



**HYDROPHIL**

**Transforming knowledge  
into society's welfare**



**220**

Internationally financed projects

**110**

Clients supported

**60**

Countries

**32%**

in Europe

**32%**

in Africa

**32%**

in Asia

**4%**

in Central- and South-America






Working for the water  
and environment sectors



# HYDROPHIL

We aim to contribute to the positive long-term development of societies by fulfilling our clients' visions and finding solutions to their most pressing needs, challenges and concerns.

Improved living conditions and protection of the natural environment is the purpose of everything we do. We have a positive impact on the work of clients and society at large.



# Where we work

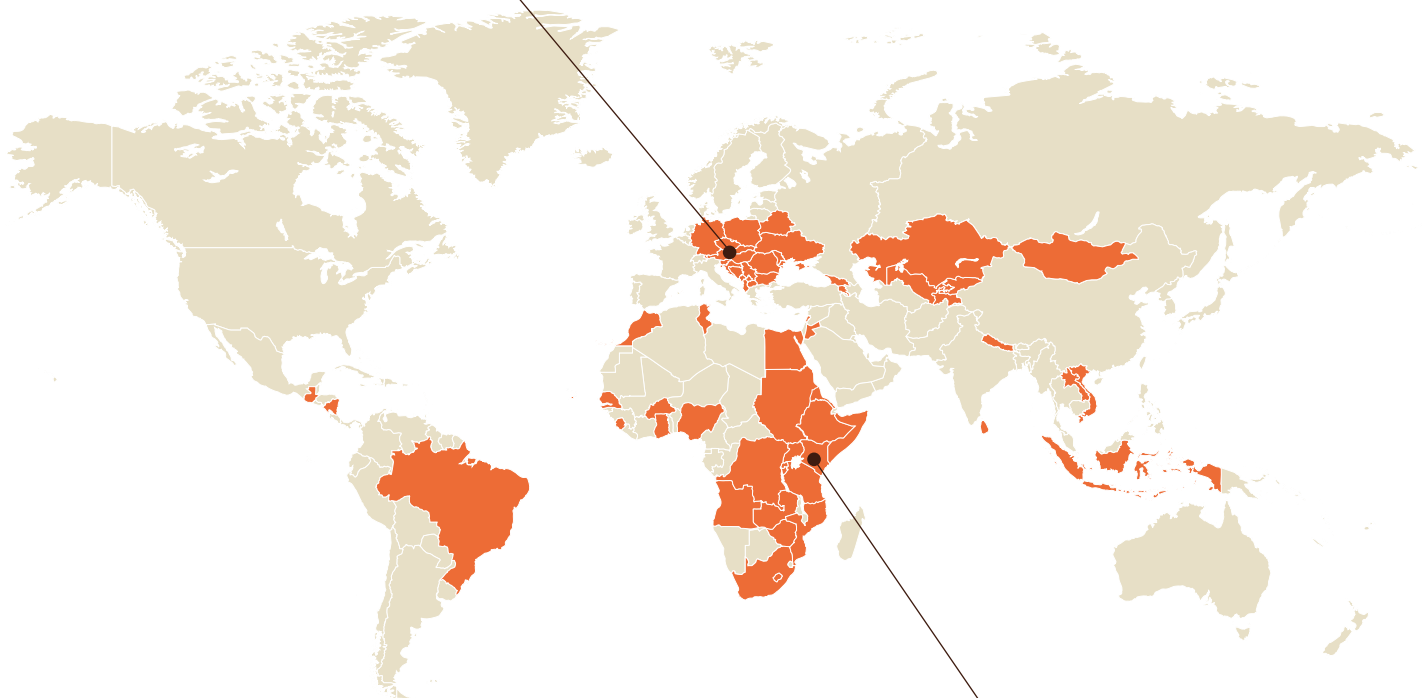
**Our team collaborates across continents** – Europe, Africa, Asia, and Latin America.

We cooperate with governments, municipalities, regional organizations, donor agencies, multilateral funding institutions, and the United Nations - to plan and implement programmes and projects that support the water, wastewater, and water-related environmental sectors.



**HYDROPHIL headquarters in Vienna, Austria**

Centre and fulcrum for our global activities.



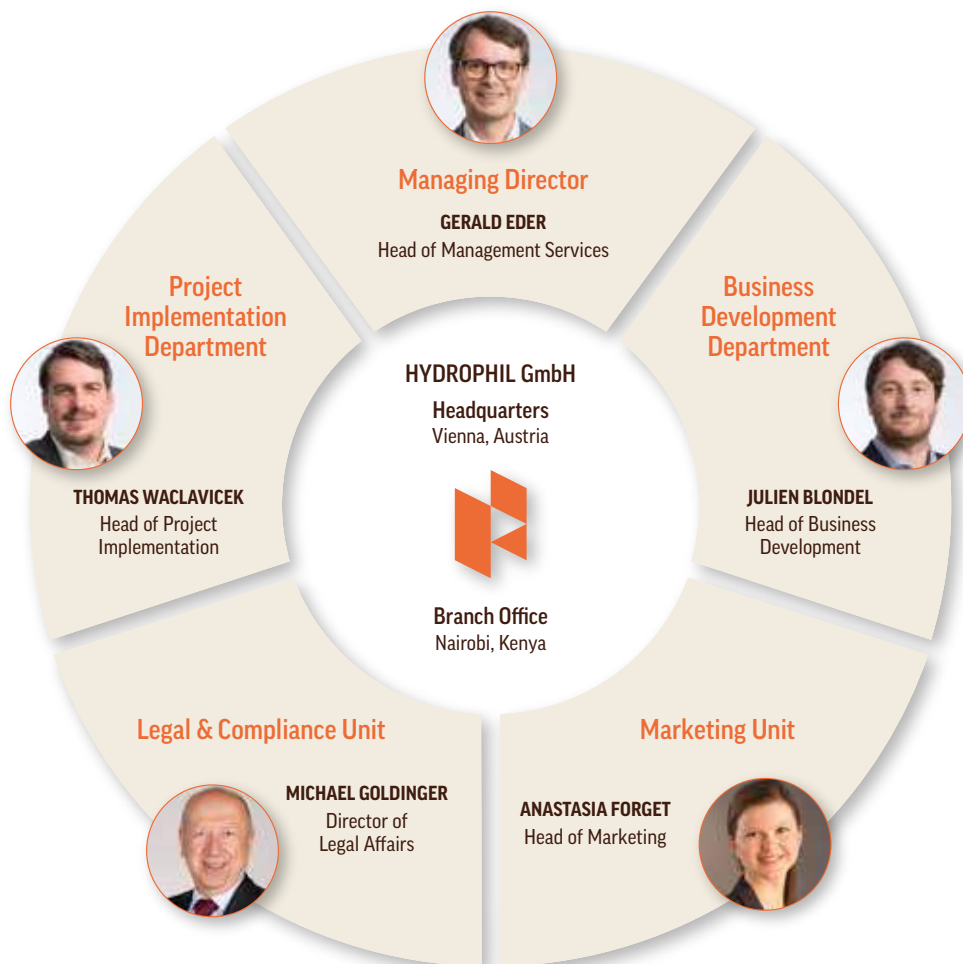
**HYDROPHIL subsidiary in Nairobi, Kenya**  
Environment & Infrastructure Solutions

Our regional hub for our increasing engagement in Eastern Africa.

► Albania ► Angola ► Armenia ► Austria ► Belarus ► Bosnia-Herzegovina ► Brazil ► Bulgaria ► Burkina Faso ► Burundi  
► Cape Verde ► Croatia ► Czech Republic ► Democratic Republic of Congo ► Egypt ► Eritrea ► Ethiopia ► Georgia ► Germany  
► Ghana ► Guatemala ► Hungary ► Indonesia ► Jordan ► Kazakhstan ► Kenya ► Kosovo ► Kyrgyzstan ► Laos ► Lebanon ► Lesotho  
► North Macedonia ► Moldova ► Mongolia ► Montenegro ► Morocco ► Mozambique ► Nepal ► Nicaragua ► Nigeria ► Palestine  
► Poland ► Romania ► Rwanda ► Senegal ► Serbia ► Sierra Leone ► Slovakia ► Slovenia ► Somalia ► South Africa ► Sri Lanka  
► Sudan ► Tajikistan ► Thailand ► Tunisia ► Uganda ► Ukraine ► Tanzania ► Uzbekistan ► Vietnam ► Zambia ► Zimbabwe

# Who we are

HYDROPHIL is a **consulting and engineering** company with its headquarters in Vienna, Austria.



**HYDROPHIL** plays a vital role as an ‘honest broker’ providing a link between the **international financial institution** or donor agencies and the **local beneficiaries**.

It's HYDROPHIL's ability to successfully bridge this immense institutional distance that forms the backbone of its great success. The company's **engagement strategy** incorporates the following approaches:

- ▶ Long-standing relationships built on trust in cooperation with international financial institutions and the consistent implementation of their guidelines.
- ▶ Intensive capacity building of local authorities and clients leading to a high degree of project ownership.
- ▶ Thorough training of local experts and familiarisation of local partner companies with European standards.

## Our fields of operation

**We provide engineering and advisory services in nine distinct areas of the water and environment sector.** For more detailed information on our work within each area, please refer to successfully implemented reference projects on the following pages.

