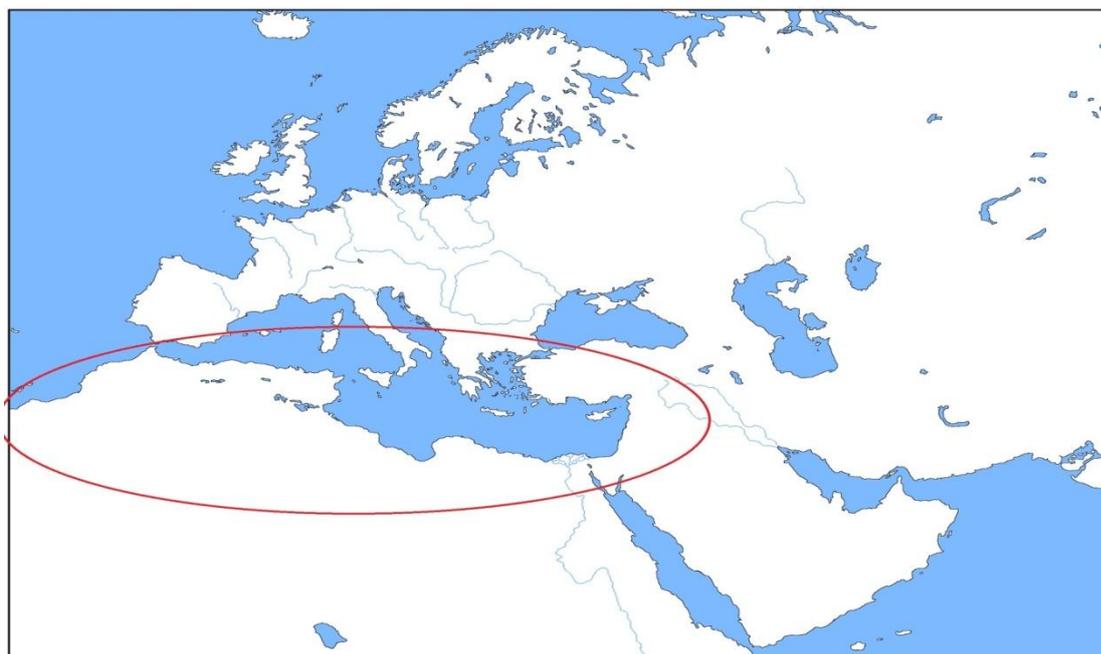


EUROPEAN NEIGHBOURHOOD AND PARTNERSHIP INSTRUMENT
Towards a Shared Environmental System « SEIS »

ISRAEL COUNTRY REPORT



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List of acronyms

CBS: Central Bureau of Statistics

GFSM: Government Finance Statistics Manual

GHG: Greenhouse Gases

GIS: Geographic Information System

IOLR: Israel Oceanographic and Limnological Research

IPPC: Integrated Pollution Prevention and Control

ISRAMAR: Marine Data Center for Israel's Oceanographic Data

MoU: Memorandum of Understanding

MoEP: Ministry of Environmental Protection

MOI: Ministry of Interior

MAI: Manufactures Association of Israel

MSW: Municipal Solid Waste

NGO: Non-Governmental Organization

OECD: Organization for Economic Cooperation and Development

PRTR: Pollutant Release and Transfer Register

UNECE: United Nations Economic Commission for Europe

Introduction

This report aims to give an overview on the existing and available environmental data flows and information in Israel and to analyse the potential of the country to implement a Shared Environmental Information System (SEIS). The report focuses on three thematic areas agreed on during the consultation meeting of the ENPI (European Neighbourhood Partnership Instrument) - SEIS in Brussels in November 2010: water (fresh and marine) and wastewater treatment, industrial emissions and waste management. For the purpose of this report, a questionnaire has been sent to select key persons in relevant institutions in order to gather the needed information and data to compile this report.

The report has been compiled according to the ENPI-SEIS template:

Chapter 1 describes the different institutions and their mission to produce and use environmental data and information in Israel and analyses the inter-institutional cooperation and linkages among the different institutions. Chapter 2 describes the legal basis for the covered thematic areas and the derived reporting obligations at national and international levels. In addition, brief information is provided on the country's datasets and data flows, including the format and frequency of data production. This chapter also describes the existing environmental indicators and publications. The third chapter is dedicated to infrastructure and the existing monitoring systems and the last chapter presents future planned activities.

This report has been prepared by Dr. Orna Matzner from the Israeli Ministry of Environmental Protection and Dr. Moshe Yanai from the Central Bureau of Statistics, the national focal points with the support of Ms. Sabah Nait from the Umweltbundesamt, within the framework of the ENPI-SEIS (South) project.

1. Institutional Framework

1.1. Ministries and institutions:

Ministry of Environmental Protection:

The major environmental authority in Israel is the Ministry of Environmental Protection (MoEP), which was established in December 1988 in order to protect the country's natural resources, to abate and prevent environmental nuisance and to achieve safe treatment of contaminants and pollutants.

The MoEP operates on three different levels: national, regional and local. At the national level, the ministry is responsible for formulating an integrated and comprehensive national environmental policy and for developing specific strategies, standards and priorities for environmental protection and natural resource conservation.

At the regional level, the ministry operates through six district offices: North, South, Center, Tel Aviv, Jerusalem and Haifa. The offices are responsible for implementing national environmental policy, participating in land use planning processes, guiding local environmental units, formulating environmental requirements in business licenses of large enterprises, monitoring and enforcing compliance with environmental requirements and advancing environmental regional projects.

At the local level, the ministry is responsible for the professional operation of 41 municipal environmental units, as well as regional environmental units and associations of towns. The local units are responsible, among others, for environmental planning, noise nuisances and waste management, recycling and environmental education. Some of these units are also responsible for air pollution monitoring and wastewater treatment facilities.

The administrative structure of the Ministry of Environmental Protection includes over 30 divisions. Most of these divisions deal with those environmental issues that are within the responsibility of the MoEP and operate under the responsibility and coordination of five deputy directors.; while a handful of the divisions are directly under the responsibility of the Director General (e.g. legislation, Chief Scientist, budget, spokesperson and auditing).

The Minister of Environmental Protection also has the ministerial responsibility for the following bodies:

- Yarkon River Authority
- Kishon River Authority
- Nature and Parks Authority
- Environmental Services Company

The divisions responsible for ENPI-SEIS (south) themes are:

Theme	Sub category	Division
Water	Streams	Water, Sewage & Stream Division
	Wastewater	
	Marine & coastal environment	Marine & Coastal Environment Division
Industrial emissions	Air pollution	Air Quality and Climate Change Division
	Industrial wastewater	Industrial Effluents, Fuel & Soil Pollution Division
	Hazardous waste	Hazardous Substances Division
	PRTR	IPPC Unit
Waste	Municipal waste	Solid Waste Division
		Packaging Division

The MoEP is responsible for organizing the collection, analysis, management and dissemination of information and data related to the environment and is committed to the public through the newly promulgated Freedom of Information Regulations (2009) providing access to information which is available to the public on the MoEP's website:

http://www.sviva.gov.il/bin/en.jsp?enPage=e_homePage

The Office of the Chief Scientist promotes environmental research needed for stakeholders, promotes innovative technologies, development of environmental indicators and is charge of interdisciplinary themes such as Climate Change Adaptation and Environmental Health.

The MoEP has published a report on The Environment in Israel - Indicators, Data and Trends 2010. The publication is based on an unprecedented number of indicators, mostly environmental, but with some relating to economic and social fields as well. The report reflects the state of the environment in Israel in a wide range of fields, giving an indication of trends, as far as they exist, in the state of the environment, the state of pollution and the state of the treatment of problems, identifying knowledge gaps and making comparisons of selected indicators with regard to other developed western countries. The report consists of four parts: Background Information, Environmental Resources – Quality and Use (land, air, water, sea, biological diversity), Pollution and Environmental Damage and Waste treatment.

Central Bureau of Statistics:

According to the law (The Statistical Ordinance), the Central Bureau of Statistics (CBS) is the agency responsible for the collection, processing and publication of official statistics on the population and its activities in society, and on the economy and its various branches. The CBS is affiliated to the Prime Minister's Office.

The CBS collects and publishes data, inter alia, on the environment and environmental indicators. These data include information on air pollution, greenhouse gases, waste, and water resources and water quality, biodiversity and environmental expenses:

http://www1.cbs.gov.il/reader/cw_usr_view_Folder?ID=141

The CBS is committed to complying with internationally recommended methods and professional standards for producing statistical information. The current involvement of CBS experts in various statistical projects, task forces, working groups and conferences strengthens the consistency of the Israeli statistical system with the International Fundamental Principles of Official Statistics. Moreover, Israel was accepted into the OECD in 2010 and its statistics are in the process of further harmonization and standardization, on an ongoing basis. The effort made by international organizations to agree upon the same standards with regard to official statistics will enable the CBS to accelerate the implementation of those standards.

A working group for the coordination and standardization of government statistics, which includes representatives from the Budget Department and the Accountant-General's Department at the Ministry of Finance, and the National Accounts division at the CBS, has been established in order to promote the compilation of fiscal data according to the Government Finance Statistics Manual (GFSM) 2001. The first meeting of the group was held at the beginning of February 2006. Coordination and standardization of other macroeconomic statistics is also underway, especially of statistics on financial corporations.

A Memorandum of Understanding (MoU) between the CBS and the Bank of Israel was signed in September 2008. This MoU cements the relationship between the two institutions in an official document agreeing a division of responsibilities, shared working processes, quality criteria, a cooperation and development mechanism, a mechanism to settle disputes, etc. The coordinators of both institutions are expected to prepare joint annual work plans and to update both institutions with information needed for their efficient and good functioning.

The CBS collects environmental data from other ministries (MoEP, Ministry of Water and Energy, Ministry of Health etc.) and from various industries. It annually publishes environmental data within the Annual Statistical Abstract and other publications, such as Expenditure on environmental protection in the manufacturing and electricity industries, Satellite account of water in Israel and Sustainable development indicators in Israel.

http://www1.cbs.gov.il/reader/?Mival=cw_usr_view_SHTML&ID=441

The involvement of the main national environmental monitoring and reporting bodies in the MEDSTAT II-Environment project has further strengthened national capacities to produce and publish complete, reliable and relevant environmental statistics and indicators. This collaboration led to the publication, in 2006, of the “Environmental Indicators Compendium”. The data presented in the compendium reflect the environmental conditions in Israel at that time, as well as core trends, wherever reliable supporting data were available. The compendium consists of six chapters: General (including geography, demography and public expenditure on the environment), Land and Land Conservation (including land cover and biodiversity), Air Quality (including pollutant emissions, pollutant concentrations and greenhouse gas emissions), Water, Waste and Sustainable Development Indicators. Greenhouse gas emissions (GHG), biodiversity and sustainable development indicators were all themes developed under the MED-ENV II project.

