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# ENGINEERING A BETTER AND SUSTAINABLE WORLD



**THE GLOBAL GOALS**  
For Sustainable Development



Danish Association of  
Consulting Engineers  
FRI



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# CONTENT

<b>ENGINEERING A BETTER AND SUSTAINABLE WORLD</b>	<b>4</b>
<b>GOAL 1</b> – No poverty	<b>6</b>
<b>GOAL 2</b> – Zero hunger	<b>8</b>
<b>GOAL 3</b> – Good health and well-being	<b>10</b>
<b>GOAL 4</b> – Quality education	<b>12</b>
<b>GOAL 5</b> – Gender equality	<b>14</b>
<b>GOAL 6</b> – Clean water and sanitation	<b>16</b>
<b>GOAL 7</b> – Affordable and clean energy	<b>20</b>
<b>GOAL 8</b> – Decent work and economic growth	<b>24</b>
<b>GOAL 9</b> – Industry, innovation and infrastructure	<b>26</b>
<b>GOAL 10</b> – Reduced inequalities	<b>28</b>
<b>GOAL 11</b> – Sustainable cities and communities	<b>30</b>
<b>GOAL 12</b> – Responsible consumption and production	<b>32</b>
<b>GOAL 13</b> – Climate action	<b>34</b>
<b>GOAL 14</b> – Life below water	<b>38</b>
<b>GOAL 15</b> – Life on land	<b>40</b>
<b>GOAL 16</b> – Peace, justice and strong institutions	<b>42</b>
<b>GOAL 17</b> – Partnerships for the goals	<b>44</b>

# ENGINEERING A BETTER AND SUSTAINABLE WORLD

## THE CONTRIBUTION OF DANISH CONSULTING ENGINEERING COMPANIES TO THE SUSTAINABLE DEVELOPMENT GOALS (SDG'S)

On 1 January 2016, the 17 Sustainable Development Goals (SDGs), adopted in September 2015 at the UN summit, officially came into force. Over the next 15 years, with these new Goals that universally apply to all, countries will mobilise efforts to end all forms of poverty, fight inequalities, and tackle climate change while ensuring that no one is left behind. The new Goals are unique in that they call for action by all countries, poor, rich and middle-income, to promote prosperity while protecting the planet. Although the SDGs are new, international development aid is not a new thing for Danish consulting engineering companies. For decades, Danish consulting engineering companies have been significantly contributing to solving critical issues in developing countries. They have been providing intelligent engineering solutions for sustainable water and sanitation management to help ensure access to clean water and sanitation to everyone, clean tech for affordable, reliable and clean energy solutions, and have continuing global success in major road, watersupply and rail projects fostering innovation and resilient infrastructure.

Their ability to combine in-depth understanding of sustainable development, with the latest technologies to transfer, and a keen ability to empower people, provides life-changing innovations and robust infrastructure in recipient countries. This they provide by building long-term relationships and support in-country. The new 17 Sustainable Development Goals will only strengthen the commitment.

The 17 Sustainable Development Goals recognise that ending poverty must go hand-in-hand with strategies that build economic growth. They address a range of social needs, including education, health, social protection, and job opportunities while tackling climate change and environmental protection.

The effort required to end all forms of poverty, fight inequalities and tackle climate change necessitates the need for national, international and global partnerships. Such partnerships require the bringing together of governments, civil society, business and industry, and international financial institutions (IFIs).



Danish consulting engineering companies work globally, in partnership with IFIs, to address global issues in a local context. We provide services to IFIs that include world class design, regulatory and policy reform and environmental and social assessment across a range of sectors, including energy, climate, environment, urban development and transport. Furthermore, the provision of institutional strengthening and capacity building to national and local governments as well as public utilities is a core service that Danish consulting engineering companies place a particular emphasis upon, thus contributing to the sustainable development of numerous developing and least developed nations.

Working together with IFIs, Danish consulting engineering companies can make a significant contribution both directly and indirectly to the achievement of all the SDGs.

This book contains 39 examples of how Danish consulting engineering companies have made the visions of the SDGs into real projects on the ground, thereby making a difference to the world we live in. Enjoy!

Henrik Garver  
Managing director

The Danish Association  
of Consulting Engineers, FRI



## GOAL 1 – NO POVERTY

# END POVERTY IN ALL ITS FORMS EVERYWHERE

Eliminating world poverty in all its forms and dimensions by 2030 will require an enormous effort by governments, civil society and the private sector. Danish consulting engineering companies contribute to the eradication of poverty both indirectly and directly. Most of our provided services, from planning and implementing new infrastructure to provision of clean water and sanitation contribute indirectly to lift people out of poverty. More directly, Danish consulting engineering companies assist both national and local governments with capacity building, programme management and fund managing, related to the fight against poverty.



## PROJECT

### MUNICIPAL DEVELOPMENT PROGRAMME (PRODEM), MOZAMBIQUE

PRODEM is a contribution to urban poverty reduction, local governance development, and climate change mitigation in five northern provinces of Mozambique. The program is jointly financed by Danida, Sida, Irish Aid, the Swiss Development Cooperation and the Government of Mozambique. Over the past three years, a Technical Assistance Team provided by COWI has enhanced the capacity of elected leaders and technical staff to plan and implement small infrastructure projects and develop municipal plans in the areas of climate resilience, solid

waste management and municipal finance within a budget of 25 million USD. Men and women in vulnerable neighborhoods are mobilized and organized to participate in municipal planning and budgeting. The scope of work for the capacity development and technical assistance function includes: On-the-job hands-on training combined with more formalized training sessions as well as exchange visits, job swaps and twinning arrangements. COWI undertakes programme management, fund managing and capacity development services.

COUNTRY      COMPANY  
**MOZAMBIQUE**    **COWI A/S**

#### SECONDARY GOALS





## GOAL 2 – ZERO HUNGER

# END HUNGER, ACHIEVE FOOD SECURITY AND IMPROVED NUTRITION AND PROMOTE SUSTAINABLE AGRICULTURE

Ending hunger and all forms of malnutrition by 2030 is a tough global challenge. Approximately 10 percent of the world population are estimated to be chronically undernourished and about 90 million children under the age of five are dangerously underweight. Fulfilment of the goal calls for action on various agendas from establishing sustainable food production systems and increased agricultural productivity to increased investment in rural infrastructure, agricultural research and extension services, technology development, etc. Danish consulting engineering companies contribute to the fight against hunger by providing technical assistance and capacity building assistance to governments and local authorities.



## PROJECT

### TARGETING FOOD SECURITY IN KENYA

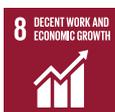
From 2012 to 2017, NIRAS implemented a major agricultural sector development programme in Kenya, aiming at improving livelihood and food security in the rural areas, and at the same time contributing to the national economy. NIRAS provided technical assistance at national level and to Kenya's 47 counties by analyzing market requirements of more than 100 key-value chains, and

subsequently recommending and initiating interventions targeting policy constraints as well as bottlenecks in production, processing and marketing. Very promising results were obtained by bringing key-stakeholders together in value-chain groups and by creating platforms for interactions between the farmers, their purchasers and distributors.

COUNTRY  
**KENYA**

COMPANY  
**NIRAS A/S**

### SECONDARY GOALS





**3 GOOD HEALTH AND WELL-BEING**



## **GOAL 3 – GOOD HEALTH AND WELL-BEING**

# **ENSURE HEALTHY LIVES AND PROMOTE WELL-BEING FOR ALL AT ALL AGES**

Ensuring healthy lives and promoting well-being for all is essential to sustainable development. Access to good health and well-being is a human right. Danish consulting engineers contributes to good health and well-being in numerous ways – directly as well as indirectly. For instance, we work with and assist local governments with capacity building to ensure that relevant policies and guidelines are in place to mitigate the impact of infrastructural development upon human beings and health. We prevent and reduces deadly diseases and epidemics from spreading when assisting governments and local authorities to implement water and sanitation programmes. Finally, we assist relevant authorities with the implementation of international treaties and conventions, which relate to health and well-being.



