Statistics Netherlands

Report

Compiling the EPE module for the Netherlands: short time series plus improvements

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Statistics Netherlands
National Accounts Department
Sjoerd Schenau

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Contact: Sjoerd Schenau (s.schenau@cbs.nl)

Index

1. Introduction

Environmental protection expenditure accounts (EPEA) present data in a way that is fully compatible with the data reported under ESA, on the expenditure for environmental protection, i.e. the economic resources devoted by resident units to environmental protection. The accounts allow compiling the national expenditure for environmental protection (EP) which is defined as the sum of uses of EP services by resident units, gross capital formation for EP activities, and transfers for EP which are not a counterpart of previous items, less financing by the rest of the world.

Environmental protection expenditure accounts are part of the SEEA Central Framework (UN et al 2012), which was adopted in 2012 as an international statistical standard. Environmental protection expenditure (EPE) is one of the three modules for the extended legal base on environmental accounting. According to the set-up of this legal base, data are required for a number of economic variables and environmental domains (CEPA). According to this legal base, the first data on the EPE module have to be sent to Eurostat in 2017.

In 2013, a Eurostat grant project was done to compile data for the EPE module for the Netherlands for one year (Statistics Netherlands, 2013). It was found that, generally, for the Netherlands it is relatively easy to fill in the obligatory tables of the EPE module using data that is already available from the National accounts, government statistics and the EPE statistics for businesses. However, there were still some issues that needed to be solved / investigated.

The aim of the current project is to assess and solve some of these remaining problems for compiling the EPE module for the Netherlands. The remaining issues that will be addressed here are:

1. *Expenditure for local government:* So far, we did not yet directly use the COFOG statistics for government. In this project we want to determine to what extent COFOG data from government statistics can be used to provide the data that is needed to calculate environmental expenditure and fill Table 1 of the questionnaire.
2. *Environmental transfers:* In the 2013 report we did not yet try to fill Table 6 on environmental transfers. Based on the results for local government and central government we will fill Table 6 of the questionnaire as far as possible and identify the remaining data gaps.

In addition, this project will generate a short time series by compiling the EPE tables for 2010-2013 and two older years (2001 and 2005). The outcome of this project will result in a new work process that will enable Statistics Netherlands to annually compile the EPE module as is being proposed for the legal base.

The theoretical framework for EPEA, the setup of the EPE module for Eurostat and the current EPER statistics in the Netherlands were already discussed in our previous report (Statistics Netherlands, 2013) and we refer to that for more background information. In chapter 2 we will discuss to what extent COFOG statistics can be used

to provide the data to calculate environmental expenditure for local government and fill in Table 1 of the questionnaire for the EPE module. In chapter 3 we will discuss the data sources for environmental protection transfers for Table 6 of the questionnaire. In chapter 4 we will describe how we compiled time series for the EPE module. Finally, in chapter 5 we will round up with some conclusions and recommendations for further improvement.

2. Environmental expenditure for local government

2.1 Introduction

Local government plays an important role in providing characteristic environmental services like waste collection and waste water treatment. In addition they provide (like central government) organisational and regulatory environmental services.

In 2013 Statistics Netherlands compiled data for the EPE module for the Netherlands for one year based on available data sources (CBS, 2013). In this first study we used data from government source statistics to compile data for local government. COFOG statistics were not yet directly used. We made however a first comparison with the COFOG statistics on a more aggregated level and found some important differences. A recommendation of this report therefore was to further investigate these differences. COFOG data from government statistics potentially provide all the important accounting identities to calculate total environmental output and gross fixed capital formation. Therefore, it was also recommended to investigate if it was possible to obtain the data for the EPE module directly from the COFOG statistics instead of the source statistics.

The main goal here is thus to determine to what extent COFOG data from government statistics can be used to provide the data to calculate environmental expenditure and fill in Table 1 of the questionnaire for the EPE module and whether other data sources are needed. First we will discuss how COFOG statistics are organised and how these in general could be used as a data source for the EPE module. Then we will discuss in detail the different local government organisations, namely municipalities, intermunicipal corporations, water boards, and provinces, and will focus on how to link the COFOG classification to the CEA (classification of environmental activities) classification. We will discuss separately how to determine intermediate consumption of EP services for local government. Finally, we will present the results for total local government and compare these with the EPER statistics, i.e. what is currently reported in the joint questionnaire..

2.2 COFOG data for government expenditure

As part of the Dutch government statistics, all government expenditure is allocated to COFOG categories. This is done for all different government subsectors (i.e. central government, municipalities, provinces, water boards, etc.) for COFOG on a 2-digit level and all relevant ESR transaction categories. Table 2.2.1 provides an overview of the data that the COFOG statistics can provide for COFOG 05.

2.2.1 overview the table for COFOG 05 from the COFOG statistics

ESA transactions		*Environment protection* **CG05**	*Waste management* **CG0501**	*Waste water management* **CG0502**	*Pollution abatement* **CG0503**	*Protection of biodiversity and landscape* **CG0504**	*R&D Environmental protection* **CG0505**	*Environmental protection n.e.c.* **CG0506**
D.1	Compensation of employees							
D.29	Other taxes on production							
D.39	Other subsidies on production							
P.51c	Consumption of fixed capital							
P.2	Intermediate consumption							
P.11A+P.131	Market output + payments for non marktoutput							
P.12A	Output for own final use							
(P.132)	Non-market output							
(P.3)	Final consumption expenditure							
D.3	Subsidies							
D.41	Interest							
D.45	Rent							
D.621	Social security benefits in cash							
D.622	Other social insurance benefits							
D.623	Social assistance benefits in cash							
D.71+D.72	Net non-life insurance premiums + Non-life insurance claims							
D.73	Current transfers within general government							
D.74	Current international cooperation							
D.75+D.76	Miscellaneous current transfers							
D.92	Investment grants							
D.99	Other capital transfers							
NP	Acquisitions less disposals of non-produced assets							
P.51g	gross fixed capital formation							
P.52+P.53	Changes in inventories /acquisitions less disposals of valuables							
Total expenditure								

COFOG statistics are very useful to provide the data needed to compile the environmental protection accounts for government. Firstly, they directly provide the key economic variables according to the ESR codes, such as gross fixed capital formation, intermediate consumption, compensation of employees, consumption of fixed capital etc.). Secondly, the COFOG classification already has a category for the environment (COFOG 05) containing at a 2-digit level information needed to allocate the data to CEPA. As can be seen in table 2.2.2 there is not always a one to one link between CEPA and COFOG. For some CEPA categories an additional allocation has to be made of the COFOG data, particularly with regard to COFOG 05.3 (pollution abatement). In addition to environmental protection there may be expenditures related to resource management which are classified according the CReMA classification. There is no clear link between COFOG and CReMA (see also Eurostat, 2012). Here, we have to further investigate the source statistics. For local government, expenditure are mostly related to environmental protection and not to resource management, with one important exception namely water resource management which is an important task of the water boards.

