

# **SEIS Country Visit Summary Report**

## **Israel Success Stories-Depollution of Mediterranean Sea**

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# 1 Introduction

Israel is situated along the eastern shore of the Mediterranean. Due to resource scarcity and lack of awareness, the sea received little attention in the past. This situation changed when the sea became in recent years an essential resource with regard to energy and water supply.

Israel suffers from an ongoing shortage of water. The situation is worsening due to the decrease in useable water reserves as a result of pollution and climatic changes, as well as population growth and the rising demand for water.

Israel resorts to unconventional water resources such as desalination of sea water and has established several desalination plants along the coast.

Reuse of waste water for irrigation, also one of the solutions that have been developed and implemented by Israel to overcome the water shortage, leading to production of quantities of sludge.

The growing population also led to an increase of the volume of solid waste going into landfills.

To overcome all this environmental issues a lot of efforts have been put, **with success** by tackling the main sources of pollution waste, waste water and industrial emissions.

This report aims at sharing the success stories by giving an overview of the efforts made in different sectors to better control the pollution and gives an overview about the information systems built in the recent years to ensure data availability and accessibility.

The visit to Israel is the first country visit organized under the ENI SEIS II South support mechanism project. David Stanners, Cécile Roddier-Quefelec, Michael Assouline from the European Environment Agency, Erol Cavus from UNEP and Sabah Nait from the Austrian Environment Agency participated in the mission, which took place on 7-8 March 2018. In order to optimize this two-day visits, the discussions took place in the form of a workshop, attended by representatives from the Central Bureau of Statistics (ICBS), different departments of the Ministry of Environmental Protection (MoEP) (waste, hazardous waste, water and industry, marine environment), Israeli Water Authority, Israel Oceanographic and limnological Research Institute and the Ministry of Infrastructure. The workshop was organized at the premises of the Ministry of Environmental Protection and the second day in the Bureau of Statistic. The [agenda](#) and [list of participants](#) can be found in Annexes 1 and 2. Detailed state of play concerning the Israeli monitoring, data collection, statistical surveys and information systems in the areas of water, waste and industrial emissions were presented.

The purposes of the visit were:

- To identify country-specific gaps and needs in content, infrastructure and institutional cooperation; where specific support could be provided
- To take stock of the progress and achievements achieved since the last country visit in 2011

## 2 Success story 1: Industrial emission: cessation of Shafdan emissions

The largest waste water treatment plant (WWTP) Shafdan used to discharge each day around 16,000 m<sup>3</sup> wastewater sludge, through a 5 km long carrier pipe, sludge into the Mediterranean Sea. Sludge discharges constitute the vast majority of organic pollutants, heavy metals, and nutrient loads that reach the Mediterranean in Israel. After investigating a range of solutions for land-based handling of Shafdan WWTP sludge, Israel has decided to also promote the agricultural solution for handling the sludge which means processing of the sludge and spreading it on farmlands as a fertilizer as it provides a suitable environmental, solution. The agricultural alternative was based on the construction of 8 large volume anaerobic digesters and that allow the treatment of the sludge to a level defined in the regulations that can be used by the farms. This process was a very long one it took almost 17 years before the anaerobic digestion started in January 2017 as result of completion of several steps including enforcement steps, alternative solutions examination and international agreements and national legislation, including the implementation of a special "marine discharge fee".

The elimination of the sewage sludge into the sea, brings the reduction of the majority of pollutants to a scale of 90-99% reduction, compared to the 2008 budget of pollutants to the sea.

With this success, only one hot spot remains to be tackled in Israel, namely the brownfield of the factory in the northern Haifa Bay area, which was closed in 2004, and which is leaching mercury and other organic pollutants into the Haifa Bay waters, by underground brackish waters.