**PROJECT**

**HYGIENE AND SANITATION – THE DANISH AND SWEDISH SUPPORT PROGRAMME TO MALI**

Despite determined global progress, sub-Saharan Africa and Southern Asia see an increasing proportion of child deaths. Four out of every five deaths of children under age five occur in these regions. Ramboll, in partnership with Danida, has provided technical assistance to national and regional institutions in Mali with regard to the provision of improvements in the quality of potable water, sanitation and hygiene. The tasks carried out by Ramboll cover a wide spectrum of activities, all contributing to the overall objective of much improved sanitation and hygiene thus ensuring improvements in the overall well-being and health of those living in the specific regions.



**PROJECT**

**MONITORING AND VERIFICATION CONSULTANT OF KAFUBU SUSTAINABLE WATER IMPROVEMENT PROJECT**

The project includes rehabilitation of drinking water and sewerage treatment facilities in the three towns in the Ndola Region. The existing transmission and distribution network will be rehabilitated and extensions to new areas will be provided. The overall project objectives are to contribute to improvement of the environment and public health. In addition, project sustainability and energy efficiency have high priority. The scope of the Sweco assignment is to monitor that the conditions for the loan are respected; and advise on public finance management procedures.

**COUNTRY**  
**MALI**

**COMPANY**  
**RAMBØLL DANMARK A/S**

**SECONDARY GOAL**

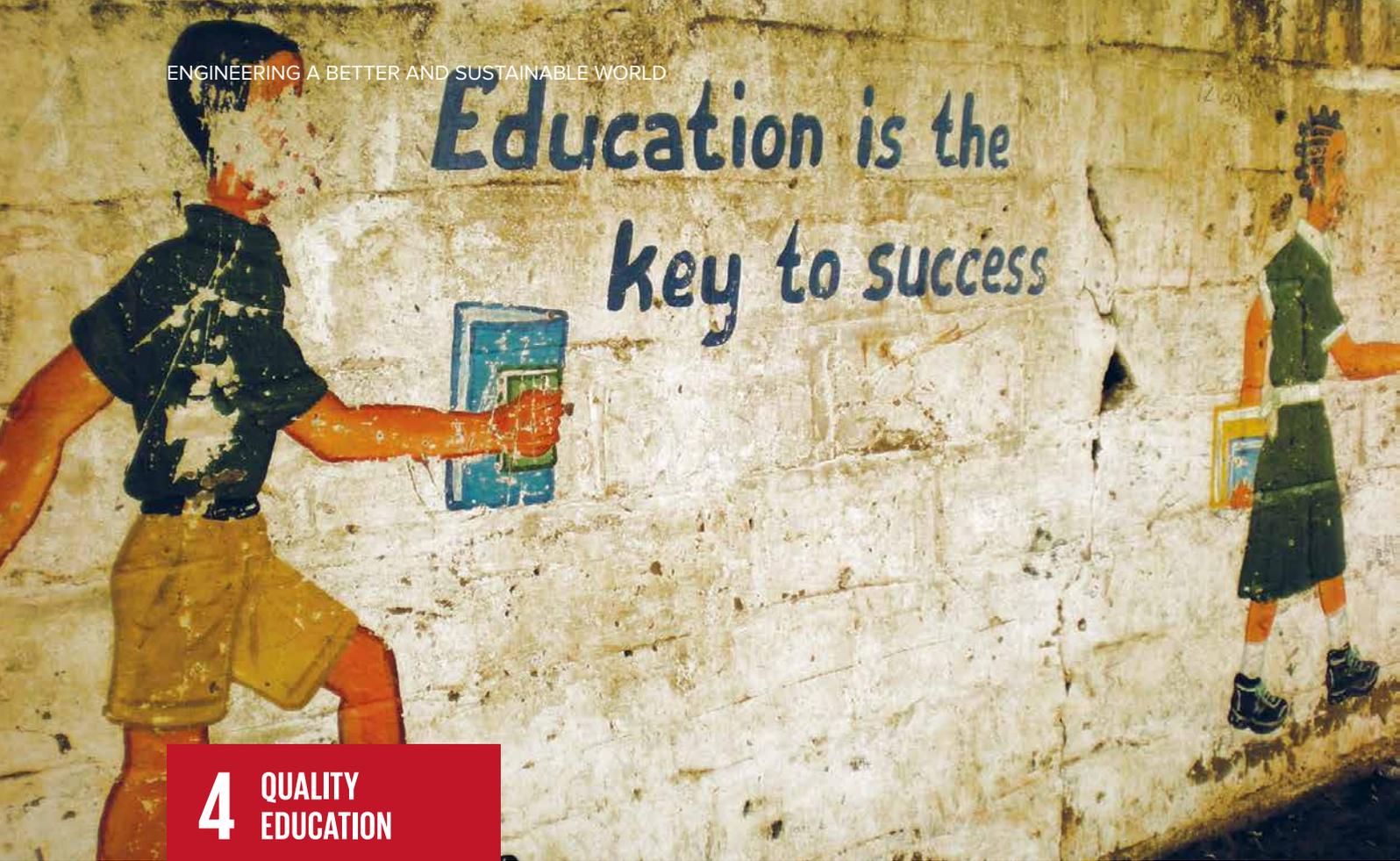


**COUNTRY**  
**ZAMBIA**

**COMPANY**  
**SWECO DANMARK A/S**

**SECONDARY GOALS**





### GOAL 4 – QUALITY EDUCATION

# ENSURE INCLUSIVE AND EQUITABLE QUALITY EDUCATION AND PROMOTE LIFELONG LEARNING OPPORTUNITIES FOR ALL

Achieving quality education for all won't come easy and will require increasing efforts. Education is one of the most powerful and proven accelerators for sustainable development and will therefore contribute to the fulfilment of the other 16 SDG's. Danish consulting engineering companies contribute to goal number 4, for instance when assisting national and local authorities with capacity building and implementation of employment policies, etc.



**PROJECT**

**PROJECT: EDUCATION TO EMPLOYMENT (E2E), SERBIA**

Education to Employment (E2E) is a partnership programme between the Swiss and Serbian governments, aiming at making the Serbian youth ready and better equipped to enter the Serbian labor market. NIRAS is implementing the E2E by combining modernization of national and local youth employment policies with course development and teaching of the young participants in concrete skill that has been identified as being in high demand. Together with its national and local government partners, E2E also identifies cooperation models between the state administration, education institutions, private sector companies and NGOs for sustainable and inclusive youth employment, supplementing the formal education system and addressing the real market needs.

**PROJECT**

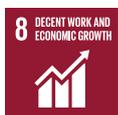
**SECONDARY EDUCATION SECTOR INVESTMENT PROGRAMME (SESIP) – PROGRAM MANAGEMENT CONSULTANCY (PMC)**

The SESIP programme is a 10-year programme which uses disbursement-linked indicators (DLIs) to allocate funds according to the results achieved. The PMC project is part of Tranche-1, the first of four phases under SESIP. The SESIP programme contributes to reducing poverty in Bangladesh by establishing a more relevant secondary education in terms of quality, efficiency and equity through developing the secondary education sector as a whole.