2.2.2: Correspondence table between COFOG and CEPA categories

EPE accounts		COFOG (05 environment protection)	SEEA (CEPA 2000)
Waste management	Collection and transportation	05.1.0 Waste management	3. Waste management
	Treatment and disposal		
	Other activities		
Wastewater management	Sewage networks	05.2.0 Wastewater management	2. Wastewater management
	Storm water networks		
	Other activities		
Pollution abatement	Protection of ambient air and climate	05.3.0 Pollution abatement	1. Protection of ambient air and climate
	Soil and groundwater protection		4. Protection and remediation of soil, groundwater and surface water
	Restoration and cleaning of water bodies		
	Noise and vibration abatement		5. Noise and vibration abatement
	Protection against radiation		7. Protection against radiation
	Other activities		
Protection of biodiversity and landscape	Landscape and habitat protection	05.4.0 Protection of biodiversity and landscape	6. Protection of biodiversity and landscapes
	Species protection		
	Rehabilitation of species populations and landscape		
Research and development		05.5.0 Research and development environment protection	8. Research and development
EPE n.e.c	General administration	05.6.0 Environment protection n.e.c.	9. Other environmental protection activities
	Education, training, information services		
	Other activities		

(*) "Other activities" includes measurement, control, laboratories and the like, as well as administration, training, information and education activities specific to the domain, when they can be separated from other activities related to the same domain and similar activities related to other classes

Source: Eurostat (2012)

2.3 Municipalities

Municipalities in the Netherlands are responsible for several environmental tasks. Below we will discuss them separately.

a) Waste collection and treatment

Municipalities are responsible for public waste collection and waste treatment. This task is financed by households through the mandatory waste disposal fee (in Dutch afvalstoffenheffing) and to a lesser extent by cleaning duties (in Dutch reinigingsrechten), such as for bulk waste. Companies can choose whether to pay a waste disposal fee to municipalities or to purchase environmental services from private companies. In the NA the waste disposal fee is not recorded as a tax but as a service that is supplied by government.

The COFOG data can be used to determine the output of activities related to waste collection and treatment (COFOG 05.1). For 2011 total output related to waste collection and treatment for municipalities is 3083 million euro. There is a large difference between the total output according to the official COFOG data and the expenses as found was in the EPER statistics (see also statistics Netherlands, 2013). These data are based on physical waste data and tariffs for waste collection/treatment. Also, according to the COFOG data the expenses are much higher than the income for the 'waste collection and treatment': total revenues from the waste disposal fee plus additional incomes which equal 2312 million euro for 2011. This contrasts with several government reports on this issue which claim that the costs for waste collection and treatment are covered by the benefits (i.e. fees and other income related to waste). Also, there is a legal obligation that total revenues from waste disposal feeds may not exceed the expenditures as municipalities are not allowed to make 'a profit' from these fees. So total expenses must always be equal or less than the total revenues.

The total expenses for waste collection and treatment was further investigated by looking at the source data for the finances of municipalities, the so-called Iv3 matrix. In this Iv3 matrix the expenditures and incomes are recorded according to different functions, including several functions related to environmental protection[1]. To compile the COFOG statistics these functions are allocated to different COFOG classes. Sometimes functions are attributed entirely to one COFOG class, in other cases functions are split and distributed to several COFOG classes based on certain distribution keys. Table 1.3.1 shows which functions are allocated to COFOG 05.1. As can be seen function 721 'waste collection and treatment' is allocated as a whole to

[1] Local governments use accrual accounting standards, but do not employ standardized charts of accounts and/or nomenclatures. Since 2004, the BBV regulation (the "*Besluit Begroting en Verantwoording provincies en gemeenten*") requires local governments to report quarterly and annual source data to the CBS using the "Iv3" reports (i.e., a standardized, detailed questionnaire). Iv3 reports are based on their budgets, which contain information on revenue and current expenditure, showing "functions" (local government nomenclature, not COFOG), including budgeted data for taxes and some market output activities;

COFOG 05.1. However, there are also some other functions that are attributed to COFOG 5.1. A significant portion (40 %) of the expenditure for roads, streets and squares (function 250) is attributed to COFOG 05.1 (i.e. 907 million euro) as it assumed that a significant part of this expenditure is related to cleaning of the streets. The contribution of other functions (mainly related to fixed assets) is much smaller.

2.3.1 Data from the Iv3 matrix allocated to COFOG 05.1

COFOG	Function Iv3 matrix		Fraction of function allocated to COFOG class	D1	P2A	P51c	D29	Total ouput
05.1	210	Roads, streets, squares	0,40	235	587	80	5	907
	721	Waste collection and management	1,00	355	1457	198	10	2021
	A125	Fixed assets: machines	0,51	1	2	0	0	3
	A126	Fixed assets: other	0,04	0	1	0	0	1
	A129	Fixed assets: transport	0,33	5	19	3	0	27
	P12	Provisions	0,15	26	86	12	0	123
		Total		621	2152	293	16	3083

We have concluded that the output for waste collection and management according to the COFOG data is too high. The inclusion of 40 % of the expenses related to roads is probably much too high as most of these expenses are related to road repair and maintenance and not to cleaning activities. Thus, we have excluded the expenses for roads which result in a total output for CEPA 2 of 2169 million euro, which is much closer to the total incomes for waste collection and treatment

b) upkeep of the sewer system

A second important environmental task of municipalities is the upkeep of the sewer system. Activities include the replacement and maintenance of the sewers. The main expenses are thus investments and maintenance costs. From a report on the Dutch sewer system it appears that the employees responsible for the maintenance of sewage was largely employed by the municipalities themselves (2180 FTE in 2009). Only a small portion (450 FTE) was hired from specialized companies (17 percent total). Accordingly, sewer services are mainly an in-house activity by municipalities. The sewer services are financed by a sewerage tax (in Dutch rioolrechten) that is paid by households and companies that are connected to the sewer system. This ‘earmarked’ tax is part of the environmental taxes.

The total output for upkeep of the sewer system can again be derived from COFOG data (COFOG 05.2) and equals 1765 million euro for 2011. More in depth analysis of the allocation of the Iv3 matrix data to COFOG revealed that besides function 722 (sewerage) also some other functions are allocated (partially) to COFOG 05.2 (Table 2.3.2). These are, similar to waste collection and treatment, functions related to expenses for fixed assets, but also expenses for the exploitation of construction areas (7 %). This last allocation may also be questioned, however, in this case, we decided not to adjust the COFOG data. Also some expenses for management of groundwater and rainwater (functions 730 and 731) are allocated to COFOG 05.2, which may have to be allocated to CReMA10. However the expenses involved her are very small (less than 3 million euro in 2011) and therefore we did not change the allocation of COFOG data.