Water Supply Infrastructure ▷

Wastewater & Urban Drainage Infrastructure ▷

WASH - Water, Sanitation and Hygiene ▷

Institutional and Corporate Development ▷

Climate Change Adaptation ▷

Environmental and Social Management ▷

Natural Hazards ▷

Water Resources Management ▷

Irrigation and Agriculture ▷

Energy – Agriculture – Water Nexus ▷

# Water Supply Infrastructure



## DETAILED DESIGN, TENDERING, AND SUPERVISION OF WORKS FOR THE NEW WATER SUPPLY AND WASTEWATER INFRASTRUCTURE IN THE TOWN OF ULCINJ IN MONTENEGRO

**Assignment location:** Ulcinj in Montenegro

**Client:** Vodacom d.o.o.

**Origin of funding:** Kreditanstalt für Wiederaufbau (KfW)

The measures comprise investments in the water supply and sewage disposal infrastructure in Ulcinj and amount to EUR 18 million:

- ▶ Detailed design, including construction and/or rehabilitation of spring captures (capacity total 400 l/s), well fields (capacity total 350 l/s), reservoirs (total 6,600 m<sup>3</sup>), SCADA system, water supply network (total 84 km, DN150 - DN500), wastewater pipework (total 1.5 km, DN200 - DN1200), and sea-outfall
- ▶ Preparation of tender documents
- ▶ Supervision of construction works

Image: iStock.com/vpopovic



## REHABILITATION OF WATER SUPPLY AND WASTE-WATER SYSTEMS IN SOUTHERN KYRGYZSTAN

**Assignment location:** Kyrgyzstan

**Clients:** Water Supply and Wastewater Management Agency of the Uzgen Region, Municipal Enterprise Kerben Suukanal, and Municipal Enterprise Isfana Taza Suu

**Origin of funding:** European Bank for Reconstruction and Development (EBRD)

Rehabilitation of the Water Supply and Wastewater Systems, with a primary focus on replacing critical water-supply networks, modernising household metering, and operational and maintenance equipment in:

- ▶ the Villages of Myrza-Ake, Don-Bulak, Kurshab
- ▶ the City of Kerben
- ▶ the City of Isfana

### Overall tasks and specific specifications for three distinct yet simultaneous projects:

- » Preparation of designs and technical specifications
- » Support the cities/municipality in tendering and negotiating the works contracts
- » Assisting the client with compliance & reporting obligations
- » Supervising construction works
- » Implementing of the Environmental and Social Action Plan

### Villages of Myrza-Ake, Don-Bulak, Kursha – specifics:

- » New boreholes and rehabilitation of existing boreholes
- » Three new reservoirs - 2,500 m<sup>3</sup>, 1,000 m<sup>3</sup>, and water tower
- » New transport pipeline (DN 225 - DN 160) - 7.5 km
- » New distribution network - 12 km

### City of Kerben – specifics:

- » New river intake and sedimentation basin
- » New transport pipeline - 17.5 km
- » Rehabilitation of distribution network - 20 km
- » New distribution network - 20 km
- » Rehabilitation and extension of existing sewers - 2.3 km
- » New wastewater treatment plant

### City of Isfana – specifics:

- » Rehabilitation of two water intakes
- » Rehabilitation of four existing reservoirs
- » New reservoir - 1,400 m<sup>3</sup>
- » Rehabilitation of existing water supply network - 21.3 km
- » New water supply network - 13.7 km

Images: iStock.com/greir, iStock.com/olli081, HYDROPHIL/O. Gurli



We propose innovative and cost-efficient solutions to design, build, and maintain urban and rural water supply infrastructure:

- ▶ Hydraulic modelling
- ▶ Water production
- ▶ Water treatment plants
- ▶ Pumping stations
- ▶ Reservoirs
- ▶ Networks
- ▶ SCADA systems
- ▶ Management, operation and maintenance



### FREETOWN, SIERRA LEONE: WATER SUPPLY AND SANITATION PRIORITY INVESTMENTS PROJECT

**Assignment location:** Sierra Leone

**Client:** GUMA Valley Water Company

**Origin of funding:** African Development Bank (AfDB)

The overall objective was to take the most urgent measures towards the improvement of the water supply and sanitation services in the Western Area/Greater Freetown. The project was prepared based on the Integrated Urban Water Management (IUWM) approach.

The specific objectives of the project concerned four sectors:

- ▶ WASH - Water supply and sanitation
- ▶ Solid waste management
- ▶ Environmental protection of the watersheds
- ▶ Capacity building

#### Services:

- ▶ Elaboration of a Technical Feasibility Study
- ▶ Establishment of Aquatic Environment Protection Infrastructure
- ▶ Elaboration of a Design Report and Tender Documents
- ▶ Preparation of an Environmental and Social Impact Assessment (ESIA) including an Environmental and Social management Plan (ESMP)

Image: HYDROPHIL/J. Pichler-Stainern



### WATER SUPPLY IMPROVEMENT PROJECT FOR NATIONAL OFFICE OF ELECTRICITY AND DRINKING WATER (ONEE) IN MOROCCO

**Assignment location:** Morocco

**Beneficiary:** Office National de l'Électricité et de l'Eau Potable (ONEE)

**Client and origin of funding:** European Bank for Reconstruction and Development (EBRD)

The project aimed to improve the drinking water supply situation in three medium-sized cities and 260 rural communities in the regions of Azilal, Ben Guerir and Ouarzazate. On behalf of EBRD, HYDROPHIL monitored the project to ensure that the investments with a total value of EUR 81 million are implemented within time and budget and in accordance with the project legal agreements. The project included the construction and extension of three water treatment plants (250 - 400 l/s), the construction of appurtenant water pumping stations, the extension of water supply networks and the provision of increased water resources from large open reservoirs (Titouane dam with a holding capacity of 270 M m<sup>3</sup>).

Image: HYDROPHIL/F. Holzmann



# Wastewater & Urban Drainage Infrastructure



## SEPARATE COLLECTION OF MUNICIPAL WASTEWATERS AND SURFACE RUN-OFF IN THE AUSTRIAN CITY OF SPITTAL ON THE DRAVA

**Assignment location:** City of Spittal on the Drava, Austria

**Client:** Spittal City Municipality

**Origin founding:** City of Spittal, State of Carinthia

The overall task of this project is to update the combined sewer system to a separate sewerage network (total length of around 70 km of sewer pipes), carried out in several construction phases, and including the following tasks:

- ▶ Refurbishment/renewal of the sewage system
- ▶ Separation of the existing mixed sewage system
- ▶ Integration of areas in which a separation system is already in place and verification of the capacity with a runoff model
- ▶ Refurbishment/renewal of the drinking water pipes and public lighting
- ▶ Broadband expansion and surface restoration
- ▶ If necessary, renewal of sections of gas and district heating network

The project phases include a preliminary and detailed design, management of the tendering process for the procurement of works, construction supervision, and management of contract implementation.

Image: iStock/RenePi



## BIOGAS PROJECTS IN THE TOWNS OF SLONIM AND BARANOVICHI IN BELARUS

**Assignment location:** Belarus

**Beneficiary:** Baranovichi and Slonim Water Companies

**Client and origin of funding:** European Bank for Reconstruction and Development (EBRD)

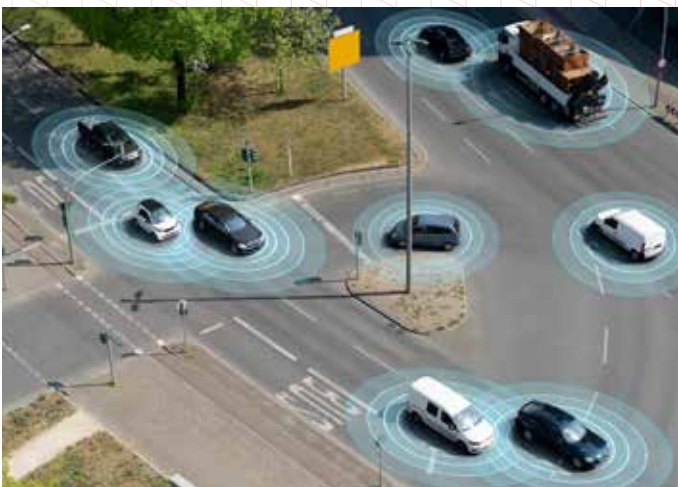
Development of bankable investment programmes for extracting and using biogas from WWTP Slonim ( $Q_{d,ave}=18,500 \text{ m}^3/\text{d}$ ) and WWTP Baranovichi ( $Q_{d,ave}=37,000 \text{ m}^3/\text{d}$ ) and upgrade of water supply and wastewater treatment systems:

- ▶ Baseline study on the company's management practices and services
- ▶ Financial and economic analyses/modelling of the biogas plant sub-projects, and water supply and wastewater treatment investments
- ▶ Development of a long-term investment programme
- ▶ Preparation of a detailed short-term Priority Investment Programme incl. sewer system rehabilitation, improvement of WWTP energy efficiency, anaerobic digestion for excess sludge treatment (1,800 resp. 4,800 kg/d), biogas utilisation with cogeneration units
- ▶ Analysis of institutional and legal framework for investments
- ▶ Environmental and Social Due Diligence

Image: iStock.com/Westhoff

## HYDROPHIL plans for the future of wastewater and stormwater infrastructure in urban and rural areas:

- ▶ Hydraulic modelling of drainage and sewerage networks and appurtenant structures
- ▶ Wastewater treatment plants
- ▶ Wastewater and drainage water re-use
- ▶ SCADA systems
- ▶ Management, operation and maintenance of wastewater and urban drainage infrastructure



### VALUE ENGINEERING FOR THE BMW FUTURE MOBILITY DEVELOPMENT CENTRE IN THE CZECH REPUBLIC

**Assignment location:** Czech Republic

**Client and origin of funding:** Colas Project/ Bayerische Motoren Werke Aktiengesellschaft (BMW)

The future of BMW Mobility Development Center near the western Czech city of Sokolov will be one of the largest and most modern in Europe.

HYDROPHIL was contracted to conduct hydraulic value engineering on the drainage system. The drainage network consisted of road-accompanying swales, drainage pipes, and rainwater retention basins. The main design criterion was that the outflow of the Mobility Development Center must not exceed the existing natural drainage outflow from the undeveloped area. The difference is retained in rainwater retention basins and only released from the terrain in a throttled form. Project specifics:

- ▶ Drainage network: total length approx. 52 km of open channels and ditches with widths from 2 m to 7 m and depths from 0.4 m to 1.0 m
- ▶ Drained area: approx. 670 ha
- ▶ Retention capacity: approx. 30,000 m<sup>3</sup> retention volume by 27 rainwater retention basins
- ▶ The work performed by HYDROPHIL included the development of a hydraulic model with the software MIKE URBAN +.