The Ministry of Energy and Water (National Infrastructures):

The Ministry of Energy and Water is responsible for planning and developing the national infrastructures, the most important ones being water and energy resources. As to water, the Ministry is in charge of the Governmental Authority for Water and Sewerage (Water Authority), which was established in 2007, in order to concentrate Israel’s water governance within one single administrative body. The Water Authority is responsible for the management, allocation and protection of the country’s water resources, from water abstraction to sewage treatment. This includes: regulating the production, supply and consumption of water; designing and implementing water supply schemes; preventing water pollution; and regulating water pricing. The Water Authority is subordinate to the Ministry of Water and Energy, but its Council is an interagency body composed of high-level representatives of the Ministry of Water and Energy, the MoEP, the Ministry of the Interior (MoI) and the Ministry of Finance.

The hydrological data is provided by the hydrological service unit under the Water Authority. Information on water levels in Israel’s aquifers and especially the Sea of Galilee, Israel’s major surface water source, is provided to the public on both the internet and in the media. Education on water efficiency and conservation is integrated into the school system and public campaigns on water saving and conservation measures. The education programs include information about water saving devices such as double volume toilet flushing basins and pressure regulators on taps and showers. Information regarding advanced technologies for water-efficient irrigation is provided to farmers and information on water saving plans is provided to the public on the websites of the Israel Water Authority and "Mekorot" (The Israel Water Company).

Israel Oceanographic and Limnological Research (IOLR):

The IOLR is a national research institution (non-profit governmental corporation) which was established in 1967. Its mission is to generate knowledge for the sustainable use and protection of Israel's marine, coastal and freshwater resources. IOLR conducts scientific research in the fields of oceanography, limnology, mariculture and marine biotechnology. The Israel Oceanographic and Limnological Research station monitors the quantity and quality of

water along the coastline of the Mediterranean Sea.

The Ministry of Health:

This ministry is responsible for drinking water quality, water quality in recreational areas, the quality of wastewater treatment and of recycled wastewater used in agriculture, and the safe management of toxic waste from hospitals.

Its responsibility for the quality of drinking water falls within the framework of regulations concerning the sanitary quality of drinking water under the public health ordinance. The ministry is involved in the provision of preventative environmental health services (monitoring and preventing environmental health hazards) and in protecting public health. It is responsible for the country's drinking water quality and for monitoring and regulating chemicals and pesticide residues in food. The Ministry of Health uses air quality data disseminated on the Ministry of Environment's website in order to estimate the exposure of the population to air pollution. In addition, researchers use these data for their environmental and epidemiological studies. The Ministry of Health is also responsible for the regulation of hazardous substances in medical and pharmaceutical products, cosmetics, food additives, pesticide residues in food, and cumulative health impacts.

Local environmental initiatives:

In 2003, the MoEP, in consultation with NGOs, developed "Ten Principles of Sustainable Management in Municipal Government" to help local government officials implement environmentally sustainable practices in areas such as the management of local natural resources, public participation in government, public procurement, protection of open spaces, education, transportation policy and waste management. The "Ten Principles" have become the conceptual basis for promoting local sustainability in Israel. Many local authorities in Israel either actively engage in national environmental initiatives or launch their own programs, primarily driven by public awareness and citizen pressure. In 2008, for example, 18 major Israeli municipalities signed the Convention of the Forum 15 for Reducing Air Pollution and Climate Protection, calling for the development of municipal master plans with clear, measurable targets for reducing urban greenhouse gas emissions and air pollution. Local action plans in a number of municipalities include measures to encourage public transportation, energy conservation in buildings, waste recycling and the development of green spaces. The Israel Center of Regional Councils has initiated the formulation of strategic plans for sustainable development. Some local authorities are developing indicators with which they can present their achievements to local residents and compare their performance with that of other municipalities (EPR).

The Standards Institution of Israel - (SII):

SII is Israel's official body for the preparation and publication of Israeli standards. SII is a Non-Governmental Organization with a unique status spelled out by "The Standards Law of 1953 ."According to this law, the purpose of SII is to prepare standards as well as to ensure the quality of products which are produced locally or imported. These standards cover also environmental issues. Today SII incorporates Standardization, Testing, Certification and Training activities under one roof and has laboratories in almost all areas of technology,

providing testing and inspection services to industry and commerce, as well as regulatory services to government.

The Manufacturers Association of Israel (MAI):

On behalf of the chemicals industry, the MAI became a member of in the international Responsible Care and Product Stewardship programs in 2001. Twenty-seven leading Israeli chemical firms, including the country's largest, have accepted Responsible Care commitments which focus on constant improvements in environmental health and safety as well as transparency in order to make data available to the community regarding the companies' activities, products and performance. The MAI also handles the certification of industrial facilities under ISO 14001 environmental standards.

Cleaner Production Center:

The Israel Cleaner Production Center was established in 2001 by the MoEP and the Manufacturers Association of Israel at the headquarters of the Association in Tel Aviv. Since Israel's environmental problems largely relate to water scarcity, soil and aquifer salinization by effluent irrigation and to limited land reserves for waste disposal and treatment, the Center has initially concentrated on the following activities: reduction of solid and hazardous waste at its source and by recycling it; and reduction of brine emission to the environment from industrial processes. The Center maintains a waste material exchange bulletin board, which facilitates the reuse of waste components produced by one plant as materials for another plant. As the exchange of waste materials through the bulletin board is anonymous and voluntary, no specific data on waste reuse and recycling are available. The MoEP is currently upgrading the website to broaden participation and stimulate exchange.

Other ministries are also involved in the production and dissemination of environmental data, such as the following: Industry, Trade and Labor (MITL), a key public actor in the field of innovation and eco-innovation policy; Housing, responsible for data on the housing sector; Social Affairs for data on poverty-related issues and Transport for transport related issues.

1.2. Inter-institutional cooperation:

The institutions mentioned above work together and contribute to the elaboration of environmental information. The institutions disseminate data and information on their websites and produce various related publications, including booklets, bulletins (the Israel Environment Bulletin, a semi-annual publication available online) and reports to national and international organizations on different aspects of the environment, CBS publications and more.

A good example of inter-institutional cooperation is the GIS Forum. This forum consists of various ministries and institutions with a common goal – namely to enhance the existing geographic data available to government and other public bodies. The cooperation covers the following: data and metadata sharing, GIS knowledge, technology and standards, with more than 900 different layers of a wide range of topics and thousands of other rasters which are

made available to the 26 forum members. In addition, the forum has enabled the establishment of a GIS portal, which is available to the public. Shared environmental data refer, inter alia, to collection centers for recycling, asbestos disposal sites, sewage treatment facilities, sensitive open space, forests and biodiversity observations.

Another example is the cooperation among the MoEP, the Ministry of Health and Academia in the field of air quality monitoring and public health. The Ministry of Health uses air monitoring data in order to estimate the exposure of the population to air pollution. In addition, researchers use these data for their environmental and epidemiological studies. The data are also used to determine air quality standards. In addition, there is an interface with the Ministry of Health during days of high air pollution, where the MoEP alerts the public by publishing information on how to act as well as instructions for pollution sources to reduce emissions. Some of these high pollution days are caused by natural sources (dust storms).

Current inter-institutional cooperation is mainly based on ad hoc or routine requests coming from the ministry or an institution to be dealt with by another, without a common information system. The Ministry of Environment is planning to establish a shared environmental information system in order to improve data sharing and availability, both for the institutions and the public.

2. Content

2.1. Country reporting obligations

2.1.1. National legislation

2.1.1.1. General

Environmental provisions in Israel are included in a wide range of legislative instruments rather than in a single environmental law. In addition, there are several cross-sectoral laws that include environmental considerations. Israel's environmental legislation encompasses laws for the protection of natural resources (environmental protection law, air, water and soil), for the abatement and prevention of environmental nuisance (prevention of pollution of air, water and marine and noise), and for the safe treatment of contaminants and pollutants (solid and liquid waste, hazardous substances and radiation).

The cross-sectoral environmental laws of Israel include:

Environmental information law: Israel's Freedom of Information Law enables individuals and public organizations to request information from a public authority. It is the first piece of legislation that enables the public to have access to governmental data. In order to get access to governmental data, the citizen can request data from public administrations without giving any reasons. The government may deny such public requests only in selected cases (national security, trade secret, etc.). The law was amended in 2005 and now relates specifically to the publication of environmental information relevant for public health. Public administrations and governmental institutions are obliged, under this amendment, to publish all their data (including raw data) falling within the scope of the Freedom of Information Law and to list all available data, even if they have not been published for some reason.

Environmental Protection Law (Polluter Pays) (Legislative Amendments) 2008: The aim of the Polluter Pays Law, which was enacted in July 2008, is "to protect and preserve a proper quality of the environment and to improve it, to prevent damage to the environment or to public health and to negate any economic benefit obtained while causing damage to the environment, inter alia, by means of penalties that take account of the value of the damage caused, the benefit derived or the profits reaped from implementing the offences dealing with the aforesaid damage."

2.1.1.2. Water

Water Resources:

The Water Law of 1959: It establishes the framework for the control and protection of Israel's water resources. The law states that all water sources in Israel are public property and that every person is entitled to use water, as long as such use does not cause the salination or depletion of the water resource. Water may be used only after obtaining a permit issued by the director of the water authority, and only for those purposes specifically mentioned in the water law (domestic, agricultural, industrial, commercial, public services and ecological uses). In 1971, the law was amended to include prohibitions against direct or indirect water pollution, regardless of the state of the water beforehand. The MoEP is authorized to protect

water quality, to prevent water pollution and to promulgate regulations relating to these issues.

Potable Water and Source-Water Quality Laws - Public Health Regulations (Sanitary Quality of Drinking Water), 1974: These laws have been designed for the safeguarding of public health by determining high quality standards for potable water. Various tests and parameters are defined in these laws as well as threshold values for testing.