**COUNTRY**  
**SERBIA**

**COMPANY**  
**NIRAS A/S**

**SECONDARY GOAL**



**COUNTRY**  
**BANGLADESH**

**COMPANY**  
**SWECO DANMARK A/S**

**SECONDARY GOALS**





**5** GENDER  
EQUALITY



## GOAL 5 – GENDER EQUALITY

# ACHIEVE GENDER EQUALITY AND EMPOWER ALL WOMEN AND GIRLS

Providing women and girls with equal access to education, healthcare, decent work, and representation in political and economic decision-making processes will fuel sustainable economies and benefit societies and humanity at large. In our approach, Danish consulting engineers seek to ensure that gender equality remain central to all projects that we implement in partnership with IFIs. More specifically, we work with IFIs to achieve gender equality and empower all women and girls by mainstreaming gender in all projects and programmes, understanding and targeting gender priorities and by developing gender action plans that identify barriers to gender parity with clear recommendations and actions.



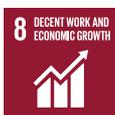
**PROJECT**

**GENDER ASSESSMENT AND ACTION PLANNING – COMPLYING WITH INTERNATIONAL POLICY REQUIREMENTS**

As of 2014, 143 countries have guaranteed equality between men and women in their constitutions, but 52 have yet to take this step. Ramboll works globally with leading IFIs to ensure that all relevant performance standards and requirements with regard to gender are being adhered to. Tasks include gender compliance checks, but also we carry out gender assessments and prepare related gender action plans. Providing women and girls with equal access to education, healthcare, decent work, and representation in political and economic decision-making processes will fuel sustainable economies and benefit societies and humanity at large.

**COMPANY**  
**RAMBØLL DANMARK A/S**

**SECONDARY GOALS**



**PROJECT**

**GENDER ASSESSMENT OF CLEAN TECHNOLOGY FUND (CTF) PROJECTS IN KAZAKHSTAN**

The Strategic Gender Initiative (SGI) of the EBRD supports the promotion of equality of opportunity through its projects, where applicable, including the promotion of equal opportunities for men and women in the workplace. The SGI commits the EBRD to address gender issues and to implement specific actions in its investment and technical co-operation projects to increase the positive impact of the Bank on gender equality and opportunities. The main objective of the Sweco assignment was to implement at least 3 project-level gender assessments in order to help shape the actual and future projects/programmes (frameworks) to be implemented by EBRD, within the Municipal sector in Kazakhstan. An assessment of the impact the CTF financing had and can have on ensuring that gender equality and equal opportunities are fully taken into account in the design and implementation of these projects was undertaken.

**COUNTRY**                      **COMPANY**  
**KAZAKHSTAN**                      **SWECO DANMARK A/S**

**SECONDARY GOAL**





## GOAL 6 – CLEAN WATER AND SANITATION

# ENSURE AVAILABILITY AND SUSTAINABLE MANAGEMENT OF WATER AND SANITATION FOR ALL

Access to clean water and sanitation and comprehensive freshwater management are essential to life, health, environment and economic prosperity in the developing countries. With more than 2 billion people globally living in countries with excess water stress and some 2.4 billion people with inadequate or no access to sanitation, SDG Goal No. 6 is undoubtedly one of the most important ones. Danish consulting engineers are globally known and acknowledged for our knowledge and results within freshwater management, water supply and sanitation. We design water and sanitation facilities, develop education programmes for hygiene and sanitation and water usage and provide capacity building to governments and local authorities in water and sanitation.



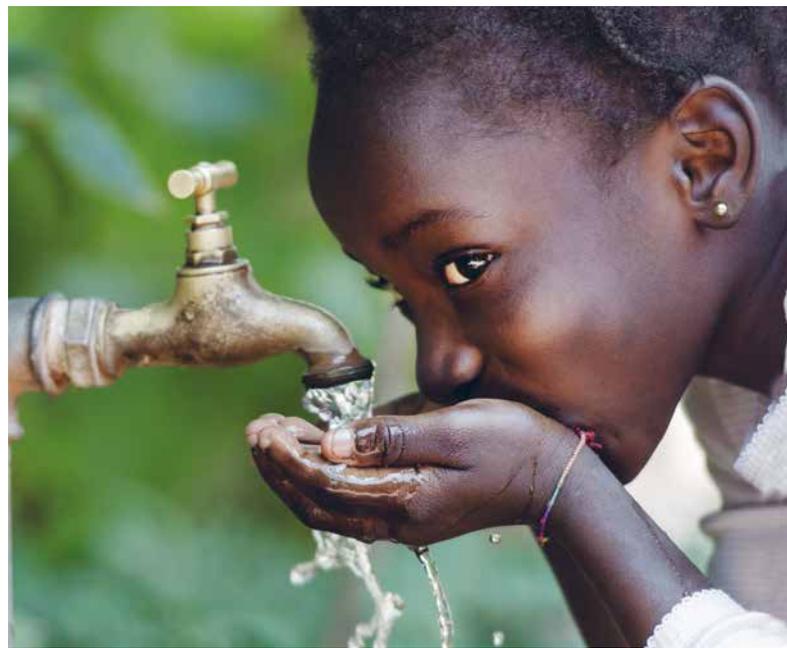
**PROJECT**

**IMPROVING GLOBAL CAPACITY ON SUSTAINABLE URBAN WATER AND SANITATION**

NIRAS is implementing the International Training Programme (ITP) called “Sustainable Urban Water and Sanitation (SUWAS) - Integrated Processes” targeted towards 10 countries in Africa and Asia (Uganda, Rwanda, Zambia, Kenya, Tanzania, Myanmar, Bangladesh, Nepal, Laos and Cambodia). The SUWAS programme has four dimensions - the first three focusing on overall sustainable framework for the city and organizational analyses, while the fourth is focusing on the organizational change with the purpose to strengthen the organization’s ability to support water, sanitation and hygiene activities and services. At the end of each programme, the participants have gained knowledge about integrated approaches, principles, methods and tools for planning and implementation of sustainable urban water and sanitation systems.

**COMPANY**  
**NIRAS A/S**

**SECONDARY GOALS**



**PROJECT**

**WATER RESOURCES MANAGEMENT IN CONFLICT-STRICKEN SOUTH SUDAN**

The programme for the “Water Sector in Eastern Equatorial State” aims at improving Integrated Water Resources Management (IWRM) to ensure both productive use of water, safe water and improved sanitation in rural areas. The project gives access to improved drinking water (135,200 people), improved sanitation (15,800 people) and improved river basin management (25,600 people). Project related infrastructure such as improved irrigation and water harvesting also increases water use efficiency and addresses water scarcity. Due to the escalation of the civil conflict in 2016, the project partly turned from a long-term development project into emergency relief. The project had to extend its scope by addressing the urgent demand for food security and related livelihoods.

**COUNTRY**      **COMPANY**  
**SOUTH SUDAN**   **NIRAS A/S**

**SECONDARY GOAL**





**PROJECT**

**SAFE ACCESS TO SANITATION FOR NAIROBI HOUSEHOLDS, KENYA**

The population of Nairobi, including surrounding satellite towns, is estimated to increase from 5 to about 17 million in 2040. The existing sewerage system only covers a minor part of the population and is not fully functioning. The remaining part of the population relies on on-site sanitation where people dispose of wastewater in septic tanks, soakage pits, into open drains, etc. In 2016, the Athi Water Services Board asked COWI to formulate an integrated sanitation management plan for Nairobi and selected satellite towns. This plan proposes appropriate sanitation solutions that meets the increased population pressures and other development challenges. The plan also identifies institutional framework to manage the sanitation services provided by the water and sanitation companies.

**COUNTRY**  
**KENYA**

**COMPANY**  
**COWI A/S**

**SECONDARY GOAL**



**PROJECT**

**TECHNICAL ASSISTANCE FOR A WATER AND SANITATION PROGRAMME**

Since the 1990s, COWI has been a key player in supporting Benin's water sector programme and leads in 2017 the technical assistance of the OmiDelta programme. The objective is to ensure the availability and sustainable management of water and sanitation for all by 2030. Over a four-year period, the OmiDelta programme will invest 8 million euros in technical assistance to reduce poverty and improve socio-economic development linked to governance, health improvement, life expectancy, student learning, gender equality, etc.