Image: iStock.com/Gphotography



### NEW BUGESERA INTERNATIONAL AIRPORT IN KIGALI, RWANDA – CONCEPTUAL DESIGN OF WATER AND WASTEWATER INFRASTRUCTURE

The purpose of the project was the safe supply of the entire, new to build an airport with drinking water as well as the safe disposal of wastewater:

- ▶ Conceptual design of water supply system (DN50 – DN250)
- ▶ Conceptual design of sewer network (DN200 – DN500)
- ▶ Design of the sewerage and stormwater network (DN200 – DN500)
- ▶ Conceptual and preliminary design of WWTP (Q<sub>d,ave</sub> 695 m<sup>3</sup>/d, mechanical treatment, biological treatment, final clarifiers, nutrients removal, disinfection).
- ▶ Cost estimates

Image: iStock.com/amesy



# WASH - Water, Sanitation and Hygiene



## URBAN UPGRADING OF SANITATION IN LOW-INCOME PERI-URBAN SETTLEMENTS IN THE KYRGYZ CITIES OF BISHKEK AND OSH

**Assignment location:** Capital City of Bishkek and City of Osh, Kyrgyz Republic

**Client and origin of funding:** The World Bank

- ▶ Assessment of the environmental conditions, coverage, quality of sanitation infrastructure and services in the Novostroykas of Bishkek and Osh which lack access to basic infrastructure and municipal services
- ▶ Survey and analysis of existing wastewater treatment facilities
- ▶ Consultation with relevant government agencies, NGOs and community groups
- ▶ Evaluation of the influence of various future scenarios
- ▶ Identify priority interventions and formulate appropriate improvement strategies
- ▶ Development of an intervention strategy

Image: iStock.com/olli0815



## WASH PROGRAMME - CAPACITY BUILDING AND SUPPORT FOR WATER UTILITY COMPANIES IN SOMALIA, ETHIOPIA, UGANDA, AND SUDAN

**Assignment location:** Ethiopia, Somalia, Sudan, and Uganda

**Client:** UNICEF R-WASH Kenya

**Origin of funding:** Kreditanstalt für Wiederaufbau (KfW)

**Beneficiary:** Water utility in Kabasa and Qansaxley (Somalia); Kabribeya, Sheder, and Aw-Barre (Ethiopia); Rwamwanja (Uganda) and Kasalla (Sudan)

Currently, water and sanitation facilities for the communities are not well established. Due to this challenge, through KfW funding, UNICEF is implementing an "R WASH Programme". This project is focused on building and strengthening the existing Water Utility Companies' capacity to improve the reliability of the supply of water for the host communities and the refugee camps. Some of the most affected countries are Sudan, Ethiopia, Somalia, and Uganda.

- ▶ Assessment of the utilities' current state and ability to undertake its responsibility and mandates
- ▶ Improvement of technical and commercial processes and systems related to the operation & maintenance of the assets, owned but the utility
- ▶ Strategic capacity development
- ▶ Operation capacity development
- ▶ Utility shadowing to achieve sustainable capacity-building results

Image: iStock.com/sadikgulec



We provide support in achieving access to adequate and equitable sanitation and hygiene for all:

- ▶ WASH in urban and rural areas
- ▶ WASH policies, strategies and programs
- ▶ Planning of water supply and sanitation facilities
- ▶ Faecal sludge management and utilization
- ▶ Private sector involvement in the WASH sector
- ▶ Hygiene awareness sensitization and training
- ▶ WASH Management Information Systems
- ▶ Management, operation and maintenance of water supply and sanitation facilities



## KAMPALA SANITATION IMPROVEMENT AND FINANCING STRATEGY

**Assignment location:** Uganda

**Beneficiary:** Kampala Capital City Authority (KCCA)

**Client and origin of funding:** Gesellschaft für Internationale Zusammenarbeit (GIZ)

The strategy aims to achieve equitable and universal access to safely managed sanitation and hygiene in Kampala city by the year 2030.

- ▶ Stakeholder mapping to establish primary, secondary and tertiary actors and establish the extent of their involvement in the process of strategy development
- ▶ Organising and conducting workshops, meetings, etc.
- ▶ Collecting, compiling and analysing secondary data pertaining to challenges, gaps, opportunities, investment needs and possible source, current and possible service delivery models, etc. across the sanitation chain in Greater Kampala
- ▶ Drafting of the strategy

Image: iStock.com/kazmoat98



## FEASIBILITY STUDY FOR SANITATION IMPROVEMENT PROJECT IN THE TOWN OF ERSAL IN LEBANON

**Assignment location:** Lebanon

**Client and origin of funding:** French Development Bank (AFD)

The project's objective was to structure the sanitation of Ersaal, a town situated 15 km to the Syrian border and hosting several refugee camps.

Within the framework of a future project proposed for European Union funding (MADAD funds), it was envisaged to set up a partnership with a project operator to structure the sanitation system of the town of Ersaal.

HYDROPHIL provided its expertise in the sector with transversal support to experts on individual and collective sanitation aspects.

- ▶ Diagnosis of the system
- ▶ Definition of scenarios.
- ▶ Updating the multi-criteria analysis grid and scoring of the scenarios.
- ▶ Review of the final technical options and APS sizing of the works.
- ▶ Assessment of the needs for operation and the possible modalities.

Image: iStock.com/kazmoat98

# Institutional and Corporate Development

HYDROPHIL supports the evolution of a sound framework for public institutions

- ▶ Water sector reform and institutional development
- ▶ Aid modalities
- ▶ Water law & regulation
- ▶ Water sector financing
- ▶ Public-Private Partnership and private sector participation
- ▶ Communication strategies and knowledge management in the water sector



## PREPARING URBAN DEVELOPMENT AND IMPROVEMENT PROJETS - INSTITUTIONAL CAPACITY BUILDING FOR TASHKENT PROVINCE; SEWERAGE SYSTEM DEVELOPMENT PROJECT

**Assignment location:** Tashkent Province, Uzbekistan

**Client:** Asian Development Bank (ADB)

**Origin of funding:** Asian Development Bank (ADB)

Conducted an institutional assessment and developed a capacity building plan to support the strengthening of TPS' capacity.

### The focus of the project:

- ▶ Corporate development
- ▶ Established service standards and an advanced wastewater inspection and monitoring system
- ▶ Improved wastewater Operation and Maintenance capabilities
- ▶ Piloted public-private partnership initiative for Operation and Maintenance of wastewater treatment plants and sewerage networks
- ▶ Introduced mechanism for community-based decision-making processes

Image: iStock.com/Lukas Bischoff



## INFRASTRUCTURE SECTOR STRATEGIES AND ALTERNATIVE FINANCING (SISSAF) IN LEBANON

**Assignment location:** Lebanon

**Client and origin of funding:** European Commission, Delegation of the European Union to Lebanon

SISSAF aimed to improve the efficiency and effectiveness of service delivery and financial sustainability in the Lebanese energy, water and transport infrastructure sectors. HYDROPHIL supported capacity building and know-how transfer in the water sector in two distinct phases:

- ▶ **Phase 1:** Development of water sector programmes including sector policy and strategy development, budgeting, set-up of coordination framework and performance monitoring systems, definition of water sector priority projects
- ▶ **Phase 2:** Programme implementation including studies, technical designs (rehabilitation of Dbayyeh water treatment plant with a capacity of 250,000 m<sup>3</sup>/d incl. treatment equipment, pumps and pumping systems, electrical design, pipework), preparation of tender dossiers, procurement and contracting for priority projects

Image: iStock.com/Holam Cheung



...and supports the development of modern, efficient water, and wastewater utilities:

- ▶ Financial performance improvement
- ▶ Operational performance improvement
- ▶ Environmental and social performance improvement
- ▶ Corporate business plans
- ▶ Public service contracts
- ▶ Management Information Systems
- ▶ Tariff models
- ▶ Stakeholder participation programs
- ▶ Benchmarking in wastewater management



## CONSULTANCY SUPPORT TO THE MINISTRY OF WATER AND ENVIRONMENT IN UGANDA

**Assignment location:** Uganda

**Client:** Ministry of Water and Environment (MWE)

**Origin of funding:** Joint Development Partners and Government of Uganda Partnership Fund

Support to implementation of a new institutional framework and development of capacities for effective and efficient implementation of water and sanitation infrastructure, in particular in small towns and rural growth centres. This included in particular support to the de-concentrated institutions of the MWE for:

- ▶ Implementing infrastructure investments in small towns and rural growth centres through regional Water and Sanitation Development Facilities (WSDFs)
- ▶ Ensuring sustainable operation and maintenance of piped water supply facilities in small towns and rural settings, through regional Umbrella Organisations
- ▶ The services were delivered by long-term technical advisors in two areas of support, namely WSDFs and operation and maintenance

Image: W. Kling



## CAPACITY DEVELOPMENT AT HARGEISA WATER AGENCY IN SOMALILAND

**Assignment location:** Somalia

**Client and origin of funding:** Gesellschaft für Internationale Zusammenarbeit (GIZ)

Support of Hargeisa Water Agency in improving its technical and managerial capacities in the fields of:

- ▶ Aspects of water quality assurance / water safety plan
- ▶ Operation and maintenance of new pumping station
- ▶ Management of water kiosks and water meters
- ▶ Measurement and monitoring of performance indicators at production level
- ▶ Support on Quality Assurance for the rehabilitation of the water quality laboratory
- ▶ Strategy development for sustainable monitoring of performance indicators
- ▶ Procurement support

Image: iStock.com/HomoCosmos, A. Barro



# Climate Change Adaptation



## LAND AND WATER USE AFFECTED BY CLIMATE CHANGE IN MOUNTAINOUS REGIONS IN CENTRAL ASIA

**Assignment location:** Kyrgyzstan, Tajikistan, Afghanistan, Iran, Iraq  
**Client and origin of funding:** Food and Agriculture Organization of the United Nations (FAO)

Conceptualization for a suitable development program in selected pilot watersheds for required water and land use changes due to climatic change impacts:

- ▶ Analysis of hydro-meteorological data and climate models for the region
- ▶ Detailed description of the selected pilot watersheds to be studied
- ▶ Review of studies and research results regarding extent and effects of climate change on water availability and crop production in the watersheds
- ▶ Comparison of irrigation water availability and crop water requirements
- ▶ Identification of necessary climate change adaptation measures

Image: iStock.com/anorthco



## ENHANCING CLIMATE RESILIENCE THROUGH INCREASED WATER FOR PRODUCTION CAPACITIES IN THE KARAMOJA REGION IN UGANDA

**Assignment location:** Uganda  
**Beneficiary:** Ministry of Water and Environment  
**Client and origin of funding:** Gesellschaft für Internationale Zusammenarbeit (GIZ)

Support of the elaboration of a priority list for new valley tanks in the districts Amudat, Kaabong and Kotido with 31 sites in Karamoja. The goal of the consultancy was to give recommendations about the location and size of the proposed tanks based on a brief hydrological study taking into account:

- ▶ The size of each catchment area and other relevant parameters (e.g. geology, soil, land use, slope, socio-economic parameters, etc.)
- ▶ Available hydrometrical data for the region
- ▶ Volume of run-off from the catchments for different hydrological scenarios, to assure that also in increasingly dry years the run-off will be sufficiently filling the tanks

Image: HYDROPHIL/T. Wacławicek

We help strengthen climate change resilience through modernized and well-maintained infrastructure and enhanced water management:

- ▶ Water sector strategies and climate change
- ▶ Climate change adaptation in the municipal water sector (water supply, wastewater treatment, urban drainage)
- ▶ Climate change adaptation in the hydropower sector
- ▶ Climate change adaptation in the agricultural sector
- ▶ Water resource efficient technologies
- ▶ Climate change and sustainable land management



### RESPONDING TO CLIMATE CHANGE IN MOZAMBIQUE – SUSTAINED URBAN WATER SUPPLY AND STORMWATER DRAINAGE IN THE CAPITAL MAPUTO IN MOZAMBIQUE

**Assignment location:** Mozambique

**Client:** National Disasters Management Institute - Mozambique

- ▶ Stormwater analysis for the city of Maputo to identify potential points of water concentration under the scenarios of current and future climate
- ▶ Field surveys to verify bottlenecks of rainwater drainage and to identify potential users of partially processed rainwater
- ▶ Recommendations for infrastructure to solve urban flooding issues
- ▶ Recommendations to implement systems for capturing, processing and distributing rainwater for reuse, as well as providing new business opportunities for private investors where possible

Image: iStock.com/SWInsider



### WATER EFFICIENCY AND SUSTAINABLE LAND MANAGEMENT TECHNOLOGIES AND SERVICES FOR THE REGIONS FROM NORTHERN AFRICA VIA SOUTH-EASTERN EUROPE TO CENTRAL AND EASTERN ASIA

**Assignment location:** EBRD countries of operation including Egypt, Turkey, Uzbekistan and Mongolia

**Client:** European Bank for Reconstruction and Development (EBRD)

Identification and definition of technologies that can be financed by dedicated climate resilience facilities (<https://ebrdgeff.com>) established by the EBRD:

- ▶ Market assessment
- ▶ Assessment of climate vulnerability and resource efficiency in selected countries
- ▶ Identification of water efficient technologies (e.g. trickle irrigation; high pressure cleaners) and technologies contributing to sustainable land management (e.g. "zero till" systems for less soil erosion)
- ▶ Support in setting up of a technology catalogue that lists best-in-class technologies from manufacturers worldwide (<https://ts.ebrdgeff.com/gtc-en>)

Image: iStock.com/Zmaj88



# Environmental and Social Management



## STRATEGIC ENVIRONMENTAL ASSESSMENT OF THE ARAGVI RIVER BASIN IN GEORGIA

**Assignment location:** Georgia

**Client:** European Bank for Reconstruction and Development (EBRD)

Strategic Environmental Assessment (SEA) for small to medium-sized (1-13 MW) hydro electric facilities in the Aragvi river basin area including:

- ▶ Comprehensive public information and stakeholder participation programme associated with the development of the SEA
- ▶ Development and appraisal of specific small to medium-sized hydropower investment projects and their appraisal and permitting including (i) annotated lists of areas/locations most suitable for development and (ii) recommendations for a focused environmental due diligence process
- ▶ Identification and quantification of technical/financial obstacles to be encountered or benefits arising when developing the hydropower plants

Image: iStock.com/Victoria Shelest



## HYDROPOWER PLANT INVESTMENT PROJECTS IN BOSNIA AND HERZEGOVINA

**Assignment location:** Bosnia and Herzegovina

**Client:** Private, confidential

**Origin of funding:** Oesterreichische Kontrollbank Aktiengesellschaft (OeKB) – Austria's Export Credit Agency

The hydropower project with an expected design capacity of about 36 MW in total was planned as a cascade with three run-of-river plants (diversion type) in the Republic of Srpska near Sarajevo. The assignment covered a due diligence of the investment project including an environmental and social impact assessment (ESIA) review:

- ▶ Investigation of the environmental and social situation on the ground
- ▶ Consultations with relevant ministries regarding environmental/social issues: Ministry of Urban Planning, Civil Engineering and Ecology; Ministry of Agriculture, Forestry and Water Management
- ▶ Review of ESIA and permissions for HPP construction and operation upon compliance with the Environmental and Social safeguard policies of the International Finance Corporation (E&S IFC) and World Bank's Operational Manual on Safety of Dams (OP 4.37)
- ▶ Definition of further steps to comply with IFC's E&S safeguard policies

Image: HYDROPHIL/M. Edthofer



HYDROPHIL supports its clients in avoiding, minimising, or mitigating negative environmental and social impacts of projects in the water sector:

- ▶ Environmental and Social Impact Assessment (ESIA) in the municipal water sector
- ▶ ESIA in the agricultural water sector
- ▶ ESIA for hydropower plants
- ▶ ESIA for flood protection projects
- ▶ Monitoring of Environmental and Social Action Plan implementation
- ▶ Waste management



### STRENGTHENING CAPACITIES IN NATURE PROTECTION AND ENVIRONMENTAL MONITORING IN SERBIA

**Assignment location:** Serbia

**Client and origin of funding:** European Commission, Delegation of the European Union to the Republic of Serbia

This assignment assisted local authorities in preparation of technical specifications and terms of references (TOR) within the fields of NATURA 2000/CITES and air/water quality monitoring:

- ▶ Assessment and review of the nature protection sector
- ▶ Preparation and organization of a planning workshop
- ▶ Drafting the TOR and additional documents of the tender dossier
- ▶ Inputs to the design and technical specification to establish a NATURA 2000 database and information system
- ▶ Assisting in the tendering process and evaluation of the tenders
- ▶ Presentation of outcomes and discussions with the beneficiary

Image: iStock.com/Tamara528



### TECHNICAL ASSISTANCE FACILITY FOR DANUBE REGION PROJECTS - IMPROVEMENT OF STURGEON PROTECTION IN THE DANUBE REGION

**Assignment location:** Ukraine and Romania

**Client:** EU-Förderagentur GmbH (EUFA)

**Origin of funding:** European Commission and the City of Vienna

Consulting services for project applicants to qualify and to provide pre-feasibility checks of infrastructural or development projects within the EU Danube Region Strategy Area with a focus on projects' bankability:

- ▶ Identification of key partners in the Danube River Basin and the Black Sea area
- ▶ Analysis of legislative particularities of Danube River Basin and Black Sea countries, especially Ukraine and Romania, that could support or hinder the conservation measures
- ▶ Exploring available funding programs
- ▶ Production of a program document for funding

Image: iStock.com/ Andriy Nekrasov

# Natural Hazards



## FLOOD PROTECTION OF THE MUNICIPALITIES OF SURCIN AND OBRENOVAC

**Assignment location:** Serbia

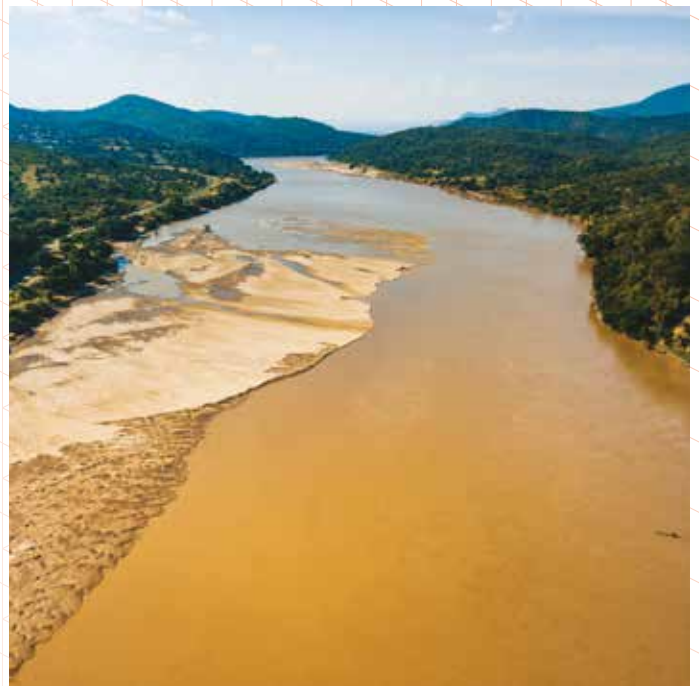
**Beneficiary:** JVP Beogradvode

**Client and origin of funding:** Austrian Development Agency (ADA)

Technical assistance within the "Serbia - Flood Rehabilitation Programme" to tender works and construction supervision for the rehabilitation of combined drainage and irrigation channel networks (total length 64.34 km):

- ▶ Terrestrial and aerial surveying of the channels, drawings, technical specification and bill of quantities
- ▶ Development of tender documents for channel works and 5 water pumping station rehabilitation (total 16 pumps with  $Q=105 - 800$  l/s and  $H=4 - 6$  m)
- ▶ Development of tender documents for construction supervision
- ▶ Tendering support (clarifications; technical evaluation of bids)