Marine and coastal environment:

Prevention of sea pollution (dumping of waste) Law 1983: This law prohibits the dumping of any waste from vessels or aircraft into the sea. A permit for the dumping of waste has to be obtained from the inter-ministerial committee headed by the Ministry of Environmental Protection.

Prevention of Sea Pollution from Land-Based Sources Regulations, 1990:

These regulations relate to permits for the discharge of waste or sewage into the sea from a land-based source which may or may not be granted by the Permits Issue Committee. Permits are only issued under special conditions, for example in cases where waste or wastewater does not contain toxic materials which are harmful to the marine environment, as specified in the annexes to the regulations. In cases where such materials are contained in the waste, the plant must prove that it has undertaken every effort and used the best available technology for the treatment of the waste prior to its discharge into the sea. The conditions and criteria for the granting of permits and the types of waste and wastewater which may not be discharged into the sea have been established in accordance with the provisions of the Land-Based Sources Protocol of the Barcelona Convention.

Protection of the coastal Environment law 2004: This law establishes principles and limitations for the sustainable management and use of the coastal environment and aims to protect and preserve the coastal environment and coastal sand for the benefit of the public.

Water Pollution:

Cesspools and Septic Tanks, 1992 Regulations: These regulations impose prohibitions and restrictions on the construction of new cesspools and septic tanks and on existing ones, including timetables for the gradual elimination of cesspools under certain conditions. The regulations prohibit the construction of cesspools for industrial wastes and prohibit the construction of domestic cesspools in settlements in which sewage systems already exist.

Effluent quality standards and rules for sewage treatment 2010 (Inbar Standards): The aim of this regulation is to protect public health and to prevent the pollution of water resources from effluents and sewage. The regulation also gives a list of 36 parameters and corresponding limit values (BOD; COD, PH, total nitrogen etc.) Additional provisions in the regulation relate to the preparation of monitoring and control plans to check the quality and quantity of sewage discharged to a wastewater treatment plant and to sampling and testing, at defined

frequencies, at the exit of the wastewater treatment plant. The monitoring plans and the results as well as sampling and test results have to be published on the websites of the MoEP, Ministry of Health and Water Authority.

This series of laws regulates water quality in detail throughout the entire water and wastewater sector and covers the following topics:

- The variables that must be sampled
- The acceptable limits for each variable of interest
- The locations from which the samples must be taken
- The methods to be applied for taking the samples
- Minimum sampling frequency
- Reporting response and subsequent procedures if any limits are exceeded

Water Regulations (Prevention of Water Pollution) (Wastewater Transport System), 2011:

These regulations require the local authorities to maintain the wastewater transport system in such a way that will ensure prevention of leakage and environmental hazards. In addition, the regulations stipulate that current data on the transport system must be kept in computerized and GIS systems and that these data must be published.

Desalinated Water Quality Laws:

Currently the Potable Water and Source-Water Quality Laws (described above) do not include laws for monitoring desalinated water (since desalinated water is a fairly recent addition to the national drinking water supplies). Amendments and additions are currently underway for revised drinking water quality laws. They will specify monitoring procedures for desalinated water quality.

2.1.1.3. Industrial Emissions

GENERAL

The Abatement of Nuisances Law 1961: This law was the main legislative instrument for controlling air pollution until the Clean Air Law entered into force in 2011. Under this Law, the Minister of Environmental Protection can give administrative orders to operators of existing industrial and energy facilities indicating specific requirements to prevent and reduce their emissions.

The Licensing of Businesses Law 1968: This law aims to insure that industrial plants take appropriate measures to prevent or minimize environmental and other nuisances. The law is implemented by granting industrial plant permits which contain a set of operating conditions and environmental performance requirements, including environmental monitoring and reporting.

IPPC: In 2006, Israel decided to adopt the main principles of the IPPC Directive (Integrated Pollution Prevention and Control Directive of the European Union) for the permitting process of large industrial facilities, including the implementation of BAT, site-specific permit conditions, environmental standards and benchmarks, integrated permits and public participation. According to the 2007 national air pollution inventory, these IPPC facilities, making up 10% of the total industry, are responsible for 80-90% of pollutant emissions into the air. Emissions to water and soil are assumed to be of a similar magnitude. Some 150 major plants, currently subject to management under the Business Licensing procedures, are gradually being transferred to an IPPC framework, within the Business Licensing framework. During the last two years a few important steps towards the implementation of IPPC policy were made by the MoEP. The main focus was on aspects of reduction of air, soil and industrial wastewater pollution. A study of IPPC requirements was carried out by the Ministry and an implementation plan was prepared.

AIR POLLUTION

The Clean Air Law 2008: This law provides for a comprehensive framework for the treatment and prevention of air pollution by setting responsibilities and imposing obligations on the government, local authorities and the industrial sector.

Among the provisions of the Clean Air Law are the following requirements:

- A new regulatory framework for setting stationary and ambient emission standards, providing for regular revision of air quality standards for air pollutants.
- Preparation of a national plan for the reduction of air pollution.
- Procedures for monitoring and assessment of air pollutants, compilation of air quality data, and air pollution forecasts.
- Emission permit requirements for major industrial sources of pollution.
- Concentration of enforcement procedures and penalty frameworks within one statutory body.
- Obligations of local authorities to prevent and reduce air pollution within their jurisdiction.
- Conferring authority upon the Ministry of Environmental Protection to deal with vehicular pollution.

INDUSTRIAL WASTEWATER

The Model Local Authorities By-Law (Discharge of Industrial Sewage into the Sewage System) 1981: It sets forth prohibitions against the discharge of sewage from an industrial plant into the sewage system, as well as requirements for sewage checks and tests and the presentation of the results of such tests to the head of the local authority, and the requirements for granting designated plants a sewage discharge permit. The law also establishes a sewage tariff to be imposed on the discharge of industrial sewage.

Numerous regulations have been promulgated under the Water Law in order to protect Israel's water resources from the impacts of industrial effluents. They include:

- Water Regulations (Prevention of Water Pollution) (Reduction of Salt Use in the Regeneration Process), 1994, setting out a number of technical steps to bring about salt reduction through regeneration of ion exchange;
- Water Regulations (Prevention of Water Pollution) (Evaporation and Storage Ponds), 1997, aimed at preventing water pollution from evaporation and storage ponds on the one hand, and at restricting their use on the other hand;
- Water Regulations (Prevention of Water Pollution) (Gasoline Stations), 1997, requiring specific conditions for the establishment and operation of gas stations including measures and equipment to prevent leaks;
- Water Regulations (Prevention of Water Pollution) (Prohibition on Discharge of Brines to Water Sources), 1998, prohibiting the discharge of brines from ion-exchange renewal, as well as from food, tanning and textile industries, and from hospitals to water sources and to the municipal sewage system;
- Water Regulations (Prevention of Water Pollution) (Metals and Other Pollutants), 2000, largely targeted at the electroplating industry but including a list of twenty pollutants which apply to any facility discharging wastewater;
- Water Regulations (Prevention of Water Pollution) (pH Values of Industrial Sewage), 2003, designed to protect the environment and prevent the pollution of water sources from the impacts of corrosion generated by industrial sewage;
- Water Regulations (Prevention of Water Pollution) (Usage of Sludge), 2004, requiring wastewater treatment plants so as to stabilize and treat the sludge they generate to enable agricultural use after soil conditioning.

In addition, Business Licensing Regulations (Salt Concentrations in Industrial Sewage), 2003, prohibit dilution as a solution and set strict threshold standards for chlorides, sodium, fluorides and boron prior to their discharge to a wastewater treatment plant.

HAZARDOUS WASTE

Licensing of Businesses Regulations (disposal of hazardous wastes) 1990: These regulations were promulgated in 1990, requiring owners of industrial plants to dispose of hazardous wastes originating or found within their plants, as soon as possible after production and no longer than six months after production, at the national site for the disposal and treatment of hazardous wastes in Ramat Hovav. Disposal or treatment of hazardous waste elsewhere for the purposes of recycling and reuse or for other reasons requires the prior approval of the Environment Ministry.

The Hazardous Substances Law of 1993: This law is the central legal instrument governing the "cradle to grave" management of hazardous substances in Israel. It provides the MoEP with the authority to control hazardous substances, including the issuing of licenses, regulations and the supervision of the various aspects of the production, use, handling, marketing, transport, import and export of such substances. According to the Hazardous Substances Law, 1993, the possession of hazardous material requires a Hazardous Material Permit. This Permit specifies the conditions for handling hazardous waste. The permits of all treatment facilities/exporters/importers include an obligation to report to the Ministry the data on any hazardous waste they treat. The MoEP also collects data on hazardous waste that is

transferred for treatment outside the enterprises that generated it. The waste is transferred to treatment facilities or exported for treatment outside Israel. Data which must be reported include: waste definition, quantity, treatment operation, wastes generated after treatment, recycled material if any, etc.

Abatement of Nuisances Regulations, 1993: These regulations prohibit the burning and improper disposal of used oil. Sellers, users and consumers of motor oil must collect it in special receptacles and transport it to the hazardous waste site in Ramat Hovav or to a recycling facility.

2.1.1.4. Waste

Due to the scarcity of land in Israel, the available capacity for landfills is limited. Moreover, landfills "consume" valuable land and are associated with both direct and indirect environmental and economic costs. Therefore, efforts are made to introduce alternatives to landfilling: source reduction, reuse, recycling, anaerobic digestion, composting, drop-off centers and waste-to-energy plants. To address the solid waste problem, Israel has formulated a policy founded on integrated waste management, including the complementary use of a variety of practices to handle municipal waste safely and effectively.

Local authorities are responsible for the storage, collection and disposal of municipal solid waste (MSW), and municipal bylaws determine the legal and administrative arrangements for collection and disposal. Regulations promulgated under the Planning and Building Law set out requirements for the size and type of waste containers, as well as for the size and type of structures for housing these containers.

Municipalities are authorized to establish sites for landfills and to determine other waste disposal locations in accordance with the Planning and Building Law and its regulations and the National Outline Plan for Solid Waste Treatment. Disposal and treatment of solid waste require a business license and are subject to special conditions within the framework of the Licensing of Businesses Law. According to their licensing permits, 'Transfer Stations' are required to report, on a yearly basis, data regarding the waste accepted and delivered to various destinations. Reporting includes data on waste quantities, waste type and source.