2.3.2 Data from the Iv3 matrix allocated to COFOG 05.2

COFOG	Function Iv3 matrix		function allocated to	D1	P2A	P51c	D29	Total ouput
05.2	722	Sewerage	1,00	166	402	789	2	1359
	729	Other waste water	1,00	4	8		0	12
	730	Rain water	1,00	1	2		0	3
	731	Groundwater	1,00	0	2		0	2
	830	Exploitation construction areas	0,07	32	35		1	68
	A124	Fixed assets: civil engeneering for construction	0,50	22	64		0	87
	A126	Fixed assets: machines	0,02	0	0		0	0
	A129	Fixed assets: other	0,01	0	1		0	1
	A211	Stocks: not exploitation construction areas	0,07	1	2		0	3
	A212	Stocks: other	0,50	1	1		0	1
	A213	Stocks: other	0,07	3	10		0	13
	P12	Provisions	0,14	24	80		0	104

Gross fixed capital formation for sewers is an important item for municipalities. Total gross fixed capital formation for CEPA 2 can also directly be derived from the COFOG data. In depth analysis of the Iv3 matrix shows that most of the gross fixed capital formation for COFOG 05.2 comes from function A124 'fixed assets: civil engineering for construction'. 51 % of these fixed assets is assumed to be related to sewers, resulting in total gross fixed capital formation for sewers of 1093 million euro for 2011 (table 2.3.3). This figure is significantly higher than data that is reported by RIONED, a foundation for sewerage and water management in cities: 720 million euro (RIONED, 2013).We conclude that the percentage of 51 % used to allocate the Iv3 data to COFOG is too high and needs to be adjusted using the data from RIONED. As the COFOG statistics cannot be changed (this can only be done during a revision of the National accounts data), we decided to do this for the EPE module and thus deviate from the COFOG statistics here.

2.3.3 Data from the Iv3 matrix for GFC allocated to COFOG 05.2

COFOG	Function Iv3 matrix		Total
05.2	722	Sewerage	33
	729	Other waste water	1
	730	Rain water	0
	731	Groundwater	0
	830	Exploitation construction areas	140
	A124	Fixed assets: civil engeneering for construction	1093
	A126	Fixed assets: machines	6
	A129	Fixed assets: other	8
	A213	Stocks: other	23
	A215	Stocks : pre payments	1
	P12	Provisions	37

c) Activities for other pollution abatement

Municipalities are also active in other areas related to pollution abatement, namely soil sanitation, prevention of air pollution (including activities to reduce greenhouse gas emissions), noise reduction etc. In the COFOG data all expenditures related to these activities are allocated to COFOG 05.3 pollution abatement. Data from the Iv3 matrix show that there are two functions that mainly contribute to this COFOG category (table 2.3.4). First, similar to waste management a significant part (15 %) of function 210 'roads, streets and squares' is allocated to COFOG 05.3. Again, we consider this allocation not correct and will therefore exclude this item. Second, there is a general function 723 called 'environmental management' where all 'general' expenditure related to pollution abatement is accounted for. There is unfortunately no information

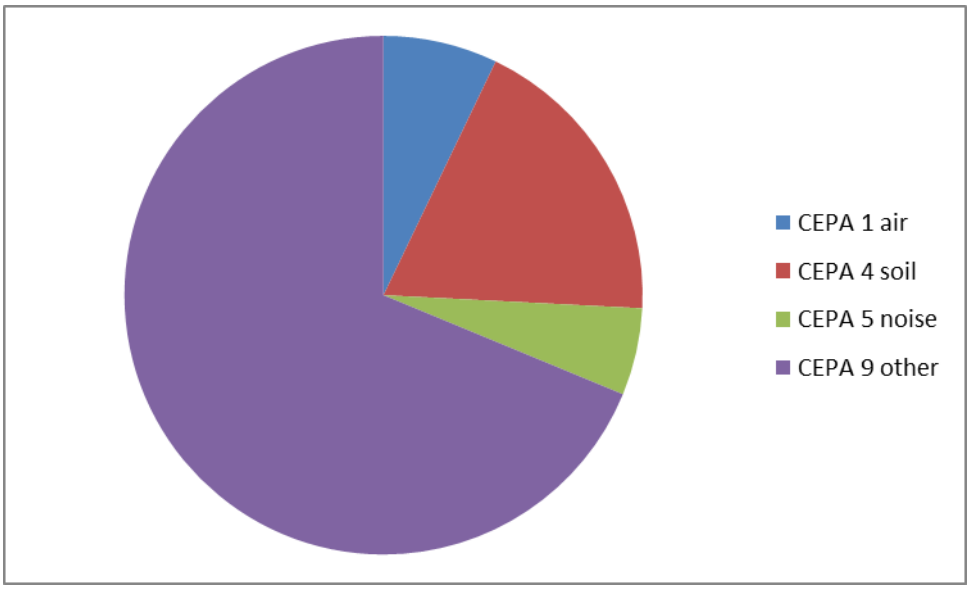
available in the Iv3 matrix to allocate this expenditure to the CEPA or CReMA categories.

2.3.4 Data from the Iv3 matrix allocated to COFOG 05.3

COFOG	Function Iv3 matrix		Fraction of function allocated to COFOG class	D1	P2A	P51c	D29	Total ouput
05.3	210	Roads, streets, squares	0,15	88	220	32	2	342
	723	Environmental management	1,00	267	293	38	1	599
	A126	Fixed assets: machines	0,02	0	1		0	1
	A129	Fixed assets: other	0,02	0	1		0	2
	P12	Provisions	0,05	9	29	1	0	38

Statistics Netherlands has conducted every two years an addition survey for municipalities to obtain more information to allocate expenditure for pollution abatement to CEPA categories . Results show that one third of all expenditures related to pollution abatement is allocated to a specific CEPA class while the remainder is allocated to CEPA 9 (Figure 2.3.5). Apparently municipalities are not able to be more specific on the nature of this expenditure as most of these activities are probably general organisational and regulatory in character and not specifically aimed at one environmental domain. The results from the survey have been used to distribute data for COFOG 05.3 to CEPA categories, where the greater part is thus allocated to CEPA 9. With regard to soil sanitation, municipalities do not have operational costs as they only organise this task and outsource the actual work to specialised private companies (Wolswinkel, 2010). We thus see large gross costs for soil sanitation, but the net costs are much smaller (see also section 2.7).

Figure 2.3.5 Total expenditure for pollution abatement for municipalities (2011): allocation to CEPA according to the survey results.



d) Nature and biodiversity preservation

Municipalities also employ some activities in the area of nature preservation and biodiversity which are classified to COFOG 05.4 Protection of biodiversity and landscape. These expenditures can directly be classified as CEPA 6. Accordingly, if we use the data from the COFOG statistics with the adjustments described above we obtain the following result for municipalities (Table 2.3.6).

