

Seminar on Water Management

Agricultural and Urban Water and Flood Management: a Hungarian and Israeli Perspective

Venue: Hotel Regnum Residence – 8 Ganz Street, Budapest 1025



MINISTRY OF
FOREIGN AFFAIRS AND TRADE
OF HUNGARY



MASHAV
Israel's Agency for International
Development Cooperation



Hungary: Water Management Engineering by Tradition

Hungary has a rich tradition in both engineering and water management, a fortuitous mixture that has enabled Hungarian companies to accommodate our country's demands for high quality drinking water and efficient wastewater treatment processes. The Hungarian water sector covers the entirety of the water management field: flood management, flood protection, drinking water management, wastewater management, irrigation, urban water management and smart city planning, metering technologies, pipeline management (construction, cleaning), water pump management, consultancy services, digital water management (IT services), operation-related services, mobile water purification systems, education and training. In line with global trends, the Hungarian water sector places great emphasis on research and development initiatives, as well as solutions encouraging sustainable development.

A number of firms in the Hungarian water sector have evolved in order to surpass their roles as traditional service providers. These companies now develop and implement technologies that seek to fully exploit the opportunities to be found in the circular economy model. As examples of ingenuity, one might point to some of the following solutions devised by Hungarian actors in the water sector: the utilisation of

energy inherent in wastewater as a source of heat; the filtering and removal of harmful substances in ground and surface water resources; the reduction of non-revenue water; the development of processing systems; the creation of closed-loop, decentralised biological systems; and the development of water retention products used in irrigation.



Hungarian service providers have also demonstrated their excellence in the more traditional areas of the water sector: Hungary has developed solutions enhancing customary methods in the purification of water, while the chemical-free water cleansing methods and products devised and manufactured by Hungarian engineers may well serve to be an integral element of the future's water management.

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Israel: A Global Leader in Water Management and Technology

Israel is a small, densely populated country with few natural resources, especially water. Over 60 percent desert, it is located in a semi-arid climate zone. For thousands of years, the history of the Land of Israel has been influenced by the scarcity of water. In the past decades, Israel achieved a water miracle. It developed novel technologies for conservation, resource management and implementation mechanisms. By adopting a holistic approach to water consumption that encompasses good management, high-tech development and public education, Israel transformed from a water-perched nation to a global leader in the water sector.

With the joint effort of the Israeli government, scientists and companies, Israel has managed to develop cutting-edge solutions. From seawater desalination to water conservation, water recycling, wastewater treatment and water purification – Israel has become a leader in the development of innovative water technologies. Israel recycles over 80% of its sewage, about 92% of the wastewater is treated, and 75% is used for agricultural irrigation. Israel plans to recycle 95% of its wastewater for irrigation by the end of 2025.

Using ingenuity to overcome its serious water challenges, Israel has become the go-to expert for a world facing an impending water crisis. It exports \$2.2 billion annually in water technology and expertise. In addition, these commodities are shared on a humanitarian basis through training courses, consultations and projects. Large Israeli water-tech companies and many smaller Israeli firms are planning and building agricultural and municipal water infrastructure in several countries.

MASHAV - Israel's Agency for International Development Cooperation in the Ministry of Foreign Affairs - offers training programs for experts from all over the world. It aims to share Israel's expertise in research, technologies and best practices in fields related to water management, agriculture and food security.



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VIZITERV Export Ltd.



VIZITERV Export Ltd. was established by the Hungarian Government recently with a view to providing top-quality water management services on an international scale. The General Directorate of Water Management (OVF) possesses the rights of ownership and supervision as well. Utilising the high quality of its human and other resources, the company plays an active role in participating in the preparation, planning and implementation of foreign water management developmental projects. It is uniquely positioned to cooperate and coordinate Hungarian actors in the field.

The professional field focuses on issues that stem from the geographical and climatic conditions of the Carpathian Basin, where we have to be concurrently prepared to manage harmful water surplus and devastating shortage. Accordingly, the competency of VIZITERV Export covers flood and excess water management, river training, water retention (storage), agricultural water management, drought damage control, and regional water distribution facilities. Our experience with monitoring systems, hydrodynamic modelling and database management provides a knowledge base for the implementation of climate change adaptation.

VIZITERV Export is supported by two pillars, both of which fall under the authority of the General Directorate of Water Management.

The first pillar consists of the professional potential of the 12 regional water directorates and their accumulated knowledge base. This expertise comes from the diversity of the directorates, which is exceptionally broad, as the directorates as such cover territories including: flatlands, hills, great lakes and rivers, and transboundary water bodies and management facilities.

The second pillar is based on the resources and capacity of ViziterV Environ, a company founded in 2005 and managed by OVF since 2016. All 120 of its employees are dedicated to water management planning and consulting. The company possesses all the licenses, as well as engineering and technical expertise that are vital for comprehensive water construction planning. The firm's teams consist of experts with decades of professional experience, several of them with international experience (Mongolia, Ukraine, Serbia, etc.). Alongside the more experienced engineers, works an ambitious young team of engineers and economists with excellent language skills.

