



**EU Twinning Project
IS12/ENP-APFI/o8**

**Support to the Israeli Central Bureau of Statistics
in the development of National Accounts, Education Statistics,
Survey Methodology, ICBS Website and
Coordination of Israel National Statistical System**

Component A

Activity A.12

**Methodology on environmental accounting
with emphasis on air and waste accounts**

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External annexes produced for the activity (Power Point presentations):

Annex A12.4 Introduction to the activity	
Annex A12.5 Environmental Accounts in the EU - history and background	
Annex A12.6 UN recommendations on environmental accounting	
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Annex A12.8 Waste statistics and accounts in the EU	
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CBS documents

Annex A12.12 Development of Water Accounts in Israel (pdf)	
Annex A12.13 Emissions of Air pollutions and Greenhouse Gases in Israel (pdf)	
Annex A12.14 Environmental Statistics in Israel (pdf)	
Annex A12.15 Environmental Protection Expenditure Accounts (pdf)	
Annex A12.16 Waste Generation and Waste Treatment in Israel (pdf)	
Annex A12.17 Waste accounts – existing and missing information (Excel)	
Annex A12.18 Air accounts – existing and missing information (Excel)	

List of Abbreviations

AEA	Air Emission Accounts
CEPA	Classification of Environmental Protection Activities
BC	Beneficiary Country (Israel)
CBS	Central Bureau of Statistics (Israel)
EA	Environmental Accounting
EU	European Union
EW-MFA	Economy-wide material flow accounting
GHG	Greenhouse Gases
MoEP	Ministry of Environment Protection (Israel)
MS	Member State
PRTR	Pollutant Release and Transfer Register
SEEA	UN System of environmental-economic accounting
SU	Industry Survey of ICBS
SY	Social Survey of ICBS
UN	United Nations

1 Summary

During the mission current status and challenges of environmental statistics and accounts in Israel were presented and discussed, as well as characteristics, components, classifications and implementation of the UN and EU environmental accounting frameworks.

Waste statistics and accounts and air emission statistics and accounts were analyzed and discussed at detailed level, and the CBS made summary tables on data availability and on waste and air emissions for environmental accounting purposes. Basic data and statistics of the CBS and the Ministry of Environmental Protection on waste and emission to air offer good starting points to develop waste statistics/accounts and air emission accounts according to the main standards of environmental accounting framework of United Nations and the European Union.

Detailed comparison of the PRTR register and statistics/data collected/compiled by the CBS at air emission type and by waste type is needed in order to define specific needs to collect additional basic data on waste and emissions to air.

Even if the development of environmental accounts is focused on water, waste and air emissions, it is useful in long term to pay attention and at applicable level develop also energy accounts and economy-wide material flow accounts. Development of environmental expenditure accounts could in the short run concentrate on expenditure of waste management and air protection.

2 General comments

The MS Expert mission A.12 was the first activity within the Environmental Accounts sub-component of the general National Accounts component of the EU/Israel Twinning project on statistics. Two more activities, another MS Expert mission (A.13) and a study visit to Statistics Finland (A.14) are planned within the sub-component.

The mission was implemented according to the agreed set of Terms of Reference and Agenda which are included in this report as Annex A12.1 and A12.2, respectively.

The MS Expert would like to thank the staff the Central Bureau of Statistics for their hospitality, fruitful discussions and all the very clear and structured information provided during the mission. Participation of so many experts from the ICBS and from Ministry of the Environment Protection and University of Tel Aviv was very important for the mission and for successful proceeding of the action on environmental accounting.

The views and observations stated in chapters 2 and 3 of this report are those of the MS Expert and do not necessarily correspond to the views of EU, Statistics Denmark or Statistics Finland.

3 Assessment and results

On the first day of the mission the BC presented current status, dissemination and challenges of environmental statistics and accounts in Israel. These statistics and accounts include air emissions, waste, water and wastewater, environmental expenditures, biodiversity, and environmentally related activities like pesticide survey, agri-environmental indicators and sustainable development indicators.