The Maintenance of Cleanliness Law, 1984: This law prohibits the throwing away of waste (including abattoir, yard and bulk wastes as well as tires), construction debris and vehicle scrap into the public domain, or from the public domain into the private domain. It obligates local authorities, either individually or jointly, to establish sites for the disposal of building debris and vehicle scrap. The law also authorizes the Minister of the Environment and local authorities to issue clean-up orders.

Abatement of Nuisances Law, 1961, regulations for the prevention of odors and air pollution from solid waste disposal sites, 1990: These regulations prohibit the burning of waste at solid waste disposal sites and require operators to take all necessary means to prevent burning.

Public Health Regulations 1993: These regulations prohibit the burning of plastic films used in greenhouses and as plastic covering on agricultural fields and require their collection at the edge of the field for recycling or their transport by the owner to a landfill.

The Collection and Disposal of Waste for Recycling Law, 1993: This law provides the principles and the framework for recycling. It authorizes local authorities, and obliges them, when so required by the Minister of the Environment, to allocate sites for recycling centers and to install recycling facilities and containers. Municipalities are authorized to pass bylaws specifying procedures for the collection and disposal of waste for recycling, and business and homeowners within a municipality operating recycling centers are required to install and maintain recycling containers in accordance with municipal directives. Local municipalities are required by law to report every year, to the Environmental Protection Minister, the amounts of recycled MSW by: type of waste, amount (tons) and recycling facility.

Collection and Disposal of Waste for Recycling Regulations, 1998: These regulations set out graduated recycling targets which require local authorities to gradually reduce their waste for disposal by means of recycling according to the following timetable: at least 10% by December 1998, 15% by December 2000 and 25% by December 2007.

The Deposit Law on Beverage Containers, 2001: This law requires manufacturers and importers of beverage containers to collect and recycle these containers. The law provides for a bottle collection and recycling system which allows the public to return glass and plastic containers and beverage cans and to get a refund for each empty container which is returned. According to the law, manufacturers and importers report to the MoEP on a quarterly basis and at the end of each year the number of full beverage containers sold, the number of empty beverage containers collected, the number of all empty containers for which a deposit fee was refunded and the number of empty beverage containers that were recycled.

An amendment to the Maintenance of Cleanliness Law (landfill levy), 2007: This law stipulates a specific rate for a landfill levy according to the type of waste. The landfill levy aims to internalize the full and real costs of waste treatment and disposal and it will be implemented gradually and incrementally over a period of five years. According to the Maintenance of Cleanliness law, 1984 landfills are required to report on a yearly basis: quantities, sources and types of deposited waste. Since 2007, landfills have been required to report on a monthly basis: quantities, sources and types (municipal, sorted waste, construction and demolition waste, sludge).

Tire Disposal and Recycling Law, 2007: This law aims to reduce the environmental nuisances caused by improper tire disposal while promoting waste tire recycling. According to the law, tire producers and importers are responsible for the disposal and recycling of used tires at graduated rates each year. Tire manufacturers or importers should report to the MoEP on a yearly basis the number of tires marketed in Israel, as well as the number of tires which are collected, removed and recycled.

The Packaging Law, 2011, aims to minimize the generation of excess packaging waste and to encourage the reuse, recycling and reduction of waste transferred to landfills. The law seeks to regulate the treatment of packaging waste in Israel and is based on the principle of extended producer responsibility, whereby the manufacturer or importer is responsible for the collection and recycling of the packaging materials they produce or import for sale in Israel, and for their full cost.

2.1.2. International agreements and conventions

Israel and the EU inter alia co-operate in the context of the Environmental Strategy for the Mediterranean, developed under the Euro-Mediterranean Partnership. This effort is coordinated with related regional environmental activities carried out under UNEP's Mediterranean Action Plan through a formal EU-UNEP/MAP agreement.

Israel's approach to marine issues has been heavily influenced by its participation in the Mediterranean Action Plan (MAP) and by international commitments under the 1976 Barcelona Convention for the Protection of the Mediterranean Sea against Pollution, which entered into force in Israel in 2004. Israel is a signatory to all seven Convention protocols, although ratification is pending for some of them.

Israel participates in virtually all of the MAP's numerous components and is active in five MAP Regional Activity Centres (RACs). It has held a position on the MAP Bureau of Contracting Parties since 2008.

Israel has signed various international environmental agreements. The following table summarizes these conventions and protocols which relate to the management of water, industrial emissions and waste.

Date	Title	Date of signing by Israel	Date of Ratification by Israel	Relevant Legislation	Reporting obligation	Next report due on
Water						
1954	International Convention for the Prevention of Pollution of the Sea by Oil (OILPOL)		1966	Prevention of Sea Water Pollution by Oil Ordinance [New Version], 1980; Prevention of Sea Water Pollution by Oil Regulations (Marine Environmental Protection Fee), 1983	-	-
1969 -1992	International Convention on Civil Liability for Oil Pollution Damage (CLC) (Being Replaced by 1992 Protocol)		Protocol – 2004	Liability for sea pollution law, 2004	-	-
1971	International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (FUND) (Replaced by 1992 Protocol)		Protocol – 2004	Liability for sea pollution law, 2004	-	-

1973	International Convention for the Prevention of Pollution from Ships (MARPOL)		1983 appendix 1 – 1983 appendix 1 – 1987 appendix 1 – 1996 appendix 4,5 & 6 – not yet	Maintenance of Cleanliness Law, 1984 ; Prevention of Sea Water Pollution by Oil Ordinance [New Version], 1980; Prevention of Sea Water Pollution by Oil Regulations (Marine Environmental Protection Fee), 1983;	-	-
1976	Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean	1976	1978		Biennial general report, and report on the implementation of the Convention	2013

1976	Protocol for the Prevention and Elimination of Pollution in the Mediterranean Sea by Dumping From Ships and Aircraft	1976	1984	Prevention of Sea Pollution (Dumping of Waste) Law, 1983; Prevention of Sea Pollution (Dumping of Waste) Regulations, 1984	National Report	2013
1990	International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC)	1990	1999		-	-
1994	Protocol for the Protection of the Mediterranean Sea against Pollution Resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil	1994	Not yet		No obligation to report at this stage	
1996	Protocol for the Protection of the Mediterranean Sea against Pollution from	1996	2009	Prevention of Sea Pollution from Land-Based Sources Law, 1988;	National Report	2013

	Land-Based Sources and Activities (LBS)			Prevention of Sea Pollution from Land-Based Sources Regulations, 1990;		
2002	Protocol Concerning Cooperation in Preventing Pollution from Ships and, in Cases of Emergency, Combating Pollution of the Mediterranean Sea	2003	Not yet		No obligation to report at this stage	
2008	Protocol on Integrated Coastal Zone Management in the Mediterranean (ICZM)	2008	Not yet, but in High priority	Protection of the Coastal Environment Law, 2004;	No obligation to report at this stage	-
Industrial Emissions						
1977	Vienna Convention for the Protection of the Ozone Layer		1992	Hazardous Substances Regulations (Implementation of the Montreal Protocol on Substances that Deplete the Ozone Layer), 2009	Annual ODS report The Ministry reports to the Secretariat; The Ministry focal point collects information on the production, use, import, export of methyl bromide from the manufacturing industry and the Ministry of Agriculture; imports and exports of other substances are controlled by the	2012
	Montreal Protocol on Substances that Deplete the Ozone Layer	1988	1992			

					Ministry of Commerce, Trade and Labor.	
1992	United Nations Framework Convention on Climate Change (UNFCCC)	1996	1996	-	National communication	2014
1997	Kyoto Protocol to the United Nations Framework Convention on Climate Change	1998	2004		No obligation to report at this stage National greenhouse gas emissions inventory reports are sent in Excel format to the UNFCCC on a voluntary basis. Government decision (2010) on the implementation of a national plan for the reduction of GHG emissions includes a requirement to track the actual reductions in emissions and report to the government.	
Hazardous Waste						

1971	Convention concerning protection against hazards of poisoning arising from benzene	1971	1979			
1989	Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes	1989	1994	Hazardous Substances Law, 1993	Yearly report to the Convention. Export/import permit requires exporters/ to report annually to the MoEP.	2012
1998	PIC on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (PIC)	1999	2011	Plant Protection Law, 1956 Hazardous Substances Law, 1993 Hazardous Substances Regulations (Registration of Formulations for the Control of Pests Harmful to Man), 1994 Free Import Order, 2006	Poison permits are granted only to importers who meet the conditions and requirements set out by the MoEP.	-
2001	Stockholm Convention on Persistent Organic Pollutants (POPs)	2001	Not yet			

2.2. Description of Environmental Data Availability and data flows

The following table presents data availability and data flows in Israel by category and sub-category.

2.2.1. Water

A. Water	Sub- Category	Data Period (from year 19XX)	Collection frequency	Website/ publications	Contact Organization
A.1 Water Quality	Drinking Water: General	1982	Daily	http://www.health.gov.il/English/MinistryUnits/HealthDivision/PublicHealth/Pages/Default2.aspx	Public Health, Ministry of Health
	Drinking water: Desalinated	2005 (with the initiation of sea water desalination)	Most of the variables are continuously measured. The remaining are collected daily, monthly, bi-annually.	http://www.water.gov.il/hebrew/Pages/home.aspx	Desalination Department, Israel Water Authority
	Water sources quality: Underground Water Sources	1985	3 months	http://www.health.gov.il/English/MinistryUnits/HealthDivision/PublicHealth/Pages/Default2.aspx	Public Health, Ministry of Health
		1948	1-2x/year	http://www.water.gov.il/hebrew/Pages/home.aspx	Hydrological Service, Israel Water Authority