Image: iStock.com/nemar74



## PREVENTIVE FLOOD CONTROL MECHANISMS FOR THE PROVINCE OF SOFALA IN MOZAMBIQUE

**Assignment location:** Mozambique

**Client and origin of funding:** Austrian Development Agency (ADA)

Preparation of a road map for future ADA engagement to increase preventive and cross-border flood-control-mechanisms in Mozambique and Zimbabwe, with the focus on the Buzi, Pungwe and Save basins:

- ▶ Baseline and supplementary data collection and analysis
- ▶ Scoping mission for stakeholder consultations
- ▶ Drafting of road map
- ▶ Validation workshop

Image: iStock.com/golero



We support informed decision making for the management of natural hazard risks:

- ▶ Hydrology and hydraulics of surface water bodies
- ▶ Natural hazard risk assessment and mapping
- ▶ Natural hazard risk management
- ▶ Flood protection
- ▶ River training



### FLOOD PROTECTION SCHEME FOR THE CITIES OF VALJEVO, PARACIN, AND SVILAJNAC IN SERBIA

**Assignment location:** Serbia

**Beneficiary:** JVP Srbijavode

**Client and origin of funding:** Austrian Development Agency (ADA)

Technical assistance within the "Serbia - Flood Rehabilitation Programme" to tender works and construction supervision for 100 year return period flood protection schemes in the cities of Valjevo, Paracin and Svilajnac:

- ▶ Review of available tender documentation upon quality, comprehensiveness (incl. statutory and legislative requirements, technical standards, environmental compliance, technical specifications, Bill of Quantities)
- ▶ Development of tender documents for flood protection works (bank protection, ground sills, lateral embankments, mobile equipment) with a total length of ca. 23 km
- ▶ Development of tender documents for construction supervision
- ▶ Tendering support (clarifications; technical evaluation of bids)

Image: iStock.com/nemar74



### HAZARD RISK MAPS FOR THE PROVINCE OF BURGENLAND, AUSTRIA

**Assignment location:** Austria

**Client and origin of funding:** Government of Burgenland, Austria

Preparation of hazard risk maps for four rivers in line with RIWA-T (Technische Richtlinien für die Bundeswasserbauverwaltung) as well as relevant guidelines for hazard risk mapping:

- ▶ Measurement of the project area (airborne laser scan)
- ▶ Creation of a homogeneous digital terrain model
- ▶ Set-up of a 2D hydraulic model (SMS / Hydro\_AS-2D)
- ▶ Calculation of relevant outflows HQ30, HQ100 and HQ300
- ▶ Elaboration of water levels, water depths, flow velocities, sole shear stresses
- ▶ Designation of risk zones

Image: HYDROPHIL



# Water Resources Management



## OPERATIONALIZE CATCHMENT BASED WATER RESOURCES MANAGEMENT IN UGANDA

**Assignment location:** Uganda

**Beneficiary:** Ministry of Water and Environment

**Client and origin of funding:** Gesellschaft für Internationale Zusammenarbeit (GIZ)

After intensive work on realising the Catchment Based Water Resources Management (CbWRM) implementation plan, the Ministry of Water and Environment decided to review the strategy by addressing various developments and achievements:

- ▶ Review of operational documents, strategies, guidelines, policies and acts
- ▶ Revision of the Strategy and Implementation Plan for Operationalization of CbWRM
- ▶ Develop a Resource Mobilization Strategy and Action Plan for CbWRM
- ▶ Review and update the Operations Manual for Water Management Zones

Image: HYDROPHIL/T. Wacławiczek



## WATER MANAGEMENT IMPROVEMENT PROJECT: DESIGN OF THE KYRGYZ HYDRO-METEOROLOGICAL NETWORK REHABILITATION

**Assignment location:** Kyrgyz Republic, national

**Client and origin of funding:** Food and Agriculture Organisation (FAO)

Diagnostic review and planning the rehabilitation and modernisation of Kyrgyzstan's hydro-meteorological data collection system.

The World Bank-financed Water Management Improvement Project supported developing the institutional, technical, and regulatory conditions for sustainable and efficient water resources management in Kyrgyzstan. In this context, a reliable hydro- meteorological data collection system was an essential requirement. Water allocation decisions, including transboundary management, directly depend on a sound knowledge of resources available, including dependable forecasts.

Images: HYDROPHIL/R.Seidelmann

HYDROPHIL supports the planning, developing, and integrated management of water resources:

- ▶ (Integrated) Water Resources Management policies and strategies (IWRM, WRM)
- ▶ Water resources assessment
- ▶ Water resources development and planning
- ▶ (Transboundary) River Basin Management (TRBM, RBM) and water catchment planning
- ▶ Monitoring and evaluation in WRM and RBM
- ▶ Decision Support Systems, Information Systems for WRM



### IWRM PERFORMANCE-BASED MONITORING & EVALUATION SYSTEM FOR THE MEKONG RIVER

**Assignment location:** Cambodia, Lao, Thailand, Viet Nam  
**Client and origin of funding:** Mekong River Commission (MRC)

The overall objective of the Mekong River IWRM Programme (M-IWRMP) is to improve the enabling framework and capacity for IWRM in the Lower Mekong Basin Countries and strengthen the role of MRC as the facilitator of significant water resources development, guided by IWRM principles. To ensure the successful implementation of the project and the achievement of its objectives, a Performance Based Monitoring and Evaluation System (pb-M&E System) had to be developed. The consultancy consisted in developing a pb-M&E System providing indicators for each of the regional and transboundary activities as well as for the interlinkage with national components.

Images: HYDROPHIL/R. Seidelmann



### MULTIPURPOSE WATER RESOURCES DEVELOPMENT PROJECT IN THE LAKE KYOGA BASIN (UGANDA), YALA RIVER (KENYA) AND GUCHA MIGORI RIVER BASIN (KENYA)

**Assignment location:** Uganda and Kenya  
**Client:** Nile Basin Initiative (NBI)

Identification of a Multipurpose Water Resources Management and Development Project to improve water security and supply, food and energy security, reduce flow variability and flood damage and contribute towards improved livelihoods:

- ▶ Situational analysis incl. inventory of irrigation projects, irrigation sector analysis
- ▶ Formulation of a Multipurpose Basin Water Resources Development Strategy. For irrigation, the strategy highlighted technical and institutional aspects with the aim of identifying critical considerations in sustainable irrigation development
- ▶ Formulation of a Multipurpose Basin Water Resources Investment Plan incl. definition, description and prioritisation of bankable irrigation sub-projects

Images: HYDROPHIL/H. Jung



# Irrigation and Agriculture



## RESOURCE EFFICIENCY INVESTMENT OPPORTUNITIES AT JUHAYNA COMPANY IN EGYPT

**Assignment location:** Egypt

**Beneficiary:** Juhayna Company

**Client and origin of funding:** European Bank for Reconstruction and Development (EBRD)

The Juhayna Company intended to extend the milk production capacity by increasing the livestock and the area for animal food production at Bahariyya Oasis:

- ▶ Verification of available groundwater resources
- ▶ Review of the current use of water and identification of cost-efficient investment options for the reduction of water
- ▶ Review of wastewater and organic waste management, as well as identification of investment options for wastewater recycling and reuse
- ▶ Assessment of financial feasibility of proposed water efficiency investments

Image: iStock.com/yadamons



## AGRICULTURAL WATER CONSERVATION PROJECT IN MOROCCO

**Assignment location:** Morocco, Saïss, and Garet plains

**Client and origin of funding:** European Bank for Reconstruction and Development (EBRD)

The Saïss and Garet Water Conservation Project contains two sub-projects: (1) the construction of a water transfer network in Saïss and (2) the rehabilitation and modernization of the water distribution network in the Garet perimeter.

The main objective of the project is to monitor the implementation of the contracts, including the following tasks:

- ▶ Monitoring the procurement process and implementation of the contracts
- ▶ Monitoring the implementation of mitigation measures included in the Environmental & Social Action Plan
- ▶ Monitoring compliance with EBRD's Performance Requirements and the EU Environmental, Health and Safety requirements
- ▶ Identifying key problems that may threaten the successful implementation of the project

Image: HYDROPHIL/ M.Edthofer



# Energy – Agriculture – Water Nexus



## REHABILITATION OF THE KAIRAKKUM HYDRO POWER PLANT (126 MW) IN TAJIKISTAN

**Assignment location:** Town of Kayrakkum in Sughd Province, Tajikistan

**Client:** Open Stock Holding Power Company Barki Tojik, Tajikistan

**Origin of funding:** European Bank for Reconstruction and Development (EBRD)

Feasibility Study, including Environmental and Social Impact Assessment (ESIA) for upgrading of Kairakkum dam. The multipurpose scheme for energy production and irrigation has a reservoir area of 513 km<sup>2</sup> with a gross storage capacity of ca. 3,400 m<sup>3</sup>. The dam consists of an earth and rockfill dam (length ca. 1,200 m) and a concrete dam (length ca. 130 m).

- ▶ Assessment of the overall plant, dam, and reservoir condition
- ▶ Assessment of current and future hydrology, climate change risks
- ▶ Workplan on required actions towards the investment project scoping
- ▶ Identification of suppliers, cost estimates, tender and implementation processes
- ▶ Complete ESIA
- ▶ Numerical model covering irrigation demand, energy generation, evaporation

Image: HYDROPHIL/R. Seidelmann



## PROGRAMMING WITHIN THE NEXUS OF ENERGY, AGRICULTURE, AND POTABLE WATER SUPPLY IN THE UPPER AMU DARYA BASIN UNDER CLIMATE CHANGE IMPACTS

**Assignment location:** Tajikistan

**Client/Origin of funding:** Food and Agriculture Organisation (FAO)

The task was to review historical hydro-meteorological time series and to analyse the impact of climate change on the future flow of the Upper Amu Darya Basin (Panj sub-basin).