2.3.6 Table 1 for municipalities (2011)

million euro	CEPA1	CEPA2	CEPA3	CEPA4	CEPA5	CEPA6	CEPA7	CEPA8	CEPA9	CREMA1
Gross capital formation for the production of EP services [P5 + NP]	4	985	314	11	3	4			42	
Intermediate consumption [P2]	21	656	1532	54	16	23			200	
Compensation of employees [D1]	20	270	397	51	15	13			189	
Intermediate consumption of EP services									0	
Other taxes less subsidies on production [D29-D39]: taxes		5	6			0			1	
Other taxes less subsidies on production [D29-D39]: subsidies		0	0			0			0	
Consumption of fixed capital [K1]		834	233	43		1				
EP output [P1]	40	1765	2169	149	31	37			390	
Market output [P11]		217	2169			6			90	
Non-market output [P13]	40	1548	0	149	31	31			300	
(C) Receipts from by-products										
(D) Subsidies/transfers: current transfers		9	21			3			31	
(D) Subsidies/transfers: capital transfers		19	11			0			5	
Final consumption of EP services [P3]	40	1548	0	149	31	31			520	

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2.4 Intermunicipal corporations

Intermunicipal corporations are associations of municipalities that collaborate in certain areas to perform specific tasks more efficiently. Providing environmental services, particularly waste collection, is one of the areas where certain municipalities operate together. When the main activity is environmental protection services, these corporations are classified as private specialised producers (NACE 38). Their output (environmental protection services) is used by the government, where it recorded as intermediate consumption. However when environmental protection is not the main activity of the corporation, they are classified as part of the government and the output is recorded in that sector / NACE85.

Data on intermunicipal corporations that belong to the government sector are available from the COFOG statistics. These show that activities are mainly related to COFOG 05.2 and COFOG 05.3. Expenditures can thus be allocated to CEPA2 and CEPA9: it is not possible to allocate expenditures for COFOG 05.3 to a more specific CEPA class. For COFOG 05.2 a similar correction has to be made as for municipalities with regard to road works (see section 2.3).

2.4.1 Table 1 for Intermunicipal corporations (2011)

million euro	CEPA1	CEPA2	CEPA3	CEPA4	CEPA5	CEPA6	CEPA7	CEPA8	CEPA9	CREMA1
Gross capital formation for the production of EP services [P5 + NP]		3	26			0			2	
Intermediate consumption [P2]		6	193			3			95	
Compensation of employees [D1]		4	47			0			128	
Intermediate consumption of EP services										
Other taxes less subsidies on production [D29-D39]: taxes		0	1			0			2	
Other taxes less subsidies on production [D29-D39]: subsidies		0	0			0			0	
Consumption of fixed capital [K1]		4	28			0			1	
EP output [P1]		14	269			3			225	
Market output [P11]		2	269			0			126	
Non-market output [P13]		12	0			3			99	
(C) Receipts from by-products		0	0			0			0	
(D) Subsidies/transfers: current transfers		0	0			0			1	
(D) Subsidies/transfers: capital transfers		0	0			0			1	
Final consumption of EP services [P3]		12	0			3			99	

2.5 Water boards

In the Netherlands, water boards (in Dutch waterschappen) have two important tasks. First, they are responsible for managing water barriers, waterways, and water levels. For the Netherlands, this is an essential task as a large part of the country is lying at or below sea level. Second, they are responsible for maintenance of surface water quality through wastewater treatment. They manage wastewater treatment plants where all municipal waste water is treated and cleaned.

The second task is clearly related to the production of environmental protection services, namely CEPA2 (wastewater treatment). The first tasks is related to resource management (CReMA10). It may be argued that this task also has the purpose of water safety, i.e. to protect a large part of the Netherlands against flooding. It is impossible to separate these activities into resource management and protection against flooding and therefore it was decided to classify all these activities as resource management. This is consistent with our treatment with the EGSS where the activities have been classified the same.

Government statistics provide information about the total production of water boards. In the COFOG statistics for water boards a distinction is made between the two main tasks of the water boards, and thus separate information is directly available for the production of environmental protection services (COFOG 05.2) and resource management services (COFOG 04). For 2012, the total production of environmental protection services was equivalent to 1521 million Euro (including output for own use, including market production). Because market output (64 million euro) probably for the most part consists of cleansing services supplied to third parties, it was decided to include this as the production of environmental services. For 2012, the total production of resource management services was equivalent to 1231 million Euro.

2.5.1Table 1 for the water boards (2011)

million euro	CEPA1	CEPA2	CEPA3	CEPA4	CEPA5	CEPA6	CEPA7	CEPA8	CEPA9	CREMA10
Gross capital formation for the production of EP services [P5 + NP]	409									489
Intermediate consumption [P2]	772									545
Compensation of employees [D1]	342									248
Intermediate consumption of EP services										
Other taxes less subsidies on production [D29-D39]: taxes	32									24
Other taxes less subsidies on production [D29-D39]: subsidies	0									0
Consumption of fixed capital [K1]	351									348
EP output [P1]	1497									1165
Market output [P11]	64									41
Non-market output [P13]	1433									1124
(C) Receipts from by-products										
(D) Subsidies/transfers: current transfers										
(D) Subsidies/transfers: capital transfers										
Final consumption of EP services [P3]	1433									1124

2.6 Provinces

The Dutch provinces are active in several areas of environmental protection. First, provinces play an important role in the area of soil sanitation. Furthermore, provinces ensure that all companies in the Netherlands adhere to environmental and safety requirements. The production of renewable energy is also stimulated by provinces. Finally, Provinces are active in the area of nature preservation and landscape management.

Data for protection of biodiversity and landscape (CEPA 6) can be directly derived from the COFOG statistics (COFOG 05.4). Similar as for municipalities, COFOG statistics only provide data for pollution abatement (COFOG 5.3), i.e. CEPA1, CEPA4, CEPA5 and CEPA 9. Here, the source data (the Iv3-matrix for provinces) allows to obtain further details needed to split this COFOG class. The Iv3 matrix for provinces provides the following details:

2.6.1 Link between function in the Iv3 matrix for provinces with CEPA

Function in Iv3 matrix		CEPA
5.0	General environmental policies	9
5.1	Managemnet of surface waters	4
5.2	Management of grondwater and soil	4
5.3	Air pollution	1
5.4	Sound pollution	5
5.5	Environemal allowences and maintanance	9
5.6	soil removals	not environment

Most of these categories can be allocated to a CEPA class. 5.0 General environmental policies and 5.5 Environmental allowances are related to broad environmental protection policies and cannot to allocated to a specific CEPA category and have therefore been categorized as CEPA 9. 5.6 Soil removals (in Dutch ontgrondingen) often have an environmental aspect, but in the COFOG allocation this is not allocated to COFOG 5. We follow this allocation and 5.6 soil removals is thus excluded from environmental protection expenditures.