	Water source quality: Surface Water - Lakes & Watershed	1948	<p>The Sea of Galilee is sampled daily, continuously to less frequently, depending on the parameter in the Sea of Galilee and its entire watershed</p> <p>Outside the Sea of Galilee watersheds are sampled twice a year</p>	<p>“Monitoring Lake Kinneret & its watershed: Forming the basis for management of a water-supply lake”, Authors: Markel & Shamir, 2000.</p> <p>http://www.water.gov.il/hebrew/Pages/home.aspx</p> <p>http://www.ocean.org.il/MainPageEng.asp</p>	Lake and Watershed Monitoring and Management Unit, Israel Water Authority/Israel Oceanographic and Limnological Research (IOLR)
	Springs	1948	1-2 x/year	http://www.water.gov.il/hebrew/Pages/home.aspx	Hydrological Service, Water Authority
	Rivers	1996	Every 2 weeks	http://www.health.gov.il/English/MinistryUnits/HealthDivision/PublicHealth/Pages/Default2.aspx	Public Health, Ministry of Health
		1997	2/year	http://www.sviva.gov.il/bin/en.jsp?enPage=e_BlankPage&enDisplay=view&enDispWhat=Object&enDispWho=Articals^12081&enZone=River_Monitoring http://www.cbs.gov.il/reader/shn	Water, Sewage & Stream Division, MoEP and Agriculture and Environment

				atonenew_site.htm	Sector, CBS
	Runoff & Intermittent Streams		During every major rain event at ~ 105 stations (0-5x/year)	http://www.water.gov.il/hebrew/Pages/home.aspx	Hydrological Service, Water Authority
A.1 Water Quality	Water Abstraction to Consumption	1948	Most parameters: daily to monthly as a function of recipient-population size. A few parameters: quarterly to annually.	http://www.water.gov.il/hebrew/Pages/home.aspx	Water/Wastewater Quality Dept, Israel Water Authority
	Wastewater	1970s	Specific to each wastewater treatment facility	http://www.sviva.gov.il/bin/en.jsp?enPage=e_BlankPage&enDisplay=view&enDispWhat=Object&enDispWho=Articals^12091&enZone=Wastewater_Treatment	Water/Wastewater Quality Dept, Israel Water Authority/ Water, Sewage & Stream Division, MoEp
	Effluents		Depending on the parameter: continuous sampling at least once a year	Public Health Regulations (Standards for effluents), 2010 http://www.water.gov.il/hebrew/Pages/home.aspx	
	Effluent-reservoirs		Annually to bi-annually	http://www.sviva.gov.il/bin/en.jsp?enPage=e_BlankPage&enDisplay=view&enDispWhat=Zone&enDispWho=Wastewater_sub&enZone=Wastewater_sub&	

	Sludge	1990s	Sludge is processed in batches (not continuously). Every single batch of sludge that is sent to the agricultural sector is sampled to ensure that it meets the contaminant limits specified by law. Quality measurements of sludge that is sent to landfills or to the sea are performed less frequently	http://www.water.gov.il/hebrew/Pages/home.aspx	Water/Waste-water Quality Dept, Israel Water Authority
A.2 Satellite Accounts	Water satellite Account	2006	Yearly	http://www1.cbs.gov.il/reader/?Mival=cw_usr_view_SHTML&ID=500	Agriculture and Environment Sector, CBS
A.3 Mediterranean Sea	General Monitoring	Various years, from 1978, depending on the parameter	Depending on the parameter, From daily to yearly. Monitored parameters are expanded continuously	http://isramar.ocean.org.il/isramar2009/ http://www.sviva.gov.il/Environment/bin/en.jsp?enPage=e_blankPage&enDisplay=view&enDispWhat=object&enDispWho=Articals%5E12685&enZone=ProtectingMediterranean&enVersion=0&	Israel Oceanographic and Limnological Research (IOLR)/ Marine & Coastal Environment Division, MoEP
	Quality of bathing water at beaches	1992	Weekly	http://www.health.gov.il/English/MinistryUnits/HealthDivision/PublicHealth/Pages/Default2.aspx	Public Health, Ministry of Health
	Monitoring	2005 (with the	From daily to annually, depending	http://www.water.gov.il/hebrew/	Desalination

	desalination brine outflow sites	initiation of sea water desalination)	on the parameter. Annual written reports.	Pages/home.aspx	Department, Israel Water Authority
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2.2.2. Industrial Emissions

B. Industrial Emissions	Sub-category	Data Period (from year 19XX)	Collection frequency	Website/ publications	Contact Organization
B.1 Air Pollution	Air monitoring	Early 1970s around power plants near Tel Aviv and Ashdod.	Every 5 minutes	Clean air website (Hebrew): http://n.sviva.gov.il/subjectsEnv/Air/Pages/default.aspx Publications: monthly and annual reports	Air and Climate Change Division , MoEP, Municipal Associations for the Environment (Haifa, Hadera, Ashdod and Ashkelon), the Municipality of PetachTikva and Jerusalem, Israel Electric Corporation, Dead Sea Works, etc.

	Monitoring industrial emissions	2001	The industry is required to perform stack sampling from once in 2 years to twice in one year depending on the plant. In part of the plants there is continuous monitoring	<p>Clean air website (Hebrew) from 2008. Publication of additional data each yearly quarter</p> <p>http://n.sviva.gov.il/subjectsEnv/Air/EmissionsData/Pages/default.aspx</p> <p>In addition publication of annual reports of stack tests done by the Ministry are available on: http://www.sviva.gov.il/Environment/bin/en.jsp?enPage=BlankPage&enDisplay=view&enDispWhat=Zone&enDispWho=factory&enZone=factory&</p>	Air and Climate Change Division , MoEP
	Air emissions (Calculating models for fuel combustion and GHG)	1980s (fuel combustion) 1996 (GHG)	annually	<p>Statistical Abstract of Israel http://www.cbs.gov.il/reader/shnatonenew_site.htm CBS Data base (hebrew) http://www.cbs.gov.il/ts/databank/building_func.html?level_1=24</p>	Agriculture and Environment Sector, CBS
B.2 Industrial Wastewater	Wastewater and effluents and sludge	2000	monthly	http://www.sviva.gov.il/bin/en.jsp?enPage=e_BlankPage&enDisplay=view&enDispWhat=Zone&enDispWho=Industrial_Effluents&enZone=Industrial_Effluents	Industrial Effluents, Fuel & Soil Pollution Division, MoEP

				Yearly publications (Hebrew)	
B.3 Hazardous Waste	Hazardous waste	1991	annually	http://www.sviva.gov.il/bin/en.jsp?enPage=e_BlankPage&enDisplay=view&enDispWhat=Zone&enDispWho=HAZARDOUS&enZone=HAZARDOUS& MoEP Yearly publications (Hebrew) Statistical Abstract of Israel http://www.cbs.gov.il/reader/shnatonenew_site.htm	Hazardous Substances. Division, MoEP, Agriculture and Environment Sector, CBS
B.4	Release and Transfer Registers (PRTR)	2013 (expected)	annually	Under construction http://www.sviva.gov.il/	General Industries Cluster, MoEP

2.2.3. Waste

C. Waste	Sub-category	Data Period (from year 19XX)	Collection frequency	Website/ publications	Contact Organization
C.1 Municipal Waste	Municipal waste Landfilling	1994 (detailed 2007)	Yearly (monthly from 2007)	http://www.sviva.gov.il/bin/en.jsp?enPage=e_BlankPage&enDisplay=view&enDispWhat=Zone&enDispWho=waste&enZone=waste&	Solid Waste Division, Packaging Division, MoEP
	Municipal waste collection	1996	Yearly	Statistical Abstract of Israel http://www.cbs.gov.il/reader/shn_atonew_site.htm CBS Data base (hebrew) http://www.cbs.gov.il/ts/databank/building_func.html?level_1=24	Agriculture and Environment Sector, CBS
	Municipal waste Recycling	1998	Yearly	http://www.sviva.gov.il/bin/en.jsp?enPage=e_BlankPage&enDisplay=view&enDispWhat=Zone&enDispWho=waste&enZone=waste&	Solid Waste Division, MoEP
		1990	Yearly	Statistical Abstract of Israel http://www.cbs.gov.il/reader/shn_atonew_site.htm CBS Data base (hebrew) http://www.cbs.gov.il/ts/databank/building_func.html?level_1=24	Agriculture and Environment Sector, CBS

2.3. Description of Environmental Indicators availability

In order to increase public awareness and to provide useful environmental information for stakeholders, a set of indicators have been developed by both MoEP and the CBS. Other organizations also publish various indicators in their area of interest. The selection of the indicators was guided by priorities of the environmental topics, the availability of data and international standards. Israel constructed the list of its indicators based on accumulated knowledge of international organizations, such as the UN, OECD and Eurostat. The major recent publications that include environmental indicators related to the ENPI-SEIS topics are:

- ❖ Publication Name: **STATE OF THE ENVIRONMENT IN ISRAEL, INDICATORS, DATA AND TRENDS, 2010**
 - Organization, Editor: Ministry of Environmental Protection, Yeshayahu Bar-Or and Orna Matzner
 - Year of publication: 2010
 - Period of data: 2000-2010
 - Previous publication (2004)
 - Framework: MoEP indicators work plan on the main quantity and quality of environmental resources: land, air, water, sea and biodiversity, the processes of pollution that damage them, the treatment of solid and liquid waste, and the improvement or deterioration trends demonstrated by these indicators.
 - Language: Hebrew and English
 - Covered ENPI-SEIS topics:
 - **Water:** Water Consumption, State of the Sea of Galilee, State of the Aquifers, State of the Mediterranean Sea, River Pollution, Pollution of the Mediterranean Sea, Municipal Wastewater, Municipal Wastewater Sludge.
 - **Industrial Emissions:** Air Quality, Pollutant Emissions by Source, Greenhouse Gas Emissions, Industrial Wastewater, Hazardous Waste.
 - **Waste:** Solid Waste
 - Selection Criteria: International standards for the selection of core indicators, data availability, considerations regarding decision making in the MoEP. Information gaps were identified and described (Hebrew)
 - Website:
http://www.sviva.gov.il/bin/en.jsp?enPage=e_BlankPage&enDisplay=view&enDispWhat=Zone&enDispWho=environmentIndicators&enZone=environmentIndicators
- ❖ Publication Name: **SUSTAINABLE DEVELOPMENT INDICATORS IN ISRAEL, 2008**
 - Organization, Editor: Central Bureau of Statistics, Amit Yagur-Kroll
 - Year of publication: 2011
 - Period of data: year available-2008
 - Previous publication (2007)
 - Framework: The indicators are mostly based on data that have been collected in the framework of the ongoing work carried out at the CBS. The publication

presents indicators relating to environmental, social and economic aspects of sustainable development, and is based on international definitions and guidelines for the presentation of these indicators. The indicators presented in the publication facilitate comparison between the situation in Israel and the situation in other countries, and a discussion of the aspects of sustainable development that are unique to Israel.

