION AND INFRASTRUCTURE



### 10 REDUCED INEQUALITIES



### 11 SUSTAINABLE CITIES AND COMMUNITIES



## 12 RESPONSIBLE CONSUMPTION



### Promote sustainable consumption and production patterns

The increasing world population of mid-income consumers will require a more sustainable production and consumption of industrial products. The limitation of water and resources makes reusing and recycling key issues in the future economy. Chemicals are necessary in all industrial productions and moreover a driver of innovation. However, they are also potential barriers to recycling. DHI assists the industry in substituting substances of concern from products and processes and has established a Partnership for Substitution where we cooperate with experts within the technological and economic industry to identify sustainable solutions for small and medium Danish enterprises. We have also developed an Analysis of Alternatives for the European metals industry (Nickel Institute) and evaluated the identified alternatives – technically, economically and in terms of risk-reduction potential. Through our knowledge, research and services, DHI contributes to the sustainable use of chemicals and to phasing-out hazardous substances with long-lasting impacts on human health and the environment.

## 13 CLIMATE ACTION



### Improve capacity on climate change adaptation, impact reduction and early warning

A structure will always be designed for a given return period of an extreme event. Hence, structural measures can never fully protect communities against extreme events like flooding. Early warning systems add the possibility of getting additional lead time before a flood hits, and this lead time provides the means for flood damage reduction and evacuation.

In the EU FP7 project, PEARL, DHI develops, builds and tests novel types of early warnings systems for coastal flooding. The aim is to build flood forecast systems which can run in real-time with an accuracy that fits the purpose. In PEARL (<http://www.pearl-fp7.eu>), the municipality of Greve is an end-user, where the latest early warning systems are installed and evaluated. To know more about the interface, visit <http://greve.dhigroup.com>.

## 14 LIFE BELOW WATER



### Reduce marine pollution and increase sustainable use of the marine resources

Covering over 70% of the Earth's surface, marine waters can provide vital resources such as food and energy for a growing population. In the past 25 years, technological progress and fundamental marine understanding have opened up opportunities for sustainable exploitation of renewable resources such as energy (wind, tide and wave power) and aquaculture, as well as creating numerous jobs. Today, aquaculture products make up almost 10% of the world's protein requirements. With a current growth of 7-8% per year, aquaculture will play an increasing role in contributing to our future nutritional needs. Supported by advanced numerical tools, DHI's services enable aquaculture farmers and developers of renewable energy installations to select optimal production sites for sustainable and cost-efficient exploitation of marine resources, while leaving the lowest-possible environmental footprint. Forecast and decision-support tools are used to optimise farm operations.

## 15 LIFE ON LAND



### Conserve and restore inland freshwater ecosystems and reduce impacts of floods and droughts

During the last half of the 20th-century, coastal ecosystems worldwide have been under extensive anthropogenic and climate pressure due to nutrient enrichments, exploitation of coastal resources, overfishing, destruction of habitats, chemical pollution as well as increasing temperatures, changes in precipitation and changes in wind and storm-patterns. The result of these accumulated pressures is a widespread degradation of coastal ecosystems – some of which are irreversible or take decades to overcome. Setting specific and targeted actions to reduce eutrophication and restore lost habitats are key elements in managing coastal ecosystems. In Denmark, DHI has engaged in the developments of modelling tools to assess differentiated nutrient-reduction targets and to assess the impact of restoration of eelgrass meadows and re-establishment of stone-reefs – all measures to improve the health and robustness of the ecosystem.

## 16 PEACE AND JUSTICE



### Promote cooperation in international shared waters

DHI has developed the Nile Basin Decision Support System (NB DSS) for the Nile Basin Initiative comprising the nine riparian countries of the Nile River. The NB DSS is a comprehensive analytical framework for the analyses of water resources projects in the Nile Basin in a transparent and agreed manner. The key objectives of the NB DSS are to develop the water resources of the 3 million km<sup>2</sup> Nile river basin in a cooperative and equitable manner, to share socioeconomic benefits, and ultimately to promote regional peace and security.

## 17 PARTNERSHIPS FOR THE GOALS



### Our global partnership

We reaffirm our commitment to the implementation of sustainable development goals and through our global partnerships, we endeavour to continue to facilitate engagements that support the implementation of the goals.

DHI associates with global partners in water environments to mobilize and share knowledge, expertise and technology, to support the achievement of the sustainable development goals in all countries. We are appointed the collaborating centre for water and health by World Health Organization (WHO) and member of the World Water Council (WWC), among others. DHI hosts the UNEP-DHI Centre for Water and Environment, a United Nations Environment Programme centre of expertise that is dedicated to improve the management of freshwater resources from both the local and global level.





*Our company strategy,  
the DHI Compass, clearly  
supports our CSR initiatives.*

## ASPIRATIONS

We have developed a company strategy, the DHI Compass, which clearly supports our CSR initiatives. We will continue our efforts to advance our progress within our three CSR focus areas: Improving the environment, responsible business practices, and sharing of knowledge and technology. Being a global company, we see a significant potential in contributing to sustainable development and social responsibility.

We will fully support the 17 newly adopted UN Sustainable Development Goals. All of the goals involve water-related issues which are at the core of DHI's quest and activities.

# DHI THE EXPERT IN WATER ENVIRONMENTS

DHI are the first people you should call when you have a **tough challenge to solve in a water environment** – be it a river, a reservoir, an ocean, a coastline, within a city or a factory.

Our knowledge of water environments is second-to-none. It represents **50 years** of dedicated research and real-life experience from more than **140 countries**. We strive to **make this knowledge globally accessible to clients** and partners by channelling it through our local teams and unique software.

Our world is water. So whether you need to save water, share it fairly, improve its quality, quantify its impact or manage its flow, we can help. Our knowledge, combined with our team's expertise and the power of our technology, holds the key to unlocking the right solution.



## DHI OFFICES WORLDWIDE

Australia	Denmark (head office)	New Zealand	Spain
Austria	France	Norway	Sweden
Brazil	Germany	Peru	Turkey
Brunei	Hungary	Poland	United Kingdom
Bulgaria	India	Romania	USA
Canada	Indonesia	Singapore	Vietnam
China	Italy	Slovak Republic	
Czech Republic	Malaysia	South Africa	

For more information visit: [www.dhigroup.com](http://www.dhigroup.com)

The expert in **WATER ENVIRONMENTS**