The MS Expert gave a short introduction of the role of Statistics Finland in the field of environmental accounting in United Nations (UN), European Union (EU) and in Finland. Presentation of the MS on background of environmental accounting in the EU consisted of brief description on political context of Environmental Accounting (EA) in the EU, and use of the Environmental Accounts (EA) as a statistical framework investigating interplay between the economy and the environment. Presentation on the UN recommendations for System of Environmental-Economic Accounting (SEEA) and Environmental Accounts (EA) in the EU included the general characteristics and framework of the SEEA, the main components and classifications of the SEEA, and current implementation and plans for the future implementation of the SEEA by the UN and in the EU.

The second day was dedicated to waste statistics and accounts in Israel and in the EU. The ICBS presented waste sources and treatment of waste by waste type in Israel, as well as data sources and challenges in compilation of waste statistics. Development of water accounts in Israel was also presented. The MS gave a description on waste statistics and reporting obligations according to waste statistics regulation of the EU, waste statistics and accounts as part of environmental accounting framework, differences between waste statistics and waste accounting approaches, and co-operation between Statistics Finland and environmental government of Finland in the field of waste statistics and accounts.

The main topics of the third day were air emission statistics and accounts. The ICBS presented data sources, compilation methods and distribution of air emissions to economic sectors by greenhouse gases and other air pollutants in Israel. The MoEP also presented the data collected for the Pollutant Release and Transfer Register (PRTR) and availability of summarized data from the public web-sites. The MS Expert presented the EU questionnaire of air emission account by economic activity and the role of air emission accounts in the SEEA and in the framework of economy-wide material flow accounting (EW-MFA) of the EU. A summary of data flows between Statistics Finland and organizations of environmental government and a summary on uses of environmental accounts in Finland were presented, as well as organization and connections of Greenhouse gas inventory and air emission accounts in Finland. Environmental expenditure accounts and water accounts of Israel were briefly discussed.

The RTA, BC and MS discussed and drafted plans for the development of waste statistics/accounts and air emission accounts in Israel that could at applicable level follow the standards of the UN SEEA and the EU environmental accounts.

Due to extreme and rare weather conditions in Jerusalem the fourth day was focused on draft conclusions of the missions and report writing (and evacuation of the MS Expert to Tel Aviv).

During the mission the BC made summaries on data availability and data sources on waste and air emissions by the main waste and emission types and by groups of economic sectors. These overviews are connected to this report as external annexes A12.17 and A12.18. Availability of data from the PRTR register and other data of the MoEP on both waste and air emissions and

applicability of the data to environmental accounting purposes was evaluated and clarified several times during the discussions.

4 Conclusions and recommendations

From the point of view of environmental accounting approach, basic data and statistics of the ICBS and the MoEP on waste and emission to air offer good starting points to develop waste statistics/accounts and air emission accounts. These statistics and accounts should by their main parts follow the standards of the UN SEEA and EU environmental accounting and classification of economic activities (ISICS), but national interest and use of the accounts define the applicable level of disaggregation of the ISIC sectors necessary for waste and air emission accounts.

Several organizations provide basic data for environmental statistics and accounts in Israel. The most important of these are

- Agriculture, environment and energy sector of the ICBS,
- The unit of the ICBS responsible for monetary input-output tables,
- Ministry of Environment Protection,
- Ministry of the Agriculture,
- Ministry of National Infrastructures Energy and Water Resources/Fuel Administration,
- Israel Natural Gas Lines,
- Israel Electric Corporation and
- Environmental Services Company.

Although the ICBS is in the key position to develop and compile environmental accounts, information on basic principles and uses of environmental accounting could be useful for all data providing organizations.

In the environmental accounting framework air emission accounts, waste statistics/accounts and water accounts are physical flow accounts and to some extent connected to each other. Physical energy flow accounts (supply-use tables of energy) are very closely related to air emission accounts. Monetary environmental expenditure accounts cover expenditures on waste management, water and waste water management and air protection. Even if the development of environmental accounts is focused on water, waste and air emissions, it is useful in long term to pay attention and at applicable level develop also energy accounts.