- ▶ Assessed hydro-meteorological data and reviewed predictions made by global circulation models (GCMs)
- ▶ Completed a hydro-meteorological analysis
- ▶ Comparison of irrigation water availability and crop water requirements in selected pilot watersheds
- ▶ Delivered recommendations for future planning of programs within the nexus of agriculture (irrigation), energy (hydropower), and potable water supply

This led to the conceptual design of appropriate development programs for selected pilot watersheds based on the required changes in water and land use due to climate impacts.

Image: iStock.com/ Lukas Bischoff



**We are passionate about our business.**  
Our success would be impossible without the hard work and dedication of our staff.



## How we work

HYDROPHIL understands that the water and environment sectors demand both niche specialization and high-level direction for virtually every project.

**Water and related environment sectors** are constantly challenged by climate change, demographic and economic development, pollution or changing lifestyles. This requires the integration of many disciplines. HYDROPHIL's team has wide-ranging skills, covering advisory and specialist technical services.

**We search for the opportunity to add value** – technical, economic, environmental, and social. We stretch our thinking to increase benefits, cut costs, increase efficiency, reduce risk, and improve resilience and reliability.

**We do this through close collaboration with our clients** – we understand their business environment and the needs of their end users. Together, we develop solutions.





## Our services

We develop targeted policies and strategies, successfully design infrastructure, whether that be the introduction of new assets or extracting more value from existing ones, support our clients with the procurement of the best suppliers and construction companies, supervise construction works, and advise operators in reorganization and transformation processes.

Policy and Strategy Development Support



Studies – Masterplans, Due Diligences, Feasibility Studies



Engineering Design and Procurement Support



Construction Site Supervision



Technical Assistance and Capacity Building



Management and Information Systems



Monitoring and Evaluation



# Policy and Strategy Development Support



## ELABORATION OF A NEW WATER SUPPLY AND SANITATION SECTOR STRATEGY FOR ARMENIA

**Assignment location:** Armenia

**Client:** State Committee of Water Economy (SCWE)

**Origin of funding:** Kreditanstalt für Wiederaufbau (KfW)

Support the Government of Armenia to develop a road map for the reform program and implement the most suitable organisation model for water service provision.

- ▶ Management contracts for Armenian Water and Sewerage Company and the three regional utilities Shirak, Lori, and Nor Akunq extended
- ▶ Assessment of the present state of the water sector, including legislative, institutional, and regulatory framework, and financial and economic analysis
- ▶ Options for organisation models for water service provision in urban and rural Armenia presented to the stakeholders
- ▶ Financial and human resources impact of the selected management option assessed
- ▶ Benchmarking, performance incentive schemes, capacity-building strategies developed
- ▶ Proposed water sector organisation model approved by the Government of Armenia
- ▶ Support in the implementation of institutional reform

Image: iStock.com/AleksandarGeorgiev



## TAJIKISTAN RURAL WATER SUPPLY AND SANITATION NATIONAL STRATEGY

**Assignment location:** Tajikistan, national

**Client:** Municipal Infrastructure Development Project Management Unit (MIDPMU) – Rural Water Supply and Sanitation Project (RWSSP), Dushanbe City, Republic of Tajikistan

**Origin of funding:** The World Bank Group

Providing technical assistance to develop a “national vision” for the Water Supply and Sanitation sector of Tajikistan. In addition, the services encompass a trajectory of the sector’s development in achieving targets focused on universal access to safely managed water supply and sanitation (WS&S) services.

- ▶ Pillar 1: Upgrading the institutional framework
- ▶ Pillar 2: Increasing coverage with safely managed WS&S services
- ▶ Pillar 3: Promoting and ensuring efficiency of WS&S services
- ▶ Pillar 4: Optimizing financing of the WS&S
- ▶ Pillar 5: Ensuring coordination and accountability in the sector by adopting a robust and straightforward M&E Framework

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## WATER INFRASTRUCTURE REGULATION AND TARIFF POLICY DEVELOPMENT FOR KAZAKHSTAN

**Assignment location:** Kazakhstan, entire country

**Client and origin of funding:** European Bank for Reconstruction and Development (EBRD)

Support to the Government of Kazakhstan in implementing a modernized legal, institutional and methodological framework for economic regulation of the country's water supply and wastewater infrastructure:

- ▶ Elaborated an incentive-based tariff and tariff-related procedures for the water sector
- ▶ Agreed on methods and processes with the stakeholders and applied the new approach to a pilot water company
- ▶ Assisted the water regulator in documenting the new tariff system
- ▶ Developing the implementation plan of the tariff reform for both the pilot company and water regulator
- ▶ Developed key performance indicators

Images: iStock.com/Dutko



## DEVELOPMENT OF A WATER SECURITY DIAGNOSTIC METHODOLOGY AND REPORTS FOR SOUTH-EASTERN EUROPE AND CENTRAL ASIA

**Assignment location:** Europe and Central Asia Region

**Client and origin of funding:** The World Bank

Identify and benchmark key challenges around water security in the World Bank Europe and Central Asia region countries and propose follow-up activities at the country level to improve water security. The assignment aimed to provide orientation to policymakers on actions and reform agendas to address emergent challenges and opportunities related to water security.

- ▶ Development of approach and methodological framework for the assessment, benchmarking, and action planning tool
- ▶ Elaboration of regional as well as country-level Water Security Assessments and Diagnostic Reports

Image: iStock.com/Zmaj88



# Studies – Masterplans, Due Diligences, Feasibility Studies



## ALBANIAN NATIONAL WATER SUPPLY AND SEWERAGE MASTER PLAN

**Assignment location:** Albania

**Client:** Albanian Ministry of Public Works and Transport

**Origin of funding:** Kreditanstalt für Wiederaufbau (KfW)

The Water Supply and Sewage Master Plan's main goals were to ensure a sustainable provision of water and wastewater services for the Albanian population, the growing industry, and the approximation to the standards of the European Union. Projected changes in the water availability caused by climate change were taken into account.

- ▶ Baseline and Water Sector Strategy: Legal and institutional framework; national water policies; inventory of existing water sources and facilities (water supply, sewage collection, and wastewater treatment); consumption patterns and projection of future long-term water demand
- ▶ Development of a prioritization system for phased infrastructure investments based on negotiated service standards and assessed costs
- ▶ Master Plan: Development of short, medium, and long term investment plans for the time horizon until 2040

The master plan was developed in close cooperation with all Albanian stakeholders:

- ▶ Ministry of Environment, Forestry and Water Administration; Ministry of Agriculture, Food and Consumer Protection; Ministry of Finance; Ministry of Local Government
- ▶ Water Regulatory Authority (ERRU)
- ▶ Albanian Association of Water Supply and Sewerage Enterprises
- ▶ 58 public water and sewerage utilities throughout Albania
- ▶ 135 water departments within municipalities without utilities

Image: HYDROPHIL/Vincenc Gjoka



## SERBIAN CLIMATE RESILIENCE & IRRIGATION PROJECT

**Assignment location:** Serbia

**Beneficiary:** JVP Srbijavode

**Client and origin of funding:** European Bank for Reconstruction and Development (EBRD)

Technical, environmental and social due diligence of two investment projects near the towns of Svilajnac (1,042 ha irrigated area, total 1.916 M m<sup>3</sup> water per year abstracted from groundwater/shallow wells and surface water) and Negotin (ca. 2,000 ha irrigated area, total 4.57 M m<sup>3</sup> water per year abstracted from Danube River, balancing reservoir).

- ▶ Technical assessment; set-up of inclusion benchmarks; assessment of demand risks; preparation of a procurement/implementation strategy
- ▶ Economic analysis, including analysis of upgrade measures delivering water and energy efficiency savings/productivity gains and business model for recovering investment costs
- ▶ Environmental and Social Impact Assessment (ESIA), including water use efficiency
- ▶ Climate change resilience assessment, especially regarding water resources availability

Images: iStock.com/demachi



## MODERNISATION OF ASTANA WATER SUPPLY SYSTEM AND WASTEWATER TREATMENT PLANT

**Assignment location:** Capital City of Nur-Sultan, Kazakhstan

**Beneficiary:** Astana Su Arnasy

**Client and origin of funding:** European Bank for Reconstruction and Development (EBRD)

Preparation of a feasibility study for the water company Astana Su Arnasy:

- ▶ Baseline study (socio-economic data, organisational/institutional review, key performance indicators)
- ▶ Development of the financial model, affordability, and tariff setting
- ▶ Technical assessment - water supply, treatment and distribution, wastewater collection, and treatment
- ▶ Long term investment plan and institutional development options for water supply (total volume ca. 139 M EUR) and wastewater (total volume ca. 126 M EUR) with particular focus on the modernisation and expansion of the wastewater and sludge treatment
- ▶ Priority investment programme (4.6 M EUR) including rehabilitation and upgrade of the WWTP screening plant, aerated sand and grease trap, encasement of primary sedimentation tanks, improvements on the secondary sedimentation and the rehabilitation of sewage system (total length 5.5 km), procurement and implementation strategy
- ▶ Environmental and social assessment

Images: iStock.com/amesy



## WASTEWATER MANAGEMENT FOR THE MUNICIPALITIES OF BAQA AL-SHARQIA AND NAZLAT IN PALESTINE

**Assignment location:** Palestine

**Beneficiaries:** Municipality of Baka Al Sharqiya and Nazlat, Palestinian Water Authority, Ministry of Local Government, Ministry of Environmental Protection, Ministry of Agriculture

**Client and origin of funding:** United Nations Development Programme (UNDP)

The feasibility study compared different options on technical, operation, financial, socio-economic, and environmental levels. The best option resulted in 25 km of primary and secondary network, four pumping stations, and a treatment plant of wetland type (1,500 m<sup>3</sup>/d; 15,000 PE). In order to minimise environmental threats, the connection to the existing Israeli WWTP in Baqa Al Gharbiya was suggested. Wastewater re-use was achieved by storage and irrigation of trees along the wadi, until the farmers will connect their fields to the irrigation system. For the primary and secondary network, as well as the smallest pumping station, a detailed design was elaborated.