**COUNTRY**  
**BENIN**

**COMPANY**  
**COWI A/S**

**SECONDARY GOALS**





**PROJECT**

**JAFFNA AND KILINCHCHI WATER SUPPLY AND SANITATION PROJECT**

The objective of the project is to improve health and human development in urban and Pradesiya Saba areas of Jaffna and Kilinochchi. The outputs provided by Sweco are improved water supply, sewerage and sanitation infrastructure; strengthening of Jaffna water resource management. The outcomes of the project are improved water supply and sanitation infrastructure for residents and returning internally displaced persons in the targeted urban and Pradesiya saba areas; improved protection and management of Jaffna Peninsula’s water resources. This particular project will contribute to the sustainable provision of urban water supply services by rehabilitating and strengthening the water treatment, transmission and distribution system.

**COUNTRY**  
**PAKISTAN**

**COMPANY**  
**SWECO DANMARK A/S**

**SECONDARY GOALS**



**PROJECT**

**PROJECT MANAGEMENT SERVICES TO PORT HARCOURT WATER AUTHORITY**

More than 2 billion people globally are living in countries with excess water stress. Ramboll is currently providing a range of services to the Port Harcourt Water Corporation in Nigeria including organisational reform, institutional strengthening and capacity building, performance improvement programming as well as WASH and ESIA. Currently only 2 percent of the population of Port Harcourt has access to potable water and sanitation. Upon project completion it is anticipated that the figure will be 20 percent.

**COUNTRY**  
**NIGERIA**

**COMPANY**  
**RAMBØLL DANMARK A/S**

**SECONDARY GOAL**



**7 AFFORDABLE AND  
CLEAN ENERGY**



## **GOAL 7 – AFFORDABLE AND CLEAN ENERGY**

# **ENSURE ACCESS TO AFFORDABLE, RELIABLE, SUSTAINABLE AND MODERN ENERGY FOR ALL**

Energy is essential to keep life, production, growth and development going. However, being the main contributor to climate change, energy also constitute one of the biggest challenges that the world and humanity face today. This calls for new green and sustainable energy solutions, behavioural change, not to mention new policies, on global and local scales. Danish consulting engineers play an active role in this necessary turnaround. For instance, when we work with national governments to enhance international cooperation to facilitate policy dialogue and access to shared sources of energy, when we design and implement stand-alone energy systems, provide technical assistance to local authorities, assist governments with energy efficiency strategies, or when we design integrated renewable energy solutions, including wind, solar, biomass and hydro.



**PROJECT**

**RENEWABLE ENERGY SYSTEMS, KARIMUNJAWA ISLANDS, INDONESIA**

Design and implementation of stand-alone energy systems for the three small and remote islands of Parang, Nyamuk and Genting off the north coast of Java. Solar power will cover 95-100 percent of the consumption of the villagers. The 2,000 islanders will also benefit from integrated diesel generators and refurbishment of distribution cables for 24/7 provision of power – something which has not been common in the past. The project is part of COWI’s role to assist the Danish Embassy in Jakarta with the implementation of environmentally friendly, sustainable energy pilot projects in Central Java.

**PROJECT**

**ENERGY TO ZAMBIA**

In Zambia, the government has launched several initiatives to develop renewable energy production and enhance energy efficiency. NTU is providing technical assistance to the Rural Electrification Authority of Zambia in the development of demonstration projects for renewable energy and energy efficiency. The project will help increase access to clean, reliable and affordable energy, and promote renewable energy production and energy efficiency in Zambia. NTU’s support is targeted to fostering the government’s rural electrification efforts, as well as the construction of resilient infrastructure in the energy sector, promoting inclusive and sustainable industrialization, and addressing energy poverty in rural areas. When the project is over, 1 million people in Zambia’s rural areas will have access to power.

**COUNTRY**  
**INDONESIA**

**COMPANY**  
**COWI A/S**

**COUNTRY**  
**ZAMBIA**

**COMPANY**  
**NTU INTERNATIONAL A/S**

**SECONDARY GOAL**



**SECONDARY GOALS**





Photo: ABB

**PROJECT**

**DISTRICT HEATING SYSTEM**

The new district heating system in Shangri-La sets new standards for energy-efficient and emission-free heat production in China. It is based on hydroelectric power and heat pumps that provide great environmental benefits for the city, which has previously been plagued by atmospheric pollution due to the use of wood and coal burning stoves for heating. The new system increases energy production by 200-300 percent and can supply heat to about 100,000 inhabitants. The project has already attracted a great level of interest from surrounding cities in China, including Beijing.



**PROJECT**

**ENERGY AND ENVIRONMENT PARTNERSHIP WITH THE MEKONG REGION**

The objective is to improve livelihoods and climate resilience by reducing the vulnerability of local populations to climate change and natural disasters in Cambodia, Lao PDR, Myanmar, Thailand and Vietnam. Phase 1 focused on stimulating the clean energy market through business development, capacity building and improved policy frameworks, while phase 2 integrates a results-based financing mechanism with a human rights-based approach to promote clean energy market deployment. The funding is focused on larger size projects to achieve sustainable impacts, targeting both project developers from the private sector as well as public-private partnerships and public sector entities.

COUNTRY  
**CHINA**

COMPANY  
**COWI A/S**

SECONDARY GOAL



COMPANY  
**NIRAS A/S**

SECONDARY GOALS





**PROJECT**

**NATIONAL ENERGY EFFICIENCY STRATEGY – GOVERNMENT OF SOUTH AFRICA**

Supporting the Department of Energy in South Africa in developing their post-2015 National Energy Efficiency Strategy, the vision was to embrace the concept of energy efficiency, creating socially inclusive and environmentally sustainable economic growth, and boosting job creation while leading technological innovation across the region. The strategy aims to contribute towards reducing the final energy consumption across the economy by 29 percent by 2030. The strategy also recommends the introduction of various incentives and financing schemes that will encourage the uptake of energy efficiency by stakeholders within the key sectors, and the need for an enabling framework rooted in monitoring compliance, enforcement and periodic evaluation of progress.