Data collected by the MoEP on solid waste and air emissions to the PRTR reporting purposes cover only the largest plants and facilities producing waste and air emissions, but especially on most of the air emissions components the coverage can be a basis for environmental accounting purposes. Coverage of the PRTR data is expected to expand in the future, when the amount of medium size plants reporting to the PRTR is planned to gradually increase.

Detailed comparison of the PRTR register and statistics/data collected/compiled by the ICBS at air emission type and by waste type is needed. Results of this comparison will show the areas where new surveys or other new data collection is needed, and areas where estimation and modeling based on e.g. monetary supply-use tables can provide results reliable enough for environmental accounting purposes.

Most of the data of the ICBS and the MoEP can be disaggregated to branches of industry according to the ISIC and NACE classification, although the very detailed level of the NACE A64 especially in services sectors could be problematic due to the limited number of reporting companies and their concentration in specific industries.

At the first phase of development on waste accounts and air emission accounts it is important to concentrate and clarify the applicability of data by the main industries/economic activities (agriculture, mining, manufacturing, energy and water supply, transportation, households, other),

Detailed application of the ISIC in manufacturing industry could be based on the most important industries/economic activities in Israel, and not necessarily to the level of disaggregation adapted to environmental accounting by the EU regulation on environmental accounting.

As both waste accounts and air emission accounts are parts of the economy-wide material flow accounting framework (EW-MFA), it could be worth to consider starting the development of also the domestic extraction, import and export tables as defined in the EW-MFA

Need of information on generation and treatment of municipal waste by economic activity is at a high priority level in Israel. From environmental accounting point of view, disaggregation of data on municipal waste to household and commercial activities is very important. Further disaggregation of commercial activities should follow the ISIC –classification, but not necessarily at the level as detailed as in the NACE A64.

Development of environmental expenditure accounts could concentrate in the short run on expenditure of waste management and air protection. However, in collection of data on expenditure by surveys or other means, data on other expenditures included into CEPA classification should be taken into account as well.

The study visit to Finland could include the following topics:

- Co-operation of Statistics Finland and other organizations in compilation and use of environmental accounts
- Use of environmental register in compilation of waste statistics and GHG/EAE calculations
- Methodology for disaggregating data on generation of municipal waste to households and commercial activities including services sector
- Methodology for compilation of statistics on generation and treatment of construction waste
- Methodology for compilation of air emission accounts from greenhouses gas inventory data and other data sources
- Compilation and use of energy accounts (physical supply-use tables for energy)
- Compilation and use of economy-wide material flow accounts

Summary of the recommendations:

Short-term (1 year, within the Twinning project's life time)

- Formalize co-ordination with MoEP
 - A regular meeting structure based on a MOU
 - Examination/estimation of the coverage of the data collected and reported by MoEP by waste and emission types. Identification of the main data gaps by the main branches of industry (ISIC).
 - Change of information on development and use of emission factor on fuels and other material relevant to emission accounts
- Formulate the longer-term development plan, cf. below

Long-term (3-5 years): possible goals

- Applications of physical supply-use tables according to UN and EU environmental accounting framework
 - Air emission accounts (air emissions by economic activity)

- Generation of waste by economic activity and by waste type
- Physical supply-use tables for energy (depends on available resources within the ICBS)
- Economy-wide material flow accounts (depends on available resources within the ICBS)
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- Application of monetary flow accounts
 - Environmental expenditures especially on waste management and air protection

5 Road map and time plan

Preliminary dates for next activities

- April 2014 – next MS Expert mission (A.13)
- August 2014 - study visit to Statistics Finland (A.14)

Work plan

- Before April - analysis of PRTR data: comparison and overlap with ICBS data
- Internal ICBS discussions of the level of short and long term ambitions, and considerations regarding possible additional data collection.
- Internal ICBS discussions on how to develop compilation of monetary input-output tables together with the development of air emission accounts and physical supply-use tables for energy
- April (A.13): drafting of development plan for waste and air
- August (A.14): discussions of final draft of development plan

Annex A12.0 List of materials provided to the ICBS

Manual for the implementation of regulation (EC) No. 2150/2002 on Waste Statistics

Guidance on classification of waste according to EWC-Stat categories

Supplement to the Manual for the Implementation of the Regulation (EC) No 2150/2002 on Waste Statistics

Waste incineration: recovery or disposal?