Provinces are also active in the area of climate change mitigation (renewable energy, energy saving measures etc.). For example, provinces are responsible with proceedings regarding the installment of windmills on land. It is not clear if the related expenditures are included in function 5.5 Environmental allowances and maintenance of the Iv3 matrix and how to identify these specific costs.

One of the areas that provinces are very active is soil sanitation (CEPA 4). However, Provinces do not have operational specialized activities (Wolswinkel, 2010). There are generally two distinct tasks for soil sanitation, namely the employment of the legal tasks around soil sanitation (policy / enforcement) and the commission of (private) companies with soil sanitation for which the Provinces have the total project management. We thus see large gross costs for soil sanitation, but the net costs are much smaller (see also section 2.7).

2.6.2 Table 1 for the Provinces (2011)

million euro	CEPA1	CEPA2	CEPA3	CEPA4	CEPA5	CEPA6	CEPA7	CEPA8	CEPA9	CREMA10
Gross capital formation for the production of EP services [P5 + NP]	0	0	0	43	0	200		1	0	0
										0
Intermediate consumption [P2]	8	0	0	29	2	47		0	96	9
Compensation of employees [D1]	10	0	0	34	2	48		0	114	9
Intermediate consumption of EP services										
Other taxes less subsidies on production [D29-D39]: taxes	0	0	0	0	0	0		0	1	0
Other taxes less subsidies on production [D29-D39]: subsidies	0	0	0	0	0	0		0	0	0
Consumption of fixed capital [K1]	2	0	0	5	0	79		1	18	0
										0
EP output [P1]	20	0	0	68	4	174		1	229	17
Market output [P11]	0	0	0	1	0	19		0	10	0
Non-market output [P13]	19	0	0	68	4	155		1	219	17
										0
(C) Receipts from by-products	0	0	0	0	0	0		0	0	0
(D) Subsidies/transfers: current transfers	2	0	0	7	0	12		0	24	0
(D) Subsidies/transfers: capital transfers	2	0	0	6	19	118		0	19	0
Final consumption of EP services [P3]	19	0	0	68	4	155		1	219	0

2.7 Intermediate consumption of EP services (P2ext)

Intermediate consumption of EP services by specialist producers (P2ext) is an important item in the EPE module as it corrects for double counting in calculation of the total production of EP services available for national purposes (Table 4 in questionnaire). For local governments this is an important item, primarily for municipalities, but also for the other local government organizations. With regard to waste collection and treatment, municipalities can choose to hire private specialist producers (i.e. outsourcing) or perform this activity themselves. Waste collection is often operated by units that directly belong to the municipalities and are thus part of the government sector. Waste treatment activities are usually outsourced, with the exception of one major city (Amsterdam) which operates its own waste treatment plant.

The total EP services that private specialist producers (NACE 37, 38, 39) supply to the government is known from the production statistics, as it is a specific question that these companies have to answer in the production survey. For example, in 2012 1687 million euro EP services was supplied to government by NACE 37, 38 and 39. Accordingly, the total Intermediate consumption of EP services (P2ext) by government is known. It is also known which NACE class, i.e. 37, 38 produces these services for the government sector. We assume that all services supplies by NACE37 are for CEPA2, all

services supplied by NACE38 are for CEPA3 and all services supplied by NACE39 for CEPA4. It is not possible to allocate total intermediate use of EP services to the different local government bodies, but for the EPE module (Table 1 and Table 4) this is not necessary.

2.8 Results: Table 1 for local government

As a final step we can add up the data we obtained from the individual local government organizations to arrive at a complete Table 1 of the EPE questionnaire for local government. In this table we have added the intermediate consumption of EP services, which allows us to calculate net production of EP services (gross production of EP services minus intermediate consumption of EP services).

2.8.1 Table 1 for local government

million euro	CEPA1	CEPA2	CEPA3	CEPA4	CEPA5	CEPA6	CEPA7	CEPA8	CEPA9	CREMA10	TOTAAL EI
Gross capital formation for the production of EP services [P5 + NP]	4	1397	340	54	3	204	0	1	44	489	**2049**
Intermediate consumption (excluding EP services) [P2]	29	1434	1737	83	18	73	0	0	403	554	**3777**
Intermediate consumption of EP services		142	1445	101							**1687**
Compensation of employees [D1]	29	616	456	85	17	61	0	0	442	257	**1707**
Other taxes less subsidies on production [D29-D39]: taxes	0	37	7	0	0	0	0	0	4	24	**47**
Other taxes less subsidies on production [D29-D39]: subsidies	0	0	0	0	0	0	0	0	0	0	**0**
Consumption of fixed capital [K1]	2	1189	263	48	0	80	0	1	20	348	**1603**
EP output [P1]	60	3276	2462	217	35	214	0	1	870	1182	**7134**
Market output [P11]	0	283	2462	1	0	25	0	0	226	41	**2997**
Non-market output [P13]	60	2993	0	216	35	189	0	1	643	1141	**4137**
(C) Receipts from by-products											
(D) Subsidies/transfers: current transfers	2	9	49	7	0	15	0	0	56	0	**139**
(D) Subsidies/transfers: capital transfers	2	19	11	6	19	118	0	0	25	0	**200**
Final consumption of EP services [P3]	60	2993	0	216	35	189	0	1	863	1124	**4357**
Net production	60	3134	1017	116	35	214	0	1	870	1182	**5447**

2.8.2 Net production of EP services by local government allocated to CEA

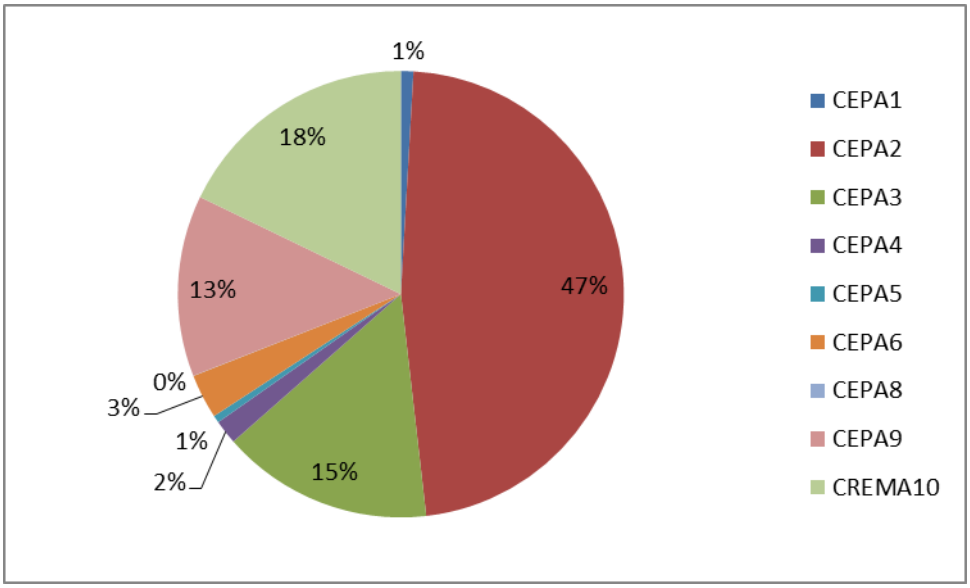


Figure 2.8.2 shows the net production of environmental protection and resource management services by CEPA and CReMA categories. Almost half of the net production is for CEPA2 (waste water management) which reflects that sewerage and waste water treatment are two key responsibilities of local government organizations. Waste management (CEPA3) is smaller, as a lot of these activities are outsourced to the private sector. Production of services related to air pollution (CEPA 1) are very small. This is not of key task for local government. On the other hand, part of these activities are now probable allocated to CEPA 9. With respect to resource management, only water management is relevant for local government (CReMA10). Activities related to renewable energy and energy saving may be relevant fort local government, but as yet these cannot be identified in the source statistics.