COUNTRY      COMPANY  
**SOUTH AFRICA    DEM**

**SECONDARY GOALS**



**PROJECT**

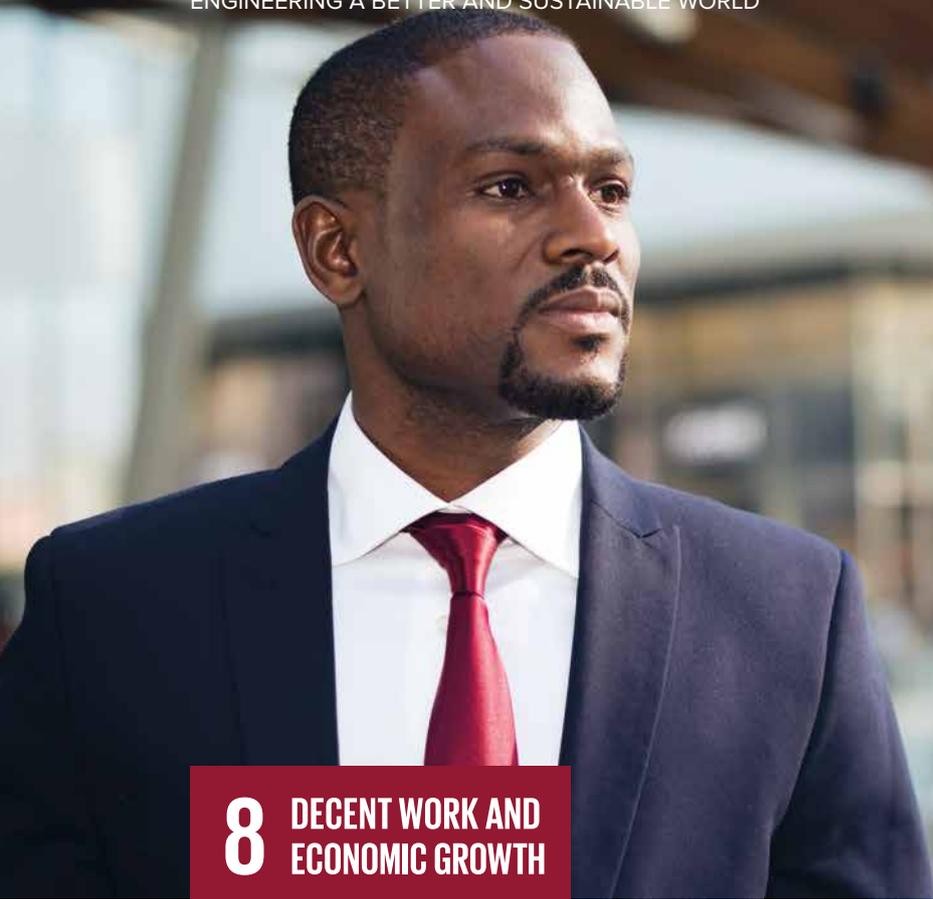
**ACP-EU ENERGY FACILITY MONITORING – EUROPEAN COMMISSION**

DEM performs energy facility monitoring in order to help ensure that people in rural and peri-urban areas in African, Caribbean and Pacific (ACP) countries can improve their access to affordable and sustainable energy services. Performing Energy Facility monitoring also contributes to an increase in global coherence, efficiency and visibility for projects which are being carried out, as well as ensuring verification of implementation and results that contribute to sustainable development. Information and knowledge sharing is made possible through a website and a database, which can generate automatic scorecards, graphics, tables and maps at different levels (project, national, regional or global level) based on data.

COMPANY  
**DEM**

**SECONDARY GOAL**





**8 DECENT WORK AND ECONOMIC GROWTH**



## **GOAL 8 – DECENT WORK AND ECONOMIC GROWTH**

### **PROMOTE SUSTAINED, INCLUSIVE AND SUSTAINABLE ECONOMIC GROWTH, FULL AND PRODUCTIVE EMPLOYMENT, AND DECENT WORK FOR ALL**

Unemployment and low wages are significant global challenges. Around half the world's population lives on the equivalent of about US\$ 2 and having a job doesn't guarantee the ability to escape that situation. It requires sustainable economic growth and conditions that allow people to have quality jobs that stimulate the economy while not harming the environment. Danish consulting engineers contributes to economic growth, productive employment and decent work when assisting authorities with plans to address resource efficiency in consumption and production and when working with IFIs with a specific focus upon initiatives to boost economic development and job creation.



**PROJECT**

**DANIDA FELLOWSHIP PROGRAMME – SUSTAINING DEVELOPMENT THROUGH RESEARCH AND LEARNING**

Global unemployment increased from 170 million in 2007 to nearly 202 million in 2012, of which about 75 million are young adults. Ramboll works closely with the Danish Agency for International Development (Danida) to provide training and guidance to least developed and developing countries via the hosting of training programmes. The interdisciplinary courses are usually three weeks in duration and cover topics such as accounting and financial reporting, procurement, anti-corruption and decentralization decision making. The focus of Ramboll’s input is to develop the capacity of the work force of public institutions contributing to economic development in the given countries.

**COMPANY**  
**RAMBØLL DANMARK A/S**

**SECONDARY GOALS**



**PROJECT**

**TECHNICAL ASSISTANCE TO INTEGRATED & SUSTAINABLE COMMUNITY DEVELOPMENT**

The European Investment Bank/EU funded Technical Assistance to Integrated & Sustainable Community Development Programme are, through the Egyptian Social Fund for Development (SFD), supporting urban development in disadvantaged urban areas in the form of community development projects managed by local authorities, water and sanitation companies, local NGOs and Community Development Associations. Sweco is contributing to the improvement in the quality of shelter and more general enhancement in the living conditions and the creation of employment opportunities for the urban poor. The project period is 2015-2018.

**COUNTRY**                      **COMPANY**  
**EGYPT**                              **SWECO DANMARK A/S**

**SECONDARY GOALS**





**9** INDUSTRY, INNOVATION  
AND INFRASTRUCTURE



## GOAL 9 – INDUSTRY, INNOVATION AND INFRASTRUCTURE

# BUILD RESILIENT INFRASTRUCTURE, PROMOTE INCLUSIVE AND SUSTAINABLE INDUSTRIALIZATION AND FOSTER INNOVATION

Insufficient infrastructure constitute a major challenge in many developing countries. A well-developed infrastructure is key to industrialization, market access, job creation, information, education and training. Danish consulting engineers work with both national and local governments to develop quality, reliable and sustainable railways, harbors, roads, bridges, etc., to support economic development and human well-being. Danish consulting engineers also assist both national and local governments with infrastructure related capacity building, for instance addressing road maintenance and road safety.



**PROJECT**

**NEW STANDARD-GAUGE RAILWAY FROM DAR ES SALAAM TO MOROGORO**

For the first time in over 50 years, Tanzania’s transnational railway is being modernised. COWI has designed more than 800 km and is now responsible for the design of a 207 km section running from Dar es Salaam to Morogoro. The modernisation is a valuable contribution to Tanzania’s future development to meet an increasing demand for the transportation of passengers and improve the domestic supply network. The new railway will increase the speed for the passenger trains from 30-40 km/h today to 160 km/h and allow efficient transport of goods not only in Tanzania but also to neighbouring countries. The line is planned to handle 13 million tons of goods (today around 300,000 tons) and 1.1 million passengers (today around 0.5 million).



**PROJECT**

**MOZAMBIQUE – ROAD MAINTENANCE TRAINING**

In Mozambique, NTU provided road industry training for local SMEs. The purpose was to enable local SMEs to bid on and handle road sector projects in the future, and thereby eliminate the need for foreign contractors. NTU designed a training programme focused on procurement and the theoretical and practical aspects of road development and road maintenance. NTU’s team also designed future training programmes targeting road development in rural areas, as well as programmes designed especially for the training of new trainers. By providing capacity building to local stakeholders and thereby enabling them to build and maintain road infrastructure, this project was a crucial step towards combating poverty in rural areas of Mozambique.

COUNTRY  
**TANZANIA**

COMPANY  
**COWI A/S**

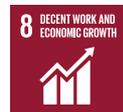
SECONDARY GOAL



COUNTRY  
**MOZAMBIQUE**

COMPANY  
**NTU INTERNATIONAL A/S**

SECONDARY GOALS





## GOAL 10 – REDUCED INEQUALITIES

# REDUCE INEQUALITY WITHIN AND AMONG COUNTRIES

Reducing inequality within and among countries is an issue that calls for global solutions. Today, the richest 10 percent earns around 40 percent of total global income. Fighting income inequality is one of the few sustainable development goals where Danish consulting engineering companies mostly contribute indirectly, with few exceptions, such as strengthening land rights for some of the poorest in the world.



**PROJECT**

**STRENGTHENING LAND RIGHTS IN UPLAND COMMUNITIES IN LAOS**

The majority of communities in rural upland areas of Lao PDR belongs to ethnic minority groups in areas where competing interests have put pressure on land resources. The lack of security to land makes the groups extra vulnerable and marginalized. Based on studies of current rotational land use systems, the Agrobiodiversity Initiative (TABI, 2009-2020) supports the communities with

developing and implementing participatory land use plans. So far the plans and maps cover more than 800,000 ha in 280 villages. The results are very encouraging and has given the communities an increased sense of land security, entailing both significant decrease in incidents caused by encroachments by outsiders as well as less forest fires.