Manager: **Dr. László Dobi**
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PROGRAMME

Day 1: 12 November 2018

8:30-9:15	Opening Session Ms. Orsolya Kurucz, Head of Department, Department for International Development, Ministry of Foreign Affairs and Trade of Hungary Mr. Fares Saeb, Deputy Head of Mission, Embassy of Israel
9:15-10:00	Some facts about Israel and about agriculture in Israel – Mr. Hezi Bilik
10:00-10:15	Discussion
10:15-10:45	Coffee break
10:45-11:30	Flood management module 1: Danube Flood Risk Management Plan, EUSDR and ICPDR initiatives, Hungarian flood protection measures – Mr. Károly Gombás
11:30-12:15	Some facts about water in Israel – Mr. Hezi Bilik
12:15-12:30	Discussion
12:30-13:30	Lunch break
13:30-14:15	Advanced management tools for urban water and wastewater systems – Mr. Hezi Bilik
14:15-15:00	Flood management module 2: Flood monitoring and forecasting in Hungary – Mr. András Csík (General Directorate of Water Management, Hungary)
15:00-15:30	Coffee break
15:30-16:15	Flood management module 3: Ice observation and management in Hungary – Mr. László Balatonyi (General Directorate of Water Management, Hungary)
16:15-16:45	Summary of the day

Day 2: 13 November 2018

8:30-9:15	Preparation of urban water supply master plan - Mr. Hezi Bilik
9:15-10:00	Redaction of water loss in municipal networks - Mr. Hezi Bilik
10:00-10:15	Discussion
10:15-10:45	Coffee break
10:45-11:30	Examples of new Israeli water and wastewater technologies - Mr. Hezi Bilik
11:30-12:15	Water supply in crisis events - Mr. Hezi Bilik
12:15-12:30	Discussion
12:30-13:30	Lunch break
13:30-14:15	Flood management module 4: Defence against overtopping floods, dike failures and subsoil soaking - Mr. Szabolcs Tóth, Lower-Tisza District Water Directorate, Hungary
14:15-15:00	Flood management module 5: Prevention and defence of local water-related damages, experiences at residential areas - Mr. Szabolcs Tóth, Lower-Tisza District Water Directorate, Hungary
15:00-15:30	Coffee break
15:30-16:15	Flood management module 6: Levee breach and the defence of breaches - Mr. László Nagy, Budapest University of Technology and Economics
16:15-16:45	Summary of the day

Day 3: 14 November 2018

8:30-10:15 **Trip to Szolnok**

Szolnok is located in the heart of the Great Hungarian Plain at the confluence of the Tisza and Zagyva rivers. It lies about 100 kilometres east-southeast from Budapest.



10:15-10:45 **Coffee break**

10:45-12:15 **Presentations by the Middle Tisza District Water Directorate - Mr. Attila Lovas and Dr. Tamás Právetz**

12:15-12:30 **Visiting the historical gauge of Szolnok and the reconstruction of the flood defence wall**

12:30-13:30 **Lunch break**

13:30-16:15 **Field trip along the Tisza River - visiting a flood defence structure reconstruction site and dyke relocation demonstration and observation of an emergency reservoir**

16:15-18:15 **Travel back to Budapest**

Day 4: 15 November 2018

8:30-9:15 **Water supply module 1:** Strategic and economic planning of infrastructure development - Ms. Zsuzsanna Lehoczki, TRENECON Ltd.

9:15-10:00 **Water supply module 2:** Innovative adsorbents for reduction of the arsenic and iron content of the drinking waters and applying these adsorbents, focusing on rural water supply - Dr. István Zádor & Mr. Dániel Horváth, S-Metalltech 98 Ltd.

10:00-10:15 Discussion

10:15-10:45 Coffee break

10:45-11:30 **Wastewater treatment module 1:** Cost-effective operation and improved energy efficiency of wastewater treatment plants - Dr. Miklós Patzinger, Hungarian Water Utility Association

11:30-12:15 **Wastewater treatment module 2:** Purification of rainwaters with ENVIA TRP oil traps along motorways - Mr. Péter Dózsa, Pureco Idea Ltd.

12:15-12:30 Discussion

12:30-13:30 Lunch break

13:30-16:45 **Field trip to the Central Wastewater Treatment Plant of the Budapest Waterworks (Csepel)**

Day 5: 16 November 2018

8:30-9:15 **Urban water management module 1:** Sponge cities, integrated urban storm water management strategies and planning - Prof. János Tamás, University of Debrecen, Faculty of Agricultural and Food Sciences and Environmental Management

9:15-10:00 **Urban water management module 2:** The role of green infrastructure in storm water management at urban environments - Dr. Mónika Kucsák, Szent István University, Ybl Miklós Faculty of Architecture and Civil Engineering

10:00-10:15 Discussion

10:15-10:45 Coffee break

10:45-11:30 **Urban water management module 3:** Experiences of storm water management during heavy rainfalls in Pécs - Mr. László Bicsák, Tettye Forrásház Plc.

11:30-12:30 Recap of the training, Q&A

12:30-13:30 Lunch break

13:30 Training concluded