2.8.3 Net production of EP services by local government: accounting identities

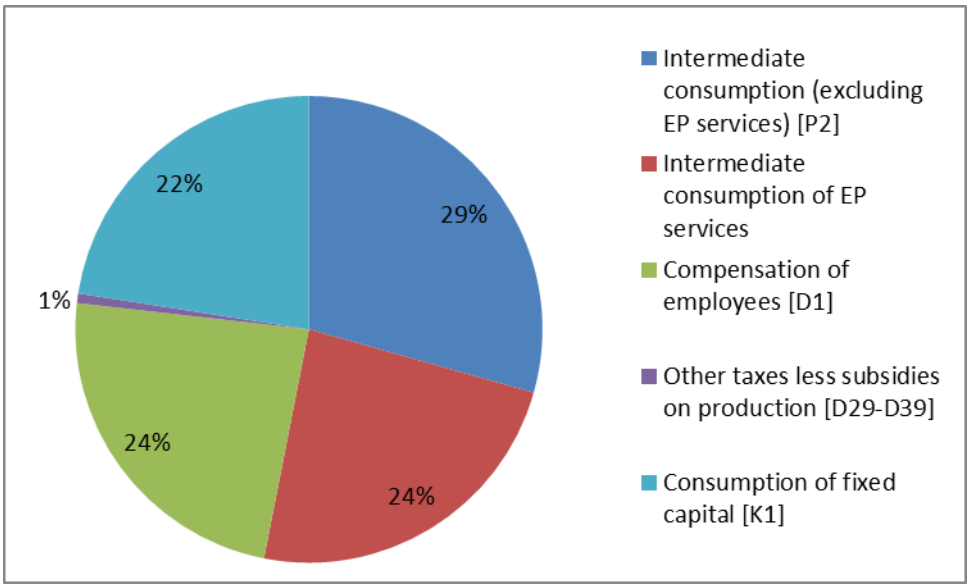
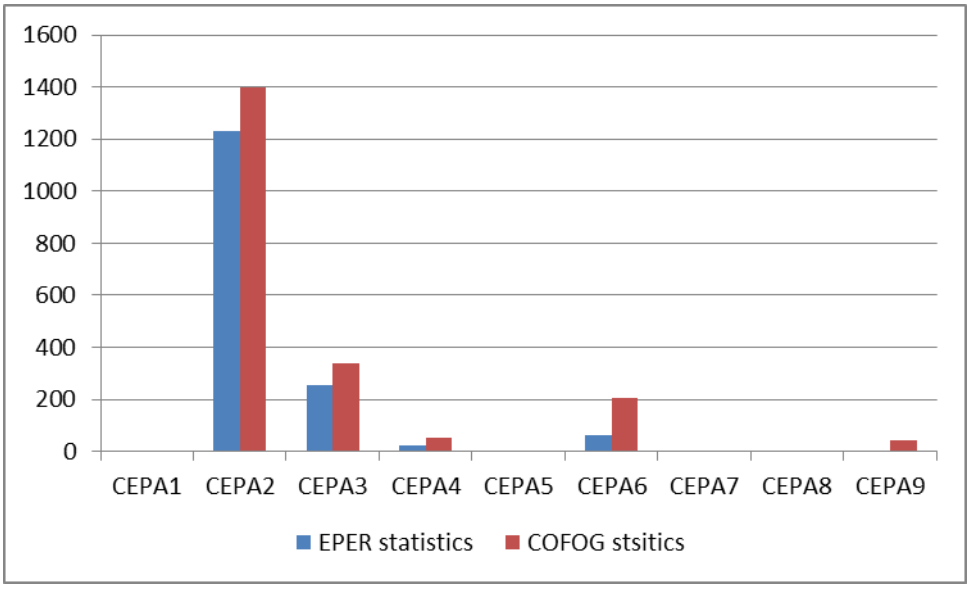


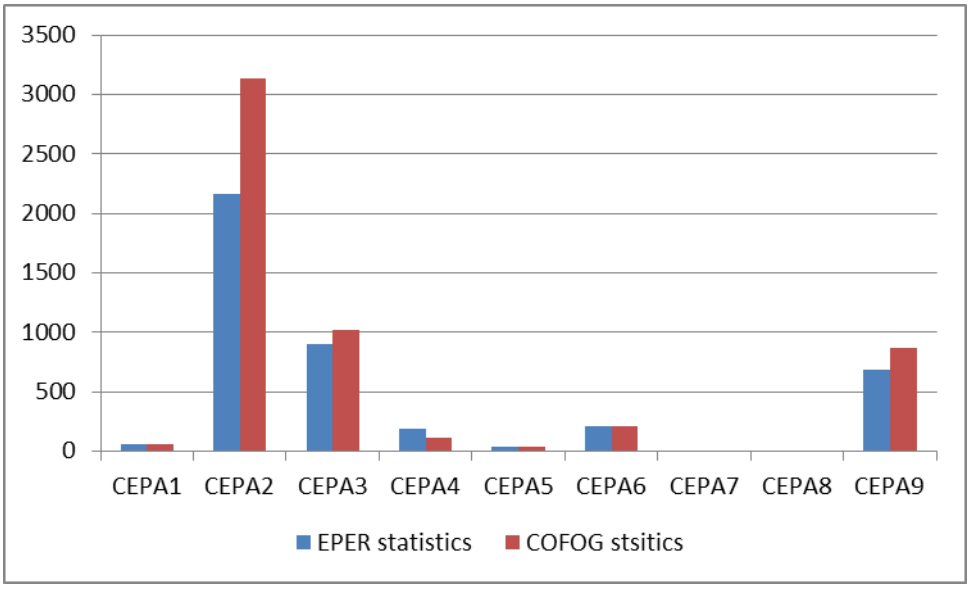
Figure 2.8.3 shows the accounting identities for the total production of EP and RM services by local government. 53 % consists of intermediate consumption, of which almost half is intermediate consumption of EP services produced by the private sector. 22 percent consists of compensation of employees en 24 of consumption of fixed capital.