## 3 Success Story 2: PRTR

The launch of Israel's Pollutant Release and Transfer Register (PRTR) was facilitated by international and national developments: the country's commitments to the OECD and its accession to the UNECE Kiev Protocol in January 2013 and local development: the ratification of the Environmental Protection (Releases and Transfers to the Environment –Reporting and Registering Obligations) Law in April 2012. The law requires facilities with significant impact on the environment to report on their emissions of 114 pollutants – 88 pollutants emitted to air and 94 pollutants emitted to water, marine environment and soil, as well as on their transfers of waste.

The industries have the obligation to report data and the MoEP has the obligation to maintain the data in IT system and publish it to the public.

Israel's PRTR was officially launched in December 1, 2013, when data of 2012 was published. The PRTR report includes emissions released to air, water, sea, rivers and soil or transferred offsite for treatment and disposal of waste and waste-water, and is published on a dedicated website of the Ministry of Environmental Protection. The reports include more information than the European PRTR, it includes for example classification of waste according to the waste catalogue, and Basel convention classification (in case of hazardous waste). It includes also the destination of transfer and type of treatment and disposal. Under Israeli PRTR 74 activities have to report, (the Kiev Protocol mentions 70 activities). Production of oil and gas, desalination plants, asphalt production and waste transfer station have been added.

By adding the waste transfer station and classification based on the waste catalogue the database became more comprehensive.

The data are based on reports received from different facilities, including industrial plants in the energy, chemistry, minerals and other sectors, landfills and transfer stations, wastewater treatment plants. The reports are checked and analysed by the MoEP prior to publication for both completeness and quality.

The system is built in way to make different queries and generate different type of reports.

The Hebrew website is searchable according to such parameters as facility, sector, pollutant, group of pollutants, location and medium. Information on each facility including name, type of activity and contact details is available along with the reported data.

The emissions reported are available on the website for discharge to the sea of total organic carbon (TOC) and other relevant contaminants from the Shafdan wastewater treatment plant. As mentioned above the pipeline was closed, and sludge is no longer discharged into the sea.

## 4 Success story 3: The development of a data system for Municipal Solid Waste

Israel generates some 5.3 million tons of solid waste each year, or 1.7 kilo per person per day. Based on a business-as-usual scenario and an annual population growth rate of 1.8%, this number is expected to grow to 6.7 million tons in 2030. Over the past decade, the Israel Ministry of Environmental Protection (MoEP) has allocated large sums for the development of waste treatment infrastructure and a range of recycling initiatives. Despite this, according to the Israeli Central Bureau of Statistics only 21% of the country's municipal solid waste (MSW) is currently recycled and most of the waste is still sent to landfills, which are fast approaching maximum capacity.

In 2017, the MoEP developed a new National Waste Management Strategy, focusing on the development of waste treatment infrastructure such as Materials Recovery Facilities (MRFs), Anaerobic Digestion and composting sites and Waste to Energy facilities.

This approach was taken after analyzing the current situation at a national and local level. Israel lacks sorting facilities, RDF (refuse derived fuel) is at initial stages of development and there is no waste to energy in Israel at the time being. According to the new strategy to be implemented until 2030, recycling will reach 50% and recovery will be over 20%, reducing landfilling to less than 30%. These ambitious targets can be reached based on current legislation (Landfill levy, EPR laws) and by the development of infrastructure at a national level.

With regards to legislation and reporting, Israel enforces Extended Producer Responsibility (EPR) laws, such as the Beverage Deposit Law, the Tires Law and Packaging Law. All laws define reporting obligations and include legally binding mechanisms. With regards to plastic, the most recent Law to be enforced in 2017 is the Plastic Bags Law prohibiting the free distribution of plastic carrier bags in all large supermarket chains.

The Municipalities pay a landfill levy for the waste produced by them and sent to the landfill. The Ministry is in charge of collecting the landfill levy and the plastic bags levy. The funds are

managed by the Ministry and the budget is invested in improving waste management, increasing recycling and preventing air pollution.

Over the past 3 years, MoEP has invested in developing and operating a new Waste Data System that will connect all waste treatment facilities to a data system.