Image: iStock.com/leospek



# Engineering Design and Procurement Support



## WATER DEVELOPMENT PROGRAMME – DESIGN AND CONTRACT MANAGEMENT IN THE CITY OF CHISINAU IN MOLDOVA

**Assignment location:** Chisinau in Moldova

**Client:** S.A. Apa Canal Chisinau

**Origin of funding:** European Bank for Reconstruction and Development (EBRD) and European Investment Bank (EIB)

Programme implementation incl. design, tender preparation, procurement and disbursement. Investments (total EUR 59 million) included:

- ▶ Water (total 190 km) and sewer (total 15 km) networks rehabilitation
- ▶ Water and wastewater pumping stations including the replacement of 26 pumps
- ▶ Supply of maintenance tools, leak detection equipment, specialised vehicles
- ▶ Implementation of a full Enterprise Resource Planning (ERP) system
- ▶ Enhancement of the existing SCADA system
- ▶ Implementation of existing WWTP extension to 169,000 m<sup>3</sup>/d
- ▶ Rehabilitation of reservoirs (total capacity ca. 150,000 m<sup>3</sup>) and 56 wells

Image: HYDROPHIL/V. Gjoka



## TECHNICAL ASSISTANCE TO SUPPORT THE PREPARATION OF WATER PROJECTS IN THE UKRAINIAN CITIES OF LUTSK AND RIVNE

**Assignment location:** Ukraine

**Client/Origin of funding:** SAFEGE/European Investment Bank

**Beneficiaries:** Public Utility Companies Lutskvodokanal and Rivneoblvodokanal

Water and wastewater projects in Lutsk and Rivne to achieve quality services with drinking water provision to the consumers, environmentally sustainable wastewater management, and gain energy efficiency impact. Assist the PUC Lutskvodokanal and Rivneoblvodokanal with:

- ▶ Completion of the Feasibility Studies
- ▶ Elaboration of the Environmental & Social Impact Assessments and the Climate Risk Reports
- ▶ Drafting of the Procurement Plans
- ▶ Preparation of the Tender Documents for the Priority Investment Programme

### Lutsk specifics:

- » Rehabilitation of water supply pipelines (DN400 – DN630; 6,800 m) and wastewater treatment plant (160,000 P.E.)

### Rivne specifics:

- » Reconstruction of the water transmission main (DN 225 – DN 355; 10,700 m)
- » Rehabilitation and extension of wastewater treatment plants in Rivne (150,000 P.E.), in Kvasyliv (8,000 P.E.), and in Goscha (1,000 P.E.)

Images: iStock.com, sonatali/ HYDROPHIL, A. Stoits



## ENGINEERING DESIGN AND CONSTRUCTION SUPERVISION IN THE CITY OF KYZYL-KIYA IN KYRGYZSTAN

**Assignment location:** Kyzyl-Kiya City in the Kyrgyz Republic

**Client:** ME Kyzyl-Kiya Suukanal

**Origin of funding:** European Bank for Reconstruction and Development (EBRD)

Facilitation of priority investment implementation including preparation of designs and tender documents, procurement, construction supervision and contract administration. The investments included:

- ▶ Rehabilitation of two ground water wells (70 m<sup>3</sup>/h)
- ▶ Replacement of four pumps on river intake (450 m<sup>3</sup>/h)
- ▶ Upgrade of water treatment plant, replacement of filter sand and backwash pumps (200 m<sup>3</sup>/h)
- ▶ Construction of clean water reservoirs (2 x 500 m<sup>3</sup>)
- ▶ Replacement of 32.5 km existing urban water network mains (DN110 - DN350)
- ▶ Tendering and procurement of maintenance machinery and vehicles

Image: HYDROPHIL/A. Stoits



## DESIGN REVIEW AND PROCUREMENT OF WORKS IN GEVGELIJA AND KAVADARCI IN NORTH MACEDONIA

**Assignment location:** North Macedonia

**Client:** Ministry of Transport and Communication, North Macedonia

**Origin of Funding:** Kreditanstalt für Wiederaufbau (KfW), Swiss State Secretariat for Economic Affairs (SECO), and the Republic of North Macedonia

The project included the construction and rehabilitation of urban water supply and sewerage systems at socially acceptable costs in the municipalities of Kavadarci and Gevgelija.

The Feasibility Studies included six measures for Kavadarci (sewage system DN200 – DN500, total ca. 3.3 km; stormwater system DN400 – DN1200, total ca. 2.8 km; water supply, DN25 – DN150, total ca. 1.8 km), and five measures for Gevgelija (stormwater system DN300 – DN1000, total ca. 7.4 km; water supply DN100 – DN250, total ca. 9.1 km; procurement of 14 bulk flow meters, 2,250 customer water meters, and 100 valves). HYDROPHIL provided the following services:

- ▶ Review of feasibility studies, baseline reports, engineering designs, design reports, bill of quantities, final designs
- ▶ Preparation of tender documents
- ▶ Assistance to the Project Executing Agencies (PEAs) in tendering and contracting

Image: HYDROPHIL/A. Stoits



# Construction Site Supervision



## WASTEWATER INVESTMENT PROGRAMME FOR SIBENIK IN CROATIA

**Assignment location:** Croatia

**Client:** Sibenik Vodovod i Odvodnja d.o.o.

**Origin of funding:** European Bank for Reconstruction and Development (EBRD)

The objective of the project was to extend the sewage network to residential and tourist areas, connected to the main collector for treatment in the WWTP.

Services comprised:

- ▶ Support in establishing a PIU
- ▶ Monitoring of the Project Implementation Plan
- ▶ Support in preparation of technical requirements for gravitation sewage collector (ca. 30 km, DN250 - DN1200), 11 pumping stations, and ca. 6.8 km sewage pressure pipeline (DN400 - DN450)
- ▶ Procurement support
- ▶ Support in ensuring compliance with finance documents and other agreements
- ▶ Supervision of works contracts and administration of supply and install contracts

Image: HYDROPHIL/J. Pichler-Stainern



## HYDRAULIC MODEL AND SUPERVISION WORKS IN THE KYRGYZ CITY OF KARA-SUU

**Assignment location:** Kara-Suu City in the Kyrgyz Republic

**Client:** Kara-Suu City

**Origin of funding:** European Bank for Reconstruction and Development (EBRD) and Union's Investment Facility for Central Asia (EU IFCA)

Providing support to the Kara-Suu Water Company in rehabilitating the Water Supply and improving the Wastewater System:

- ▶ Elaboration of the Conceptional Design of Water Supply and Sewerage Networks
- ▶ Establishment of the Hydraulic Model and dimensioning of the Water Supply and Sewerage Networks
- ▶ Input to the development of the Detail Designs
- ▶ Support in the supervision of the construction contract

Images: HYDROPHIL/A.Stoisits



# Technical Assistance and Capacity Building



## TECHNICAL ASSISTANCE AND SUPPORT TO THE REFORM OF THE WATER AND SANITATION SECTOR IN LEBANON

**Assignment location:** Lebanon

**Clients and origin of Funding:** French Development Agency (AFD)

In this complicated and chaotic context, AFD proposed a support project that is dedicated to:

- ▶ Support to Lebanese sectoral actors in the effective implementation of the reform by focusing on strengthening their operational capacities and developing or strengthening sector and service management tools;
- ▶ Implement and develop the tools for understanding the CIP projects and to ensure that the proposed projects are anchored in an approach focused on sustainable access to services;

Support the strengthening of coordination and institutional dialogue to improve the coordination and visibility of the actions of the sectoral stakeholders and thus restore the confidence of the users, in particular by setting up autonomous and transparent bodies such as the Water and Sanitation Sector

Image: iStock/Arpad Benedek



## WATER SECTOR REFORMS COMMUNICATION AND STAFF INDUCTIONS IN KENYA

**Assignment location:** Kenya

**Client:** Ministry of Water and Irrigation

**Origin of funding:** The World Bank

The Ministry of Water and Irrigation (MWI) is responsible for national policy and strategy formulation, legislation and coordination of the water sector. HYDROPHIL supported the MWI to enhance water sector reforms communications and build capacities of water sector staff through:

- ▶ Development and operationalization of a comprehensive water sector communication strategy, interactive web-based portal and information management system for water sector reforms
- ▶ Performance enhancing induction on the Water Act 2016, policies and strategies under the Ministry

Image: HYDROPHIL/H. Jung

# Management and Information Systems



## MANAGEMENT INFORMATION SYSTEM FOR THE WASH SECTOR IN RWANDA

**Assignment location:** Rwanda

**Client:** Ministry of Infrastructure (MININFRA)

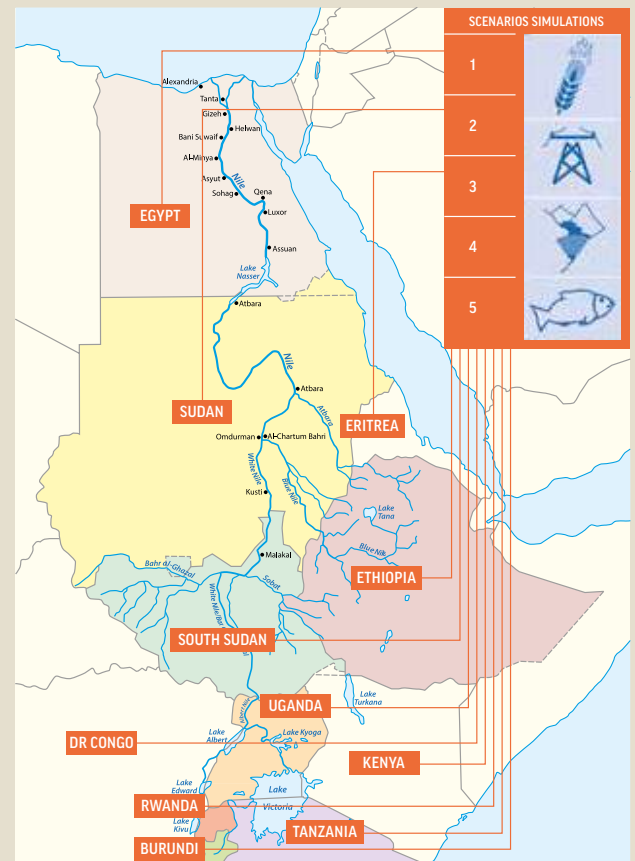
**Origin of funding:** Government of Rwanda and UNICEF

The new Management Information System (MIS) is hosted at the MININFRA and serves the information needs of various stakeholders, including local governments and development partners in the WASH sector.