2.8.4 Comparison for environmental GFC for data from the COFOG statistics and the EPER statistics (2011).



We can also compare these results for net production with the EPER statistics (Figure 2.8.4 and 2.8.5), i.e. the total expenditure recorded there for local government. Gross fixed capital formation is 30 % higher than recorded in the EPER statistics. The GFC for CEPA6 in the EPER includes only the purchase of land, as other GCG is not known. The EPER statistics provide lower figures for all other CEPA categories. In absolute terms the difference for CEPA 2 (water) is large. Production of EPE services is 28 % higher than the EPER statistics. The largest difference is observed for CEPA2 wastewater management. For the other CEPA classes the differences are much smaller.

2.8.5 Comparison for net environmental production for data from the COFOG statistics and the EPER statistics (2011).



3. Environmental protection transfers

Environmental transfers are needed for calculating national EP expenditure and for calculating the financing of EP expenditure. Table 6 of the EPE questionnaire allows for reporting transfers by institutional sectors. It asks for current and capital transfers paid and received by the general government and the rest of the world sectors. In table 3.1.1 an overview is provided of all transfer categories that are required for Table 6. As can be seen, most of these data will be obligatory reporting, only the earmarked taxes paid are on a voluntary basis[2]. In this section we will identify possible data sources for environmental transfers and discuss what data items are available and which are not.

3.1.1 Data required for Table 6 Transfers: voluntary and obligatory data

1	**(Tpg.6) General government: current and capital transfers paid**	*Paid to corporations, households and ROW*	obligatory
2	**(Trgc.6) General Government: current transfers received**	*Received from ROW*	obligatory
3	**(Trgi.6) General Government: investments grants and other capital transfers received**	*Received fromROW*	obligatory
4	**(Trcc.6) Corporations: current transfers received**	*Received from GG and ROW*	obligatory
5	**(Trci.6) Corporations: investments grants and other capital transfers received**	*Received from GG and ROW*	obligatory
6	**(TAXc.6) Corporations: earmarked taxes paid**		volunatry
7	**(Trh.6) Households: transfers received**	*Received from GG and ROW*	obligatory
8	**(TAXh.6) Households: earmarked taxes paid**		volunatry
9	**(Tpw.6) Rest of the World: current and capital transfers paid**	*Paid to GG and other sectors*	obligatory
10	**(Trwc.6) Rest of the World: current transfers received**	*Received from GG*	obligatory
11	**(Trwi.6) Rest of the World: investments grants and other capital transfers received**	*Received from GG*	obligatory

3.1 Data sources for environmental transfers

There are several data sources for transfers from within government statistics and National accounts. Here we will discuss the COFOG statistics, the Central government database and the environmental taxes.

COFOG statistics

The COFOG statistics provide information on transfers to other sectors classified by ESR transaction code and COFOG categories. The COFOG statistics do not always provide direct information on who receives the transaction. Only transactions to other government organisations is provided separately. Sometimes, this can be deduced from the ERS transaction code. For example D3 subsidies per definition go to corporations etc.

[2] In the legal base current en capital transfers do not have to be reported separately, but the total must be reported.

Central government database

Central government database provides the data on transfers by ESR transaction codes but also provides direct information on the receiving sector. As this database was classified by CEPA/CReMA for 2013 (Statistics Netherlands, 2014), this data source can be used to determine transfers related to the central government.

Environmental taxes

Environmental taxes are already part of the legal base. Accordingly, this data source provides information on all environmental taxes, including earmarked taxes, for total taxes paid by corporations and by households.

3.2 Overview of available and missing data

The three data sources described above provide the following data for Table 6.

3.2.1 Data on environmental transfers (Table 6) for 2013 from different data sources

	COFOG statistics		Central government database		Environmental taxes
million euro	Total government	Central government	Central government	Central government	
	EP	EP	EP	RM	
General government					
current and capital transfers paid	119	89	340	1063	
current transfers received					
investments grants and other capital transfers received					
Corporations					
current transfers received	37	22	86	873	
investments grants and other capital transfers received			38	1	
earmarked taxes paid					620
Households					
transfers received			0	30	
earmarked taxes paid					2026
Rest of the world					
current and capital transfers paid					
current transfers received			169	146	
investments grants and other capital transfers received			10	0	

Current and capital transfers paid by general government

The COFOG statistics and the general government database both provide data on current and capital transfers paid by government. As can be seen in table 3.2.1 data from the COFOG statistics for central government is much lower than is observed in the central government database. This is because the detailed analyses of this database revealed many environmental transfers that were not classified as COFOG 05. In addition, many transfers are related to resource management and in particular to renewable energy production. On the other hand, COFOG statistics also provide information on transfers by local government. We conclude that the best data for these transfers is obtained by combining data from the COFOG statistics (local government) and the general government database (central government).

Current transfers received by corporations

The COFOG statistics and the general government database both provide data on current transfers paid by general government to corporations. These transfers are equal to data recorded for D3 subsidies. Again we observe for central government that COFOG data is lower than for the central government database. We conclude that the best data is obtained by combining data from the COFOG statistics (local government) and the general government database (central government). Note that we have no data on current transfers received by corporations from the rest of the world.

Capital transfers received by corporations
These transfers cannot be derived from the COFOG statistics where the total D9 transfers are recorded, but not the receiving sector. Therefore only data from the central government database is available: total capital transfers received by corporations from the central government. So, capital transfers received from local government is not available. Also, no data is available for capital transfers received from the rest of the world.

Transfers received by households
Data is provided by the central government database. Data from the COFOG statistics indicate that current transfers received by households are zero (D6). There may be some capital transfers from local government to households, but these cannot be derived from the COFOG statistics.

Earmarked taxes paid by corporations and households
Data can be directly derived from the environmental tax data.

Current and capital transfers received by the rest of the world
Data on transfers from the central government to the rest of the world can be derived from the central government database. Data on other transfers (from local government, corporations etc.) to the rest of the world is more problematic. A first investigation for data sources is described in Statistics Netherlands 2014.