Why a waste data system:

- ✓
- ✓ Very important for strategic planning at a national level and for setting goals and obviously knowing if the goals have been reached.
- ✓ There are no legally binding recycling targets for municipal waste (landfilling and biodegradable waste) currently, but there are targets for EPR laws. Everything done until now is based on information provided on the voluntary basis by the local authorities. Collecting more accurately the data and in periodic manner.
- ✓ It is also important data for decision making especially for the MoEP to know what to invest in and how much waste generated and treated.
- ✓ For monitoring environmental impacts especially in landfills.
- ✓ For the private sector, plan the business model and eventually for risks assessments based on more accurate data.
- ✓ Integrating the Data reports of EPR laws.

The MoEP is currently developing an IT platform and all the landfills, sorting facilities and transfer stations are required to develop their own software in order to be able to connect to the IT platform.

The collection of waste data at the landfill equipped with weighbridges and software is relatively easy since, all vehicles entering the landfill are weighed on the way in and on the way out. Currently data is stored in the weighbridge software and is made available through printed waste reports to the ministry of environment. The idea is to build an interface that connects the landfill weighbridge to the IT platform so the data is fed directly into the IT platform.

So far, 9 out of 13 MSW landfills have been connected to the IT platform, which is a big success. The remaining landfills will be connected during the course of the year. The problems encountered during the connection are related mainly to the fact that the landfill weighbridges have different software's, so it is not possible to have a "one program fits all solution". Each landfill should find its own solution to connect to the IT platform.

The MoEP intends to connect in the first phase 40 landfill sites and transfer stations and later on all the recycling facilities (150). MoEP is already planning to connect the treatment facilities for construction and demolition waste and initial steps have been undertaken.

The landfills and treatment facilities need to report on the type of waste disposed or recycled. Israel is not using the European list of waste which would have foreseen all the possibilities but using their own list of waste and still in the process of exploring the use of the European list of waste.

As there is no law to enforce the use of the IT platform the reporting requirements are described in the business license for all waste facilities.

The final stage of the implementation is to connect all the Local Authorities to the Waste Data System. This will enable MoEP to complete the waste cycle from the waste production end to the treatment end. There are 255 Local Authorities in Israel and there are large gaps and

differences between regarding Waste Management. Implementation of a Waste Data System will require investment, training and changes in legislation.

## 5 State of Environment Report

The Ministry of Environmental protection published in February 2018 it's latest [State of the Environment in Israel: data, indicators and trends](#), the last SoER was published in 2010. MoEP issues a SoER every 5 to 7 years. The report provides a broad, comprehensive and unprecedented look at environmental changes in Israel over the past decade through the use of multi-year data and indices. It examines trends and highlights areas of concern or note, such as the exploitation of natural resources and the transition to exploitation of marine resources, climate change, waste and consumption, risks of relying on technologies for resources, and more. Prepared by the office of MoEP Chief Scientist, the report is based on a large compilation of available data and indicators from ICBS and relevant national agencies. All source datasets used for the compilation of the report are available online. The report points out the increased pressure from population density and growth, in particular in the coastal areas, where most of the population live. The population is expected to reach 17 Million by 2030 hence putting more pressure on the natural resources which are already scarce.

In 2010 Israel became a member of the OECD, hence many reforms took place in the field of environmental legislations with positive impact on environmental trends – see success stories on the closure of Shafdan WWTP, PRTR development. It should be noted that despite growing efforts within the last decade, there is still important data limitations (availability and access).

## 6 Inter-institutional cooperation

Even though there is no official SEIS team comparable to the other ENI countries, there is routine cooperation among stakeholders. The institutions work together and contribute to the elaboration of environmental information. The institutions disseminate data and information on their websites and produce various related publications, and reports to national and international organizations and contribute to the compilation of the state of the environment report.

## 7 Further national activities to be covered under ENI SEIS II South

- A study tour on Municipal Solid waste and Hazardous waste (October 2018);
- A national workshop on setting-up quality standards for urban runoff and recommendations for its management (tentatively June 2018)
- A national workshop on waste prevention and reduction at source (tentatively June 2018)