Services comprised:

- ▶ Preparatory consultations and assessments
- ▶ Design of indicator framework and MIS
- ▶ MIS software development and data collection
- ▶ System testing, training and start of operational use

Image: GeoCodis/Matjaž Ivacic



## THE NILE BASIN DECISION SUPPORT SYSTEM

**Assignment location:** all Nile basin countries

**Client:** Nile Basin Initiative, Shared Vision Program, Water Resources Planning and Management Project, administered by UNOPS

**Origin of funding:** The World Bank

The Nile Basin Decision Support System (DSS) is a shared knowledge base supporting analytical capacity and stakeholder interaction for cooperative decision making in the Nile River Basin. The consultancy enhanced the usefulness of the DSS through identification of user needs and development of the DSS design to meet those needs:

- ▶ Assessment of the situation in the basin following stakeholder consultations
- ▶ Training/awareness building workshops on IWRM & DSS application
- ▶ Development of the web-based Nile Information System
- ▶ Comprehensive assessment of specific needs and DSS requirements
- ▶ Preparation of design specifications
- ▶ Development of a detailed DSS development plan

Image: iStock.com/Rainer Lesniewski



## GIS - BASED WATER SUPPLY & WASTEWATER ASSET MANAGEMENT SYSTEM IN THE KYRGYZ CITY OF MAILUU-SUU

**Assignment location:** Mailuu-Suu City in the Kyrgyz Republic

**Client:** Mailuu-Suu Municipal Enterprise Gorvodokanal, Mailuu-Suu City

**Origin of funding:** European Bank for Reconstruction and Development (EBRD) and Union's Investment Facility for Central Asia (EU IFCA)

Established a complete and up-to-date record of relevant data on Vodokanal properties, plant and equipment and then developed an Electronic Assets Management System integrated with a GIS platform capturing key Vodokanal water assets, including plants and networks.

### Objectives:

- ▶ Develop, supply and create the Mailuu Suu Water & Wastewater GIS at the Vodokanal.
- ▶ Build in-house capacity by providing detailed hands-on and class-room training to Vodokanal staff.

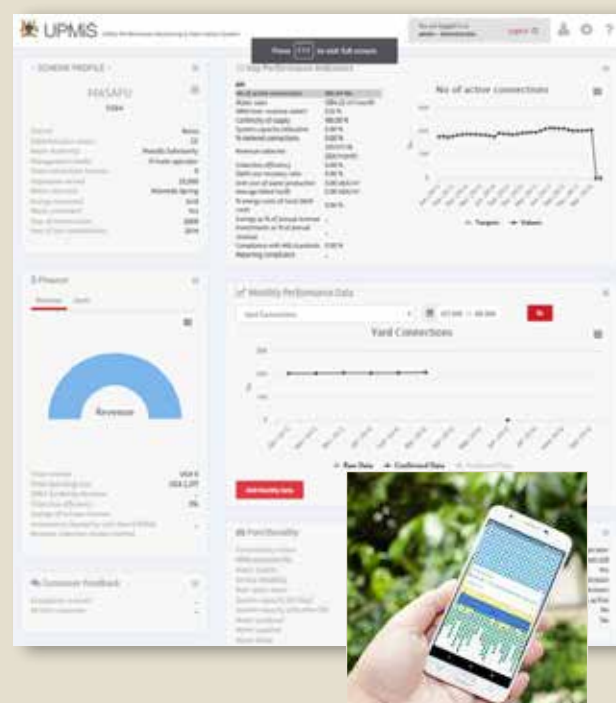
### Project specifics and tasks:

- ▶ Primary and Secondary Data Collection, Asset Inventory and System Survey for the water supply and wastewater system of Mailuu-Suu
- ▶ Development of strategic asset management system and GIS integration
- ▶ Installation of hard- and software at Vodokanal
- ▶ Capacity building and knowledge transfer

### Achievement and Purpose:

- ▶ With a proper GIS and asset management system in place, Vodokanal's water and wastewater services infrastructure can be better managed and maintained.

Image: iStock.com/wei



## IMPLEMENTATION OF A WEB-BASED UTILITY PERFORMANCE MONITORING AND INFORMATION SYSTEM (UPMIS) FOR UGANDA

**Assignment location:** Uganda

**Clients and origin of Funding:** Ministry of Water and Environment, Uganda

The overall objective was the development of an effective O&M framework to improve the quality and sustainability of piped water service delivery for small towns and rural areas.

In the frame of the O&M Technical Assistance, a new, web-based information system for monitoring piped water supply in Uganda Utility Performance Monitoring and Information System (UPMIS) was developed. HYDROPHIL's O&M Technical Advisor was responsible for conceptual design, detailed specification, and monitoring of the software development/implementation of the system. The TA support included the preparation and support of baseline data collection, conceptual design and detailed specification of the system, user training at all levels (from scheme operator to Ministry) and hands-on support during the start-up and integration phase.

Image: GeoCodis/Matjaž Ivačić



# Monitoring and Evaluation



## RESULT-BASED MONITORING OF PUNGWE BASIN TRANSBOUNDARY INTEGRATED WATER RE-SOURCES MANAGEMENT

**Assignment location:** Mozambique, Zimbabwe

**Beneficiary:** Governments of Mozambique and Zimbabwe

**Client and origin of funding:** Swedish International Development Cooperation Agency (Sida)

Monitoring and quality control of the Sida financed programme and its management:

- ▶ Follow-up of the program implementation and performance assessment
- ▶ Monitoring of sub-projects and the programme focusing on achievement of results, efficiency and relevance of activities carried out and programme progress
- ▶ Assessment of quality/implications of programme planning documents & reports
- ▶ Analysis of the institutional and governance set-up of the programme and of the appropriateness of stakeholder participation strategies
- ▶ Identification of weaknesses of the reporting and monitoring system

Image: iStock/guenterguni



## EVALUATION OF THE FINNISH DEVELOPMENT COOPERATION IN THE WATER SECTOR

**Assignment location:** Ethiopia; Thailand; Vietnam; Nepal; Finland

**Client and origin of funding:** Finnish Foreign Ministry (FORMIN)

The main objective of the evaluation was to provide analysis on lessons learned on sustainable use of water resources through the Finnish Development Cooperation over two decades, with the emphasis, e.g., on recommendations on targeting and modalities of the possible future support to the sector.

- ▶ Analysis of the main features of lessons learned of the Finnish aid to the sector
- ▶ Analysis on how past experiences in the sector had affected the share and nature of the assistance to the water sector
- ▶ Professional view of the future projections of aid in the light of lessons learned and the new policy that requires actions on the sustainable use of natural resources and adaptation to climate change.

The evaluation was based on OECD/DAC and EU evaluation criteria. During the evaluation, projects were visited in Nepal, Vietnam, Thailand and Ethiopia.

Image: : iStock/hadynyah

# Our business principles and values

**We work as a team**, bringing forward a wide range of skill, knowledge, perspective, experience, and personality to each project we undertake. We have common fundamental business principles and values.

1

## Professional capability and technical excellence

We pride ourselves on our professional capability. We seek out challenging work and strive to do the best job possible.

2

## Personal approach

We are proud of our personal service - who you see is who you get, which is coupled with our direct and transparent approach.

3

## Respect

We respect those we work with, society and nature. We respect each other in decision making and implementation.

4

## Independence

We attach great importance to our financial independence and the freedom it enables in our work. We provide independent and professional advice.

5

## Freedom and dialogue

We believe in freedom of thinking and good dialogue. We cooperate, share our knowledge and communicate openly and honestly.

6

## Global networks – collaboration and learning

We draw from the experience and knowledge of our extensive network of experts and partner companies. In the water sector, there is no such thing as an off-the-rack project, that is why we value close working relationships built around the right people and organizations. We strive to ensure a learning environment. We work closely with others to generate and share knowledge and skills.



# Where we come from

2020

**Served 100+ clients** in more than 170 projects in 70 countries worldwide

2019

**Start of the cooperation with the Asian Development Bank** in a project in Uzbekistan, **establishment of a branch office in Nairobi, Kenya**

2018

**Establishment of new business lines** „irrigation and agriculture“ and „climate change adaptation“

2014

**100+ internationally financed projects implemented**

2012

**Acquisition of a company specialized in river engineering and flood protection, start of a 6-year technical assistance assignment** in Uganda with a team of long- and short-term experts embedded in the Ministry of Water and Environment

2011

**Preparation of the National Water Master Plan for Albania**, a project financed by the Kreditanstalt für Wiederaufbau (KfW)

2010

**Start of cooperation with the European Bank for Reconstruction and Development and the African Development Bank** with projects in Georgia and Tunisia

2005

**Conversion of the company into a limited company, start of activities in Asia** with a World Bank-financed project in Kyrgyzstan

2003

**Start of company activities in Africa and the Middle East** for the Austrian Development Cooperation

2002

**Foundation of HYDROPHIL** as a spin-off of the University of Natural Resources and Applied Life Sciences; initiated by Mr. Helmut Jung and Mr. Gerald Eder together with other research staff of the university.

2000

**Preparation of a spin-off of the University of Natural Resources and Applied Life Sciences (BOKU)**, which offers independent engineering and consulting services in the water sector in developing countries.

1998

**Development of the first water sector policy of the Austrian Development Cooperation (ADC)**. Intensification of cooperation with ADC with expert services for the procurement of goods and services – across all sectors, representation of ADC in the European Commission's water expert group and preparation of Austrian commitment to the World Bank's Water and Sanitation Programme.

We go where you are.

HYDROPHIL relies on the professional know-how and country-specific experience of its employees. We work closely together with local market leaders who have a particularly high level of expertise in their country.



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