Guidance on the interpretation of waste treatment statistics regarding waste incineration

Air Emissions Accounts

Eurostat Questionnaire 2013

Economy-wide material flow accounts (EW-MFA)

Eurostat Questionnaire 2013

Annex A12.1 Terms of Reference

Activity A.12

Methodology on environmental accounting with emphasis on air and waste accounts

Mandatory results and benchmarks related to activity A.12

Mandatory result	Benchmark
Definition of the structure of waste and air environmental accounts	Structure of waste and air environmental accounts defined by 6 th project quarter

Subject / purpose of activity A.12

The subjects of the activity are

- Assessment of the present situation
- Identification of problems and how to solve these
- Presentation and discussion on methodology and compilation of environmental accounts with special focus on waste and air accounts.

Expected output from activity A.12

The expected output from the activity is a report with recommendations on

- work to be done to develop accounts on waste and air,
- and how to adapt to international standards and definitions of concepts in environmental accounts.

Annex A12.2 Programme: 9-12 December 2013

Date	Place	Time	Event
Mon 9/12	CBS	09:00	Introduction to this part of component A: Environmental Accounts
		09:15	BC (CBS): Current status of Environmental Accounts in Israel – existing infrastructure for waste and air accounts BC (MoEP): The data collection schemes and need for statistics
		10:30	Coffee break
		11:00	MS: Environmental Accounts in the EU - history and background
		11:45	MS: The United Nations system and Standard of Environmental-Economic Accounting
		12:15	Lunch
		13:30	MS: Co-operation and data flows between the National Statistical Office and the Ministry of Environment Protection in the EU
		14:30	MS: The use of Environmental Accounts for policy use
		15:00	Coffee break
		15:15	Discussion: Development of Environmental Accounts in Israel
		15:45	Summary and introduction to Tuesday and Wednesday meetings
Tue 10/12	CBS	09:00	Introduction to waste accounts
		09:15	BC: Available data and compilation of statistics on waste accounts in Israel
		10:00	MS: Waste statistics and accounts in the EU
		10:30	Coffee break
		11:00	Discussion: Development of waste accounts in Israel, and implied additional data needs (surveys)
		12:15	Lunch
		13:30	Discussion: Drafting a preliminary work plan for development of waste accounts for Israel
		15:00	Coffee break
Wed 11/12	CBS	15:15	Conclusions
		09:00	Introduction to Air Accounts
		09:15	BC: Available data and compilation of statistics on air accounts in Israel
		10:00	MS: Air accounts in EU
		10:30	Coffee break
		11:00	Discussion: Development of air accounts in Israel, and implied additional data needs (surveys)
		12:15	Lunch
		13:30	Discussion: Drafting a preliminary work plan for development of air accounts for Israel
Thu 12/12	CBS	15:00	Coffee break
		15:15	Conclusions
		09:00	BC: Monetary Environmental Accounts – collected data and statistics on environmental investments in Israel
		10:00	Discussion of preliminary recommendations and work plan
		10:30	Coffee break
		11:00	Ad-hoc meetings and report writing, cross-cutting methodological issues

12:15	Lunch
13:30	Preparation for debriefing
15:00	Debriefing

Annex A12.3 Persons met

CBS:

Moshe Yanai, Head of Environment, Energy and Agricultural Statistics Department
Tali Tal, Head of Infrastructures Department
Yaniv Sharabi, Environmental Expenditure expert
Oz Karpel, Water Accounts expert
Roe Abudi, Waste Accounts expert
Amit Yagur-Kroll, Senior Co-ordinator
Yulia Levinger, Government Accounts Division
Malka Levinger, Macro-Economics Department

Ministry of Environmental Protection

Uri Shilhav, PRTR Co-ordinator
Eran Himmel, Landfills and data
Eynat Bronshtein, Landfills and transfer stations
Eldad Tzadok, Economics Department
Daniel Sharon, Industrial Waste and Water

Tel Aviv University

Noa Stern, PhD (Interdisciplinary Center, Herzliya)

DHV

Tomer Ben-Avraham