- Language: Hebrew and English
- Covered ENPI-SEIS topics:
 - **Water:** State of aquifers, population connected to wastewater treatment facilities, quality of bathing beaches.
 - **Industrial Emissions:** Air pollutant emissions from fuel combustion, greenhouse gas emissions.
 - **Waste:** Household waste
- Selection Criteria: In accordance with UN recommendations, the indicators reflect the aspects and various characteristics required of sustainable development indicators. The UN recommendations emphasize the importance of representation according to the three pillars of sustainable development (environment, society and the economy), and of choosing indicators the combination of which will make it possible for users to see a broad and inclusive picture of various development issues. The indicators have also been selected according to their relevance to local aspects of sustainable development.
- Website:
http://10.58.170.5/webpub/pub/text_page_eng.html?publ=64&CYear=2008&CMonth=1#100

❖ Publication Name: **ENVIRONMENTAL DATA COMPENDIUM ISRAEL, 2006**

- Organization, Editor: Central Bureau of Statistics, Dr. Moshe Yanai et. al., Project Implementation by Plan Bleu
- Year of publication: 2006
- Period of data: year available-2004
- Previous publication (2002)
- Framework: The environmental indicators compendium was initiated as a concluding output of the MED-ENV II Project. It provides statistics reflecting current environmental conditions in Israel, as well as core trends, wherever supporting reliable data were available.
- Language: English
- Covered ENPI-SEIS topics:
 - **Water:** precipitation, freshwater resources, stream quality, sewage and effluents.
 - **Industrial Emissions:** air pollutant emissions from fuel combustion, air quality at monitoring stations, greenhouse gas emissions, hazardous waste.
 - **Waste:** Solid Waste

- Selection Criteria: In accordance with Plan Bleu recommendations and availability of reliable data.
- Website: <http://www.cbs.gov.il/www/hodaot2006n/env-compendium.pdf>

3. Infrastructure

3.1. General

In Israel, natural resources are monitored and inspected by various governmental and academic organizations. The monitoring, inspection and research processes produce data that are analysed and used to generate environmental indicators. Some of these data/indicators are published and some are transferred to the relevant stakeholders. Nevertheless, this information is kept in scattered uncoordinated systems and there is no systematic unified environmental system that combines all the data and indicators from the different sources. The environmental data and indicators are routinely presented to the stakeholders and to the public via the Internet as well as a series of professional publications. In the relevant agencies, some databases do exist and some are under construction. These data are often shared with other organizations for various purposes.

3.2. Water

Water resources in Israel are closely monitored. In reference to quality sampling in the water sector overall, non-continuous sampling procedures generally occur as follows: electrochemical analyses (e.g. pH, conductivity, DO) are measured on-site immediately, and the remaining analyses (e.g. nitrates, phosphates, BOD, heavy metals) are sent to laboratories for analyses. The laboratories are owned and operated by consulting firms that service the following national governmental entities: Israel Water Authority, Ministry of Health, Ministry of the Environment.

If any sampling procedures reveal compounds/concentrations that are deemed unacceptable by law, the laboratory is obligated by law to send the results without delay to the health authority and/or other relevant governmental authorities.

Some of the additional monitoring procedures that occur are as follows:

Drinking Water – drinking water quality is monitored by water suppliers and has been published routinely since the 1980s. The monitoring frequency differs from continuous to daily to once in 3-6 years according to the parameter, vulnerability and size of the population served. Drinking water quality measurements must be carried out by an authorized laboratory according to all legal specifications for monitoring and warning in the event of a breach of a limit value. The results of all of these measurements must be reported to the regional department of the Ministry of Health. Most of the data collected in laboratories is computerized and sent to the ministry using a program called "Lims". Annual reports are printed and are available on the Internet. The complete detailed sampling procedures, measured variables, acceptable concentrations, etc. are specified in the Potable Water and Source-Water Quality Laws (2000).

Sea of Galilee and Watershed - Water quality samples are collected throughout the Sea of Galilee and its watershed (which includes the Jordan River). The sampling frequency depends on the location and parameter in question. Some parameters are measured continuously and at half hour intervals, and are transmitted automatically to a central data collection facility. The Sea of Galilee and its watershed are sampled by using automated sampling devices that transmit information to a remote central station. In the Sea of Galilee, some of the automated sampling devices are located on a floating monitoring station, called an EcoRaft. Data processing includes the use of Envtech software.

Desalinated Water - Desalinated water is measured continuously at each desalination facility, and at each respective entrance to the national pipe-conveyance infrastructure. These data are continuously available to all companies/organizations that are responsible for water quality (including the Israel Water Authority and the Ministry of Health). The Department of Desalination in the Israel Water Authority receives information from SCADA systems that are located within each desalination plant. This information is conveyed by Internet continuously (online) to the Israel Water Authority. Until laws regarding the quality of desalinated potable water are in place, a monitoring scheme is run by the Ministry of Health explicitly for each individual desalination facility, with procedures that must be strictly adhered to by the companies that operate each facility, as part of their legally binding contract for operations with the State of Israel.

Although there is no central water information system in Israel, a great many extensive water quality datasets exist in the Israel Water Authority and the Ministry of Health and some are available online. Water quality data are reliable (measured in nationally approved laboratories, according to high national standards), and the coverage and frequency of measurements are good. However, much of these data are not immediately made available online. In the future, the information is expected to be available to the Israel Water Authority online. The Israel Water Authority is in the process of building a new telemeter-sampling system for measuring and transmitting all hydrological data. Once this system is in place, continuous online quality and quantity data will be provided from each well from which we draw water.

Wastewater: As to wastewater, 95% of the population is connected to urban wastewater treatment plants. Monitoring of wastewater treatment plants - both in the field and in the laboratory- is undertaken twice a year in spring and autumn. For example, during 2007, 4825 tests were performed at 55 major wastewater treatment plants which treated about 258 million cubic meters (MCM) a year. In addition to wastewater, the sludge collected in 27 facilities is also tested to check its compliance with criteria for disposal. Each wastewater treatment plant collects data regarding quantities and quality and reports to MoEP and the CBS at least on an annual basis. A database for wastewater treatment in the MoEP is currently under construction. The treated effluents for irrigation are inspected by the Ministry of Health, which is currently constructing a database for this purpose.

Rivers: Monitoring of water quality and pollution loads in rivers - both in the field and in the laboratory - is conducted biannually (spring and autumn) as part of a multi-annual program. Parameters for water quality include BOD, boron, chloride, TSS, COD, phosphorous, nitrogen, ammonia, heavy metals, hydrocarbons and detergents. Parameters for pollution loads in rivers currently undergoing restoration include organic carbon, nitrogen and phosphorous. Monitoring of sediment quality in some coastal rivers - Hadera, Yarkon, Soreq, Lachish and Alexander - has been initiated to provide an up-to-date picture of river water quality as influenced by water sediment transport of pollutants.

The aims of the monitoring program include:

- To develop a database on the environmental quality of the country's rivers;
- To provide evidence for enforcement purposes;
- To oversee river restoration.

Water Accounts: Israel is producing water accounts which are computed by software developed internally. The CBS - as responsible institution - has published the water accounts for 2006 and is currently working on the accounts using data of 2007-2008. The system integrates two approaches related to water accounting, the NAMEA and SEEAW methodology. The CBS selected the NAMEA methodology as the main accounting methodology. However, the system enables the use of both methodologies and reports the major tables of the SEEAW methodology as well, which allows to switch to formats which are fully comparable with NAMEA if necessary. The CBS is constantly working on improving its water accounts. The accounts data are available online and reported regularly to different institutions.

Marine and Coastal Environment-

Monitoring: The MoEP is responsible for Israel's National Monitoring Program for the Mediterranean Sea, which is carried out by Israel Oceanographic and Limnological Research (IOLR). The monitoring program, first initiated in the mid-1970s, is one of the first to be implemented in the Mediterranean Sea Basin. Data are transferred to the Program for the Assessment and Control of Pollution in the Mediterranean region (MEDPOL), within the framework of a Memorandum of Understanding signed in 2004.

The overall objective of the program is to provide a scientific basis for decision making with regard to the protection of the coastal environment, including enforcement of relevant national legislation and international conventions. The program includes the following components:

- Monitoring of heavy metals in coastal waters (carried out since 1978);
- Monitoring of the introduction of nutrients and particulate metals into coastal waters through coastal rivers (since 1990);
- Monitoring of atmospheric fluxes of nutrients and heavy metals into coastal waters (since 1996);
- Monitoring of nutrient levels and algal populations in the shallow area of coastal waters (since 2000);
- Monitoring of benthic communities along the coastline (since 2005);
- Monitoring of the biological effects of pollution on the sea ('biomarkers') (since 2005);

- Environmental mapping of the coastal waters area based on satellite data (SISCAL) (since 2005);
- Estimation of the overall pollution load introduced into coastal waters derived from a database on point sources of pollution (since 2002).

The IOLR established, in 2001, a national Marine Data Center for Israel's oceanographic data (ISRAMAR). ISRAMAR acquires archives and distributes data and information on Israel's marine environment and is a member of the International Oceanographic Data and Information Exchange (IODE) network. ISRAMAR keeps physical, chemical, biological and geological data from the Mediterranean Sea, the Red Sea and the Dead Sea. Data are obtained mainly from research cruises and from remote data stations. Metadata recorded along with the data includes: time and space coordinates for the data collection, methods of sampling and analysis, quality control information and more. The basic ISRAMR data products include:

- A catalogue of existing data;
- Various statistical analyses of historic data;
- Sea state information presented on the Internet in near real-time;
- Wave forecasts presented on the Internet.

Additional data products are produced on request. In addition, interactive data management systems developed by ISRAMR allow the user to generate various data products independently.

Land-based pollution: Under the Prevention of Sea Pollution from Land-Based Sources Law, discharge of industrial and municipal wastewater into the sea is prohibited or regulated by a strict permit system. Regulations pursuant to the law include conditions for issuing permits and a listing of substances that may or may not be discharged into the sea. Permits are rejected if the waste or sewage contains substances listed in the second Annex to the Land-Based Protocol of the Barcelona Convention and best available technologies have not been utilized to prevent pollution.

Permit holders must undertake laboratory tests and a monitoring program and the MoEP may conduct spot checks in order to assess the reliability of the reports. In line with its policy of public access and transparency, the MoEP began publishing information on permits for the discharge of industrial and municipal wastewater to the sea on its Hebrew website in July 2007.