COUNTRY  
**LAOS**

COMPANY  
**NIRAS A/S**

SECONDARY GOALS





**11 SUSTAINABLE CITIES AND COMMUNITIES**



## **GOAL 11 – SUSTAINABLE CITIES AND COMMUNITIES**

# **MAKE CITIES AND HUMAN SETTLEMENTS INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE**

By 2030, almost 60 percent of the world's population will live in urban areas. Common urban challenges, as a result, include congestion, lack of funds to provide basic services, shortage of adequate housing, pollution, and declining infrastructure. Danish consulting engineers work closely with national governments and city administrations to develop solutions that will match the specific needs of a city whilst simultaneously strengthening the capacity of city planners and administrators to control urbanisation. More specifically, Danish consulting engineers for instance assist national governments and city administrations to build sustainable and climate resilient buildings utilizing local materials, we help create carbon-neutral cities and we mitigate the environmental impacts, e.g. air pollution, waste management, of growing cities and expanding infrastructure.



**PROJECT**

**LOW CARBON AREA IN HAIYAN CITY, CHINA – HAIYAN URBAN INVESTMENT GROUP**

The objective for the Danish Low Carbon Street is to create a carbon-neutral city that through technological empowerment, social awareness, economic insight and environmental action is sustainable in every way. The design plan takes existing buildings into account, and new buildings are planned to secure optimal natural daylight internally, and sunlight for solar PV cells and solar water heating on buildings externally. Low carbon emissions are secured for the local water supply, drainage system, waste treatment system and local transportation within the area. Also, a green line provides a walk or bike riding area that perpetuates the story of sustainability by looping around the new energy facility and sustainability center. The planning of the area follows a Sustainability Strategy, which ensures that all initiatives work towards a smart city with low carbon emissions.

**COUNTRY**  
**CHINA**

**COMPANY**  
**DEM**

**SECONDARY GOALS**



**PROJECT**

**SUSTAINABLE URBANIZATION – EUROPE – CHINA ECO-CITIES LINK (EC LINK)**

This project provides technical assistance to the Chinese Ministry of Housing and Urban-Rural Development (MoHURD). Thereby assisting Chinese cities in adopting energy and resource efficient ecological solutions by sharing experiences on sustainable urbanisation and other relevant policies between Europe and China. Outputs include enhanced networking between European and Chinese cities and advising and assisting Chinese municipalities on urban ecological/low carbon planning and management; support to the Ministry in preparing low carbon eco-city management tool boxes for local governments; support to one “Europe-China pilot low carbon eco-city”; improved exchange of information and knowledge sharing between municipalities in China, and between Chinese and European cities; strengthened capacities of municipalities to plan, identify, implement and monitor low carbon and ecological solutions; improve municipalities’ potential to finance eco/low carbon-solutions, including knowledge on innovative financial schemes.

**COUNTRY**  
**CHINA**

**COMPANY**  
**SWECO DANMARK A/S**

**SECONDARY GOALS**





**12** RESPONSIBLE  
CONSUMPTION  
AND PRODUCTION



## GOAL 12 – RESPONSIBLE CONSUMPTION AND PRODUCTION

# ENSURE SUSTAINABLE CONSUMPTION AND PRODUCTION PATTERNS

Sustainable growth and development require minimization of the natural resources and toxic materials used and of the waste and pollutants generated throughout the entire production and consumption process. We need to do more with less, pollute less, and we need to re- and upcycle what we yesterday called waste. Danish consulting engineers work with national and local governments, producers, consumers, business organisations and the general public to promote sustainable management and efficient use of natural resources, including food, water and energy consumption. For instance, Danish consulting engineers prepare national and local waste management strategies and plans and develop training programmes and strengthening capacity of governmental organisations in all aspects of responsible consumption.



**PROJECT**

**SOLID WASTE MANAGEMENT, EGYPT**

Global demand for waste management is increasing due to new legal requirements and urbanisation. In Egypt, the authorities have decided to step up efforts to stop the discarding of plastic, builders' rubble and other waste on streets and highways, in the interest of health, the economy and the environment. Two densely populated regions, Kafr El Sheik and Gharbia, have been selected as pilots for a comprehensive waste management effort in the country. The project started in 2016 and will run over five years with the aim of collecting and processing around 5,000 tons of waste a day. COWI is advisor to the client KfW Bankengruppe and will be responsible for the development of strategic masterplans, design and tender documents, monitoring and evaluation etc.

**COUNTRY**  
**EGYPT**

**COMPANY**  
**COWI A/S**

**SECONDARY GOALS**



**PROJECT**

**HUGE UNTAPPED SDG POTENTIAL IN SUSTAINABLE PROCUREMENT**

About 80 percent of greenhouse gas emissions from a municipality comes from the procurement of services and goods, so with the right social and environmental criteria towards the supplier in the procurement process there is a huge potential for improvements. By holding a four-year contract with the Danish Environmental Protection Agency, NIRAS is the manager of the Danish Secretariat for Green Procurement, which includes the development of tools and calculations methods for public and private procurement consultants, enabling them to calculate and choose the most sustainable products. The Secretariat supports partnerships where 12 organizations, a.o. the municipalities of Copenhagen and Aarhus, voluntarily develop ambitious sustainable procurement goals. The partnerships work with market maturation that provides financial basis for sustainable product and service innovation, not only in Denmark, but internationally including in the middle-income developing countries.

**COMPANY**  
**NIRAS A/S**

**SECONDARY GOALS**

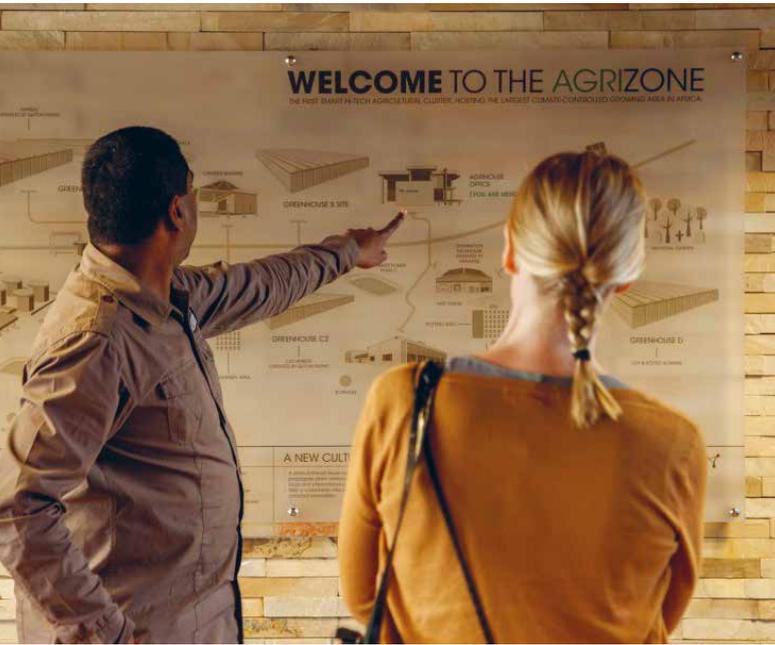




## GOAL 13 – CLIMATE ACTION

# TAKE URGENT ACTION TO COMBAT CLIMATE CHANGE AND ITS IMPACTS

Climate change is now affecting every country on every continent, and mitigating climate change and its impacts will require global commitment, enormous resources and innovative ideas and processes. Danish consulting engineers contribute to the fight against climate change when working with national and local governments to adapt to and mitigate the significant impacts of climate change, including changing weather patterns, rising sea levels and extreme weather events. We work with national and local governments to strengthen resilience and adaptive capacity to climate-related hazards and natural disasters, to integrate climate change measures into national policies, strategies and planning, and to institutional strengthening and capacity building on climate adaptation, mitigation and impact reduction, etc.



**PROJECT**

**CLIMATE RESILIENCE TO PAPUA NEW GUINEA**

With 85 percent of Papua New Guinea’s 7 million people relying on agriculture, the hazards caused by climate changes are severely impacting peoples’ livelihood. NTU’s team is providing a range of services, including technical assistance, capacity building and climate impact assessments, to help determine best-case practice for climate proofing the country’s rural bridges and coastal assets. In the provinces of Bougainvillea, East New Britain, Manus, Milne Bay and Morobe Provinces, the vast deterioration of the coastal assets is currently affecting roughly 13,000 households. In order to ensure their future safety, climate resilient solutions will have to be applied along the coast. NTU’s team is designing and implementing appropriate engineering standards to accommodate the impact of climate change.

**PROJECT**

**CLEAN DEVELOPMENT MECHANISM (CDM) PROGRAM – DANISH ENERGY AGENCY, MINISTRY OF CLIMATE AND ENERGY**

The Danish Clean Development Mechanism (CDM) program in Malaysia has provided an important incentive for project owners to develop green and sustainable climate projects. Once projects were designated, DEM assisted the Danish Embassy throughout their negotiations regarding their Letter of Intent (LoI) and Emissions Reduction Purchase Agreement (ERPA) as well as participating in monitoring on-going CDM projects generating Certified Emission Reductions (CERs) for Denmark. For the Danish Embassy in Malaysia, DEM provided relevant technical advice on climate change, including information on market trends, methodology, developments, etc. that would contribute to triple bottom line sustainability with relation to people, planet and profit.

**COUNTRY**  
**PAPUA NEW GUINEA**

**COMPANY**  
**NTU INTERNATIONAL A/S**

**SECONDARY GOALS**



**COUNTRY**  
**MALAYSIA**

**COMPANY**  
**DEM**

**SECONDARY GOALS**





**PROJECT**

**PROFESSIONALIZING CORPORATE SUSTAINABILITY GOVERNANCE FOR NOVO NORDISK**

NIRAS has developed an EP&L (Environmental Profit & Loss account) and corporate carbon account for Novo Nordisk and assessed the company’s dependency on environmental impacts such as greenhouse gasses, air polluting particulates and water consumption. Consequently, Novo Nordisk revised its strategy and is now putting equal emphasis on tackling environmental challenges at key suppliers and on optimizing environ-

mental opportunities related to own operations. Specific actions initiated, based on the account, ranges from installation of renewable energy, conversion to less pollutions and more efficient technologies, improvement of waste management and take-back schemes as well as implementation of new circular business models. The EP&L methodology is in high demand, also in developing countries.

**COMPANY**  
**NIRAS A/S**

**SECONDARY GOALS**





**PROJECT**

**FINANCING LOW CARBON, CLIMATE RESILIENT INFRASTRUCTURE IN ASIA AND THE PACIFIC**

Ramboll has been working with the Asian Development Bank to develop a methodology to predict climate impacts on urban infrastructure as well as predict the carbon profiles of cities. Ramboll’s approach has put an emphasis upon the use of an “archetype city” with the specific cities being Tbilisi, Ulaanbaatar, Ho Chi Minh City, Suva, Dhaka, and Mandalay. For each of the cities, infrastructure and climate vulnerability have been assessed and investment needs prioritised.

**COMPANY**

**RAMBØLL DANMARK A/S**

**SECONDARY GOALS**



**PROJECT**

**CONSULTING SERVICES FOR CLIMATE RESILIENT ROAD PLANNING, ASSET MANAGEMENT SUPPORT AND CAPACITY BUILDING FOR LAO ROAD SECTOR PROJECT 2**

Realising the importance of a sustainable road transport system for the economic development and poverty reduction in Laos, this project will strengthen the national road asset planning and management system. To achieve this, Sweco provides technical assistance and capacity building to develop a climate resilient maintenance system for the national road network. The aim is to increase the climate resilience of the annual maintenance and repair programmes and to prepare a climate change action plan to mainstream climate change adaptation and mitigation in the transport sector. The climate resilient maintenance system will be based on hazard and vulnerability mapping, as well as an assessment of the future potential climate change impact on Laos and the national road network.

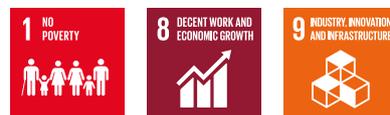
**COUNTRY**

**LAOS PDR**

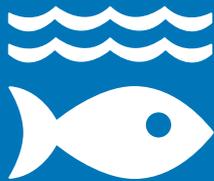
**COMPANY**

**SWECO DANMARK A/S**

**SECONDARY GOALS**



**14** LIFE BELOW  
WATER



## GOAL 14 – LIFE BELOW WATER

# CONSERVE AND SUSTAINABLY USE MARINE RESOURCES FOR SUSTAINABLE DEVELOPMENT

Oceans contain nearly 200,000 identified species. Oceans serve as the world's largest source of protein, with more than 3 billion people depending on the oceans as their primary source of protein. However, as much as 40 percent of the world's oceans are heavily affected by human activities, including pollution, depleted fisheries, and loss of coastal habitats. Danish consulting engineers work in partnership with IFIs to prevent and reduce marine pollution of all kinds, to sustainably manage and protect marine and coastal ecosystems, to develop conservation plans in line with national and international policy and conventions, and to provide institutional strengthening and capacity building to relevant authorities in all aspects of marine management and conservation.



## PROJECT

### **TECHNICAL ASSISTANCE FOR PROGRAMMING EXERCISE OF THE CARIBBEAN REGIONAL PROGRAM – MARINE BIODIVERSITY**

Oceans serve as the world's largest source of protein, with more than 3 billion people depending on the oceans as their primary source of protein. Ramboll, in conjunction with the European Union, worked to address the degradation of the coastal areas of EU overseas territories in the Caribbean through the sustainable management and use of the marine and coastal environment. Ramboll's actions include the development of integrated coastal zone management, including the protection and rehabilitation of marine and coastal geo-ecosystems.

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## COMPANY

**RAMBØLL DANMARK A/S**

## SECONDARY GOAL





## GOAL 15 – LIFE ON LAND

# PROTECT, RESTORE AND PROMOTE SUSTAINABLE USE OF TERRESTRIAL ECOSYSTEMS, SUSTAINABLY MANAGE FORESTS, COMBAT DESERTIFICATION, AND HALT AND REVERSE LAND DEGRADATION AND HALT BIODIVERSITY LOSS

The preservation of our forests and enrichment of the globe's biodiversity are both central themes to sustainable development. In cooperation with national and local authorities, Danish consulting engineers work to conserve and restore inland freshwater ecosystems to promote the sustainable use of forests, develop conservation plans for differing ecosystems to integrate ecosystem and biodiversity values into national and local planning, to provide training and capacity building, and to work with national and local authorities to implement international laws and conventions.



**PROJECT**

**NATURA 2000 MANAGEMENT AND MONITORING CROATIA**

Land degradation affects 1.5 billion people globally. 22 percent of all animal breeds are in danger of extinction. The overall objective of this EU funded project is the preservation of existing biodiversity in Croatia. Specific objectives are to strengthen cooperation in combating environmental degradation and promote environmental sustainability, the protection of the flora and fauna, including forests, and the conservation of biodiversity and international conventions in the area of environment. Ramboll's tasks include the development of management plans for six NATURA 2000 sites as well as the preparation of monitoring programmes for target species and habitat types.



**PROJECT**

**TECHNICAL ASSISTANCE FOR INSTITUTION BUILDING OF THE MINISTRY OF ENVIRONMENT IN ENFORCING ENVIRONMENTAL AND CLIMATE ACQUIS**

The objective of the project was to strengthen the capacity of the Ministry of Environment, Forests and Water Administration in Albania for law drafting and enforcement of national environmental legislation in line with the EU acquis and in particular in air, waste, nature, chemicals and industrial pollution control sectors. To achieve this, Sweco supported the Albanian Government in reviewing and drafting new environmental legislation based on the EU Environmental Liability Directive. Moreover, Sweco developed proposals for revision of the legal framework to ensure proper enforcement of the laws as well as helped to prepare strategies and plans.