Recreational water: Beaches have been monitored for microbial parameters since the 1990s. The Ministry of Health grants permits to the Local Authorities to operate declared beaches for bathing activities. Data on microbial tests of seawater on beaches are published continuously on the Ministry's website and are also reported annually to the CBS for publication.

3.3. Industrial Emissions

AIR POLLUTION

Air quality data are used to determine the MoEP policy for the reduction of air pollution, inter alia within the national plan, and are also used to examine the effectiveness of any actions taken. These data are collected via the national monitoring network, which was initiated as a voluntary activity. Since 2011 the legal basis has been the clean air law. Over one hundred air quality monitoring stations are operated in Israel. The stations are run by the MoEP (26 fixed stations and two mobile stations), municipal associations for the environment (Haifa, Hadera, Ashdod and Ashkelon), the Municipality of PetachTikva, the Israel Electric Corporation and the biggest point sources (manufacturing industries). The monitoring network is considered to be one of the densest air monitoring networks in the world.

Israel operates two types of air monitoring stations: general stations and transportation stations. General stations are located in representative areas which are not adjacent to specific emission sources at roof height, generally in open urban areas and frequently on the roofs of schools or public buildings. The following air pollutants are measured in these stations: SO₂, NO_x, O₃, CO, and PM. In addition, the stations monitor meteorological parameters such as wind speed, wind direction, air temperature, humidity, solar radiation and precipitation. Transportation stations are designed to monitor pollutants originating from transportation sources and are located near primary traffic junctions, at pavement height. The following air pollutants are measured in transportation stations: NO_x, CO, PM and HC.

All the stations report on-line by IP VPN communication to the national air monitoring control headquarters. Data are collected every five minutes. Reports include time resolutions of half an hour, one hour, eight hours and 24 hours. The results are published on-line and updated every five minutes. Automated reports, air quality maps and exceedance maps are published on the MoEP website. These data are used to generate monthly and annual reports which are published on the website (in Hebrew).

The technology used is Generic software - Envista (Envitech Ltd.)

Hardware: A server farm is located at the MoEP. Communication is via the Internet. On-line data with high resolution is available to the public and for decision makers. But there is a lack of maps on the GIS platform.

Dataset information:

Name of dataset	geographical coverage (Regional/ National)	Date of creation - date of last revision	Size of database (approximation of number of records)
Air monitoring	National (for major pollutants such as PM, O ₃ , Nox, SO ₂) Site specific (for other pollutants such as benzene and lead)	1998	Hundred millions

In addition to the air monitoring network described above, the industrial sector is monitored directly via stack monitoring. Industrial air monitoring is implemented in the business licenses and in personal decrees (administrative orders). Since 2011 the legal basis has been the clean air law. All the relevant plants are required to perform periodical stack sampling. Some of the plants are also required to perform continuous stack monitoring. Reports of periodical stack sampling are sent to the Ministry about a month or two after the measurements have been performed. The data is transferred to the "Industrial System" database. The results of continuous stack monitoring are reported on-line to Municipal Associations for the Environment and published on their websites. The annual and periodical reports of continuous monitoring accepted by the Ministry are intended to be published on the clean air website.

The industrial air monitoring data are stored in two major databases:

- **The industrial system** includes data since 2001 from the plants' periodical stack sampling and independent MoEP sampling activities. It includes emission concentrations and emission rates of all relevant pollutants of every plant in the country which produces emission to air. The periodical stack sampling data are currently transferred to the system manually and delivered to the clean air website once every 3 months. The MoEP is developing a web-based format which will enable the plants to feed the results automatically to the System. The database includes data of many pollutants used for control and enforcement. It produces reports on plant status, exceedences etc. The MoEP plans to add two modules: the first for manual ambient air sampling of those pollutants which are not continuously monitored and the second for reporting calculated emission rates of non-point sources.

Technological Aspects: The system stores static information regarding pollution from industrial sources (such as factories, power plants, etc.) - stacks, processes, pollutants and pollution standards and dynamic data. It compares the measured values to the standard values and determines if there are exceptions.

- Hardware – HP servers
- Software – Windows Platforms, industry emissions using VB6 application, which is custom software developed specially for MoEP.
- Database – Oracle
- Communication – Ethernet

- **The National Emissions Inventory** includes data since 2005, within the framework of Israel's air resources management system. These data are used for planning and determining policies and they are available for the public. The system includes every source of air pollution (e.g., households, industries, small businesses, cars, wastewater treatment plants, landfills, quarries, etc.). The inventory relates only to the following pollutants: sulfur oxides (SO_x), nitrogen oxides (NO_x), particulate matter (PM₁₀), non-methane volatile organic compounds (NMVOC) and carbon monoxide (CO). It presents average maximum hourly emissions in the manufacturing industry and power plants, the location of emission sources and data about emission

sources. The emissions inventory is updated regularly once or twice a year, depending on the source. For the manufacturing industry the frequency of updates is as follows:

- Twice a year for point sources of pollution
- Once a year for field sources from industry
- Once a year for non-point sources of pollution (printing houses, cement plants, dry cleaners, wastewater treatment plants, quarries, landfills, gas stations)

Dataset Information:

Name of dataset	geographical coverage (Regional/ National)	Date of creation - date of last revision	Size of database (approximation of number of records)
1. Industrial System	Each relevant plant in the country	2001 June 2011	75MB 2,500 stacks
2. Emission Inventory.	Each relevant plant in the country	2005 December 2010	46MB 50,609 sources of air pollution

WASTEWATER

According to the conditions of the business license, industrial plants are obliged to sample their wastewater before it is discharged to the public sewage system. In addition, the MoEP samples industrial wastewaters independently according to its district work plans.

Various reports are sent to the MoEP:

- Periodical reports are received from the plants on special formats compiled by the assigned laboratories. In most plants PH values are registered continuously and flow rate meters exist. Some plants are required to sample additional parameters such as electric conductivity.
- Reports are received from town associations and environmental units with regard to the quality of plant wastewaters according to their sampling results.
- Regular reports are received from wastewater treatment plants regarding the quality of their entering wastewaters.
- Marine brine terminals send electronic reports regarding the quality of brines discharged by various plants into the sea.

Although hundreds of reports are received by the MoEP, there is still no organized database that integrates these reports in a standardised way. Each district has a different database (wherever exists). The MoEP plans to establish a comprehensive database that will integrate all the reports from the districts. The existing datasets are presented in the following table:

Dataset Information:

Name of dataset	geographical coverage (Regional/National)	Date of creation - date of last revision	Size of database (approximation of number of records)
1. Quality of the Dan Region Reclamation Project ("Shafdan")	The Dan Region	2000-2011	Hundreds
2. Quality of the Haifa wastewater treatment plant	Haifa	1999-2011	Dozens
3. The number of plants that are certified to discharge brines into the sea	National	2009-2011	Dozens

HAZARDOUS WASTE

According to Hazardous Substances Law, 1993, the possession of hazardous material requires a Hazardous Material Permit. The permits of all treatment facilities/exporters/importers include an obligation to report to the MoEP the data on hazardous waste they treat.

The data on hazardous waste are reported on a quarterly basis by the treatment facilities to the Information and Response Center at the Ministry, and annually by the importers and exporters. The data, which are reported by electronic excel Microsoft files, include: waste definition, quantity, treatment operation, wastes generated after treatment, recycled material if any, etc. The Information and Response Center guides treatment facilities/exporters/importers through the process of preparing the data and processes the data to produce an annual report. The system is currently incomplete as there is no uniformity of definitions and procedures, and there is lack of automatization. In order to receive the reports in due course of time, reminders are sent occasionally to the treatment facilities/exporters/importers. Information processing is mostly done manually. The data are obtained solely from the treatment facilities and it is difficult to cross-check the data with other sources.

The MoEP plans to build an online data collection system. In addition, it is planned to build an online hazardous waste tracking system. Each shipment of hazardous waste will be accompanied by an online electronic manifest instead of a paper manifest. Both systems will provide a possibility for cross-checking the data.

PRTR

The adoption of the Pollutant Release and Transfer Registers (PRTR) is a significant step which has been taken by the MoEP to upgrade Israeli environmental legislation and management to international standards. PRTR will enable decision makers and the public to access environmental data and develop useful environmental indicators. Implementation of the PRTR was one of the requirements of the OECD for Israel's accession to the organization. Israel has not ratified the Aarhus Convention on access to information, public participation in decision-making and access to justice in environmental matters, but is considering the ratification of the UNECE Kiev Protocol on Pollutant Release and Transfer Registers.

The MoEP is finalizing the process of legislation in accordance with the Kiev Protocol on PRTR. The PRTR act is expected to apply to some 500 facilities, which will have to report, on a yearly basis, on the quantities of 115 pollutants emitted into air, water, soil and marine environments, as well as on waste transfers and water and energy consumption.

The MoEP is currently in the process of preparing a Release Estimation Technique document for the various reporting sectors. The MoEP is also defining and developing the PRTR information system.

The law will enter into force upon its publication. The first reporting year will be 2012. First expected date of reporting - June 31, 2013.

3.4. Waste

According to the Maintenance of Cleanliness Law (1984), landfills are required to report on a yearly basis: waste quantities, sources and types. In 2007, a landfill tax came into force and landfills have since been required to report on a monthly basis: quantities, sources and types (municipal waste, construction & demolition and sludge). The data are received and analysed by the MoEP. For this purpose, a computerized system (CRM based) has been developed for data inputs and a BI system defined for data analysis (Qlick view software).

Local municipalities are required by law to report every year to the MoEP the amounts of municipal solid waste collected and recycled according to: type of waste, amount (tons), and recycling facility. Local municipalities also report their waste collection quantities annually to the CBS and these data are stored in an Access database.

Recycling facilities report their recycled quantities by type to the CBS, where the data are also kept in an Access database.

'Transfer-stations' are required to report to the MoEP on a yearly basis, according to their license permits. Reported data include: quantities, sources and types received and delivered, as well as destinations (landfills, recycling plants etc.)

The MoEP is currently developing a computerized database that will present an accurate overview of waste generation and treatment in Israel. The full system will be designed to include the information from all sources of waste.