COUNTRY  
**CROATIA**

COMPANY  
**RAMBØLL DANMARK A/S**

SECONDARY GOAL

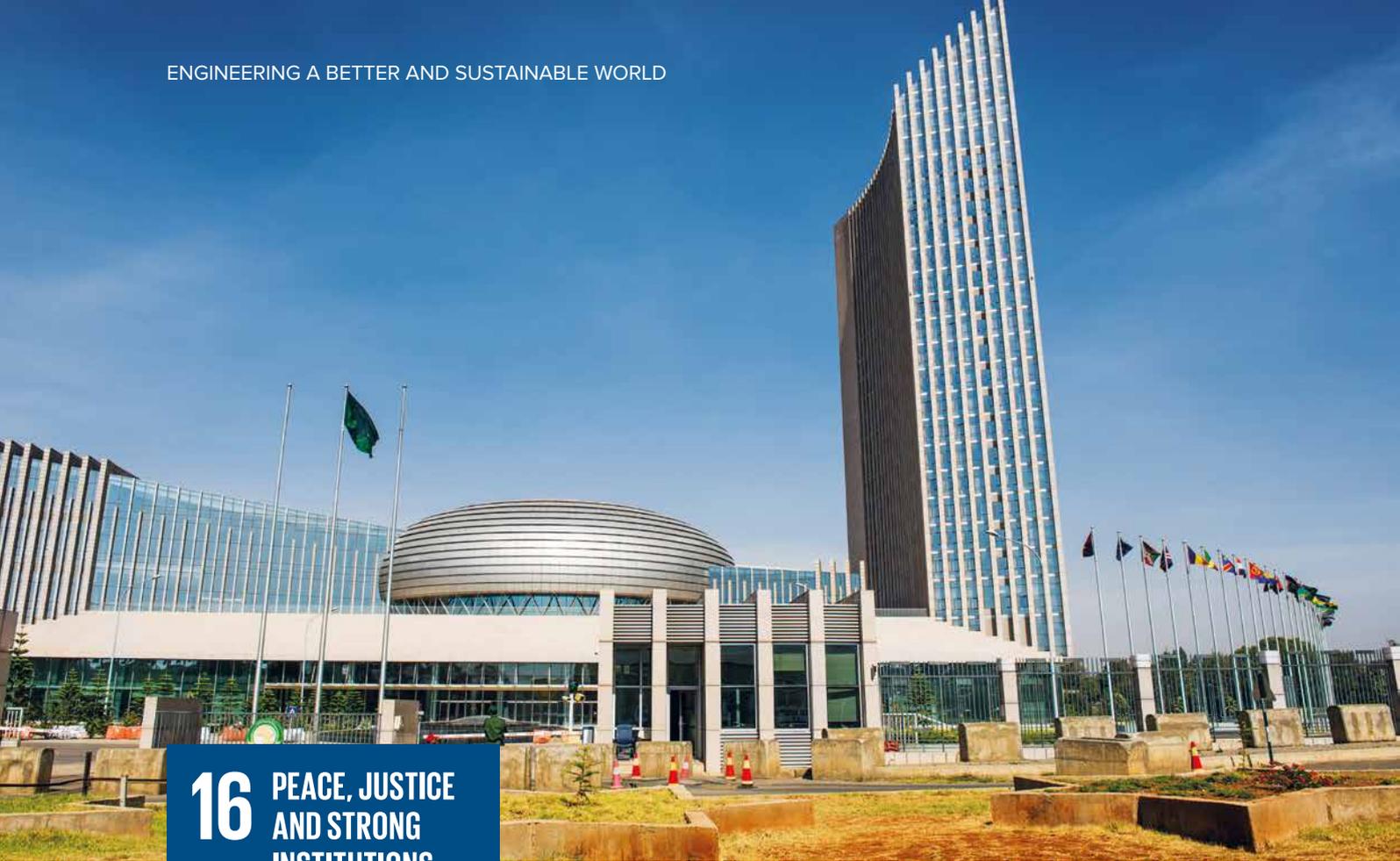


COUNTRY  
**ALBANIA**

COMPANY  
**SWECO DANMARK A/S**

SECONDARY GOAL





**16** PEACE, JUSTICE  
AND STRONG  
INSTITUTIONS



**GOAL 16 – PEACE, JUSTICE AND STRONG INSTITUTIONS**

**PROMOTE PEACEFUL AND INCLUSIVE SOCIETIES FOR SUSTAINABLE DEVELOPMENT, PROVIDE ACCESS TO JUSTICE FOR ALL AND BUILD EFFECTIVE, ACCOUNTABLE AND INCLUSIVE INSTITUTIONS AT ALL LEVELS**

Peace, stability, human rights and effective governance, based on the rule of law, are essential for the hope of sustainable development. Danish consulting engineers are assisting local and national authorities with capacity building.



## PROJECT

### INSTITUTIONAL SERVICES FOR THE AFRICAN UNION

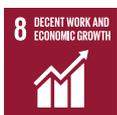
In recent years, the African Union has dedicated a lot of resources towards creating more transparency in all policy and regulatory actions in an effort to develop effective, accountable and transparent institutions at all levels. For the African Union, NTU helped create the Transport Policy Paper and provided the basis for the transport regulatory system and the framework for regulations in the transport sector. NTU also provided institutional strengthening by building and helping promote the cooperation between the Regional Economic Communities – REC (AMU, CEN-SAD, COMESA, EAC, ECCAS, ECOWAS, IGAD and SADC) through the organization of high-level validation committees. These committees were also tasked with reviewing and agreeing on the provision of the transport policy.

NTU's support helped strengthening border liaison between AUC countries; and developing and implementing the first smart corridor pilot in Africa. It contributed to the standardization and harmonization of processes and procedures along the selected corridors. Recommendations were made for a legal framework in all the corridor countries which allows the conversion of all borders along these corridors into OSBPs – One Stop Border Posts.

## COMPANY

### NTU INTERNATIONAL A/S

## SECONDARY GOALS





**17 PARTNERSHIPS  
FOR THE GOALS**



## **GOAL 17 – PARTNERSHIPS FOR THE GOALS**

# **STRENGTHEN THE MEANS OF IMPLEMENTATION AND REVITALIZE THE GLOBAL PARTNERSHIP FOR SUSTAINABLE DEVELOPMENT**

A successful sustainable development agenda requires partnerships between governments, the private sector and civil society. Danish consulting engineering companies place a significant emphasis upon developing inclusive partnerships based upon shared principles and values. For example, we identify and prepare projects for investment leveraging off IFIs to assist in the implementation of the SDGs and we assist countries in strengthening institutional governance in relation to sustainable development focusing upon institutional capacity.



Photo: Nuru Energy

## PROJECT

### EEP MARKET LANDSCAPE STUDY – MINISTRY FOR FOREIGN AFFAIRS OF FINLAND

The Ministry for Foreign Affairs of Finland commissioned DEM (DEM-ESB) to undertake a market landscape study of 15 countries in southern and East Africa to develop a snapshot of the status of energy access in the region and identify opportunities to promote its proliferation. The Study identified trends and barriers within the energy access market as well as the opportunities for the Energy

and Environment Program (EEP) to support the private sector in harnessing energy access market potential. In line with the Fund Manager's objectives (Nordic Development Fund), the market study provided the basis for ensuring that the support provided will promote the achievement of the SDGs targeting poverty reduction, climate change, and access to sustainable energy.

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## COMPANY

### DEM

## SECONDARY GOALS





## REFERENCE COUNTRIES





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