The existing datasets are presented in the following table:

Dataset available in field of waste management:

Name of dataset	geographical coverage (Regional/ National)	Date of creation - date of last revision	Size of database (approximation of number of records)
1.Landfills (MoEP)	National	2007	1000 monthly reports
2.Transfer stations (MoEP)	National	Under construction	N/A
3.Municipalities (MoEP)	National	Under construction	N/A
4.Beverage containers and tire recycling (MoEP)	National	2001 (beverage containers) 2007 (tires)	20,000 reports 200-300 reports
5.Municipalities (CBS)	National	1996	Thousands
6. Recycling facilities (CBS)	National	1990	Thousands

3.5. GIS and spatial data infrastructure

GIS enables the geospatial presentation of environmental data. Its purpose is to dynamically incorporate the geographical context within the main environmental datasets of the relevant organizations.

Involved governmental institutions formed a GIS forum already 20 years ago. This forum is used mainly for knowledge sharing as well as for discussion or decisions related to used standards and technologies. The GIS forum also initiated the sharing of governmental spatial data among the participants. This is enabled by a metadata system and license agreements. The exchange of spatial data is still limited to traditional storage media (e.g. DVD). Web services (like WFS) have not yet been considered.

The GIS unit in the MoEP has developed a special web application which is currently available for internal use only. This system is based on an ArcGIS Server with a partial on-line link to Alfa-numeric systems of the organization. This application acts as web viewer for data owned by the ministry. The main system with its full functionality is available via the following Intranet link:

<http://moe-map/env/loader.aspx>

A subset of the system with limited tools is open to the public on a beta site:

<http://beta.govmap.gov.il>

A download functionality has not been installed but it is planned to open the portal to the public as a future step.

One of the system's weaknesses is the (lack of) accuracy of some of the locations. The MoEP staff is expected to locate new objects using the geographical unique new tools and therefore the MoEP has initiated an ongoing project to improve the accuracy of the locations of the objects.

The existing GIS datasets are presented in the following table:

Dataset available for GIS:

Name of dataset	geographical coverage (Regional/ National)	Date of creation - date of last revision	Size of database (approximation of number of records)
1. Waste Disposal Sites	National	2010	20
2. Sources of Contamination to Rivers	National	2009	300
3. Sources of land-based Pollution into Marine Environment	Coastal (Mediterranean)	2000	30
4. Industrial Emissions to Air	National	2011	An external data source
5. Sources of Hazards	National	2011	20,000

4. Future Steps

4.1. SEIS

The Shared Environmental Information System (SEIS) is a European Union initiative to modernize and simplify the collection, exchange and use of the data and information required for designing and implementing environmental policy.

SEIS is based on the following 'principles':

Information should be

1. Managed as close as possible to its source;
2. Collected once, and shared with others for many purposes;
3. Readily available to easily fulfil reporting obligations;
4. Easily accessible to all users;
5. Accessible to enable comparisons at the appropriate geographical scale, and citizen participation;
6. Fully available to the general public, and at the national level in the relevant national language(s);
7. Supported through common, free open software standards.

The MoEP is planning to establish a shared environmental information system for Israel in order to improve data sharing and availability for all relevant stakeholders and the public and to assimilate the principles mentioned above. Israel is a partner of the ENPI-SEIS (South) project, which enables it to learn from EU experience with the design and implementation of SEIS. In particular, the accumulated technological EU knowledge is of high value for the design and implementation of a SEIS project in Israel.

4.2. Implementation of the OECD Environmental Performance Review Recommendations

The OECD performed an Environmental Performance Review (EPR) for Israel, upon the accession of Israel to the organization. The EPR report (2011) looks at the country's environmental policies over the past decade and presents 41 recommendations aimed to support Israel's initiatives in the fields of green growth, environmental management, international cooperation, water management, biodiversity, climate change and air quality and waste management. Selected recommendations relevant to the ENPI-SEIS project are presented below:

4.2.1. General

- Expedite the ratification of major global and regional environmental conventions and protocols, particularly in the fields of chemical and waste management as well as biosafety, biodiversity and protection of the Mediterranean Sea.
- Mainstream and strengthen the environmental component of official development assistance within an expanding volume of development aid.
- Strengthen the government's monitoring, inspection and enforcement capabilities in order to curtail the illegal introduction of alien species and trade in endangered species, hazardous waste and ozone-depleting substances.

- Continue to explore avenues of co-operation with neighbours on pressing marine pollution and transboundary water and waste management problems, particularly at sub-national level and through non-governmental channels, as well as through accession to relevant international agreements.
- Strengthen the system of self-monitoring by requiring all facilities subject to such requirements to report regularly to environmental authorities; enhance the capacity of environmental inspectors to undertake multi-media compliance monitoring and verification.
- Introduce a system of performance indicators to monitor the effectiveness and efficiency of environmental policy implementation in the framework of results-oriented planning and budgeting.

4.2.2. Water

- Consider broadening the use of economic instruments for water management, including: expanding the scope of the proposed marine pollution tax to include effluent discharges in freshwater and aquifers; ensuring that water abstraction tax rates reflect water scarcity; introducing a pesticide tax with rates reflecting pesticide toxicity; and trading water quotas among different agricultural producers and, in the medium term, with other water users.
- Consider how local ecological conditions and minimum river flows could be better reflected in decisions on water allocation among different sectors and the natural environment.
- Define water quality objectives for all stretches of rivers, and issue discharge and abstraction permits accordingly.

4.2.3. Industrial Emissions

- Using the legal basis provided by the Clean Air Law, introduce an air emissions levy targeting priority pollutants emitted by large and medium-sized stationary sources.
- Building on the voluntary emissions reporting scheme, establish a mandatory Pollutant Release and Transfer Register that includes GHG emissions; strengthen data quality control across the various ambient air quality monitoring networks.

4.2.4. Waste

- Review current arrangements for the management of waste, including hazardous waste, and consolidate them in a comprehensive and coherent new policy, possibly a new law, and an action plan.
- Building on pilot projects, roll out the program for the separate collection of dry and organic waste to all municipalities; develop related treatment infrastructure,

including a wider use of waste-to-energy solutions, and engage the private sector in this effort.

- Broaden Extended Producer Responsibility systems to include other priority waste streams, including batteries, waste electric and electronic equipment, and vehicles; strengthen the collection and safe disposal of used oils and car oil filters; ensure that their design and implementation is effective and efficient.
- Develop comprehensive legislation on liability for pollution from the past and a program for the remediation of contaminated sites, providing adequate resources and using the risks to human health and the environment as guidance to prioritize actions.

Israel is preparing for the implementation of the recommendations of the OECD Environmental Performance Review. In the implementation process, we will look into areas of potential cooperation with the EEA.

4.3. Planned Pilots

4.3.1. Waste Pilot

The CBS is currently conducting a combined survey in the manufacturing and electricity industries regarding environmental expenditure and waste and wastewater. The questionnaire follows the methodology of the OECD. The expenditure part of the survey is being conducted for the second time. The results of the first round of the survey are available on:

http://www.cbs.gov.il/webpub/pub/text_page_eng.html?publ=82&CYear=2008&CMonth=1

The survey of waste and wastewater is conducted for the first time. In this part of the questionnaire we included questions on the quantities of waste and wastewater, on treatment methods of waste and wastewater and pollutants released into wastewater. Also included are questions on fuel consumption and selected basic raw materials used in the production process. The indicators (for the manufacturing industry) derived from this survey include: quantity of waste by industry and by material, quantity of wastewater by industry, recycling rate by industry, raw materials use for the development of future LCA, energy and fuel use by industry.

Since the waste and wastewater questions are new, the quality of the input data is unknown. In particular, there is the problem of estimating the quantities of waste by components. Some plants do not keep records of their waste, some do not know its composition, and others can estimate only the total volume of waste. There is a great need for assistance regarding this issue in order to improve the quality and reliability of the data for decision makers, researchers and the public. Experience of EU countries or organizations could help us develop a methodology for accurately estimated waste composition when data are lacking. Methodology components may include industry-specific coefficients, imputation methods and other means of handling incomplete data.

Another area where assistance is needed is regarding the technological platform for presentation and sharing of the data as these data are important for many users with diverse needs at the national and international levels.

EEA guidance and assistance may encompass the following activities:

- Study visits to institutions with the relevant experience
- Workshop on waste information for data producers and users
- Consultancy/ training regarding the practiced methodology for estimating waste and wastewater quantities and composition.
- Workshop on waste and wastewater statistics in the manufacturing industry, where information would be shared among the ENPI-SEIES partners.

4.3.2. PRTR Pilot

As mentioned earlier, the MoEP is in the process of establishing a PRTR system, which will be used for the input, processing and maintenance of an annual inventory of emissions into air, soil and water sources as well as of transfers of waste and wastewater. The system will include reports from about 500 facilities, whereas emissions from non-reporting facilities will be calculated by the MoEP and incorporated into the system. The inventory will be available to the public in a coherent and accessible manner.

PRTR legislation is in its final stages and is expected to be concluded in the coming weeks. According to the proposed law, the MoEP will have the authority to require plants to report information on their activities, such as financial and production data, in order to develop environmental indicators for the reported emissions (e.g. emissions per output or emissions per product) and indicator grades per plant, which will be available for public use.

As the PRTR is a new system in Israel, it will be useful to learn from the experience of other countries with plant methodologies for calculating emissions, the data content required for calculations and collection procedures (Release Estimation Techniques). Information regarding the preparation of a calculation manual and guidelines is also needed. In addition, there is lack of information regarding the best available methodology for calculating environmental efficiency indicators for industrial plants.

EEA guidance and assistance could include the following activities:

- Study visits to institutions with the relevant experience
- Workshop on waste and wastewater information for data producers and users and for producing PRTR reports.
- Consultancy/ training regarding the practiced methodology for calculating emission quantities for PRTR systems.
- Workshop on waste and wastewater statistics in the manufacturing industry, where information would be shared among the ENPI-SEIES partners.
- Consultancy/ training regarding practiced methodologies for calculating and analysing environmental efficiency indicators for the manufacturing industries.

Israel is submitting a proposal for a Twinning Project entitled: Support to the Israeli MoEP in the implementation of the Integrated Pollution Prevention and Control (IPPC) Directive and the PRTR Protocol through the development and capacity-building for the necessary legal, institutional, administrative and procedural frameworks for integrated permitting and inspection of industrial pollution and the provision of public information on the release and transfer of pollutants. This project is in line with the EU/Israel Action Plan and the EU acquis communautaire in the field of pollution prevention and control.

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