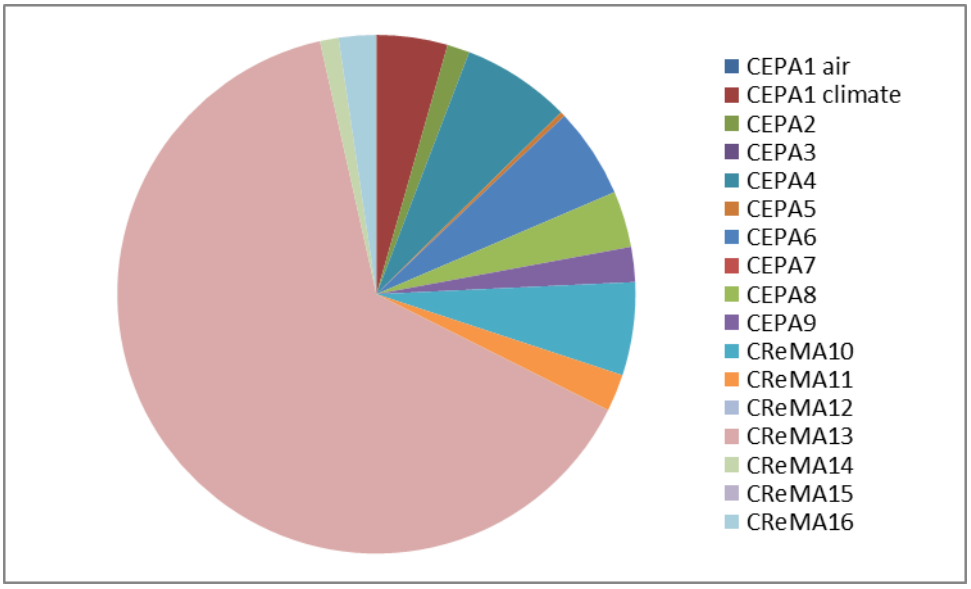
Table 3.2.3 summarises all data that is available for 2013. We conclude that most data on transfers can be derived from COFOG statistics or the central government database. However, data is still lacking for current and capital transfers from the rest of the world. This still has to be investigated further. In addition, it is important to note that most transfers in the Netherland are related to renewable energy and energy saving and thus to CReMA 13. This data is thus excluded in the table below.

3.2.2 Data on environmental protect transfers for 2013

million euro	2013
General government	
current and capital transfers paid	370
current transfers received	
investments grants and other capital transfers received	
Corporations	
current transfers received	101
investments grants and other capital transfers received	38
earmarked taxes paid	620
Households	
transfers received	0
earmarked taxes paid	2026
Rest of the world	
current and capital transfers paid	
current transfers received	169
investments grants and other capital transfers received	10

Data can also be allocated to CEPA and CReMA categories (see figure 3.2.3).

3.2.3 Environmental transfers from central government to corporations and rest of the world



4. Compilation of time series

In this section we will describe how we compiled time series for the EPE module. We will focus on Table 1 (government), Table 2 (corporations: ancillary activities), Table 3 (Corporations: specialist producers) and Table 7 (Total economy) of the EPE questionnaire. Time series for Tables 4 and 5 are also available but not presented here. Data for table 6, which has been discussed in the previous section, is not available for the entire time series and will not be presented here.

4.1 Table 1: Government

Table 1 allows for reporting data on the production of EP services, gross capital formation and acquisition less disposals of non-financial, non-produced assets (such as land) for the production of EP services and final consumption of EP services by general government. Data for this table is provided by data for local government (described in section 2) and central government. For central government the COFOG data have been reclassified for the CEA classification for 2013 (see separate report, Statistics Netherlands 2014). Time series for this reclassification are not available. Therefore here we have only used data from the COFOG statistics (i.e. COFOG 05 Environmental Protection) for central government.

4.1.1 Time series for Table 1 (2011)

million euro	2001	2005	2010	2011	2012	2013
Gross capital formation for the production of EP services [P5 + NP]	1362	1808	2063	2172	2216	2105
Intermediate consumption (excluding EP services) [P2]	2597	3288	4128	4034	3899	3745
Intermediate consumption of EP services	993	1355	1752	1668	1698	1646
Compensation of employees [D1]	1286	1522	1854	1886	1887	1828
Other taxes less subsidies on production [D29-D39]: taxes	64	72	61	53	58	58
Other taxes less subsidies on production [D29-D39]: subsidies	0	0	4	0	0	0
Consumption of fixed capital [K1]	979	1137	1631	1697	1797	1878
EP output [P1]	4924	6020	7677	7670	7642	7510
Market output [P11]	2117	2536	3237	3118	3032	3006
Non-market output [P13]	2808	3484	4440	4552	4609	4503
(C) Receipts from by-products	0	0	0	0	0	0
(D) Subsidies/transfers: current transfers	212	236	391	298	262	161
(D) Subsidies/transfers: capital transfers	432	266	171	240	284	279
Final consumption of EP services [P3]	2808	3484	4399	4503	4567	4459

4.2 Table 2: Corporations ancillary activity

Table 2 allows for reporting data on the output of ancillary EP services and gross capital formation and acquisition less disposals of non-financial, non-produced assets for the production of EP ancillary services by companies.

The current Dutch EPE statistics for businesses provide information on environmental investments and environmental costs (capital costs and current costs) for NACE 06-36.

The data are based on an annual survey. The questionnaire comprises questions on the costs incurred by enterprises in the environment domains waste, wastewater, environmental permits, environmental damage, soil decontamination, environmental research, environmental coordination, investments in new environment equipment installed (end-of-pipe and integrated facilities), and plans for environmental provisions coming into operation in the two years following the survey.

The following accounting items can be directly obtained from the Dutch EPE statistics for businesses:

- (GCF.1) Gross capital formation
- (Oa.2) Output of ancillary activities: internal current expenditure
- (K.2) Consumption of fixed capital

Items Oa.2 plus K.2 provide (Oaa.2) Output of ancillary activities (ESA-compatible output).

Current expenditure for in ancillary activities (Oa.2) consists of the following activities:

- Environmental research (in house activities). These are mainly loans and social contributions that can be allocated to CEPA 8.
- General environmental organisational and regulatory activities. These are mainly loans and social contributions that can be allocated to CEPA 9.
- Current expenditure related to the environmental investments. These are loans and intermediate consumption related to the maintenance of these investments.

The first to items are part of the survey and data is thus available. Data on the third item is more problematic. In the past it was found that companies were not able to report properly on these expenditures. Accordingly, Current expenditure related to the environmental investments have for the last ten years been calculated based on a model. Recently it was decided that data for these correct costs are not reliable and will we excluded from total current costs.

Data is available for CEPA categories 1, 2, 3, 4, 5, 6 and 8. CEPA 1 includes expenditure related to energy saving and renewable energy production. CEPA category 2 includes expenditure related to water saving. However, recently it has become possible to separate these different environmental activities, but no time series are yet available. Table 4.2.2 shows the results for Table 2 for a short time series.

4.2.1 Data for Table 2 (2011)

million euro	CEPA1	CEPA2	CEPA3	CEPA4	CEPA5	CEPA6	CEPA7	CEPA8	CEPA9	TOTAAL I
Gross capital formation for the production of EP services [P5 + NP]	245	69	37	35	16	5	0		0	407
Intermediate consumption (excluding EP services) [P2]	0	0	0	0	0	0	0		0	0
Intermediate consumption of EP services	0	0	0	0	0	0	0		0	0
Compensation of employees [D1]	0	0	0	0	0	0	51		83	134
Other taxes less subsidies on production [D29-D39]: taxes	0	0	0	0	0	0	0		0	0
Other taxes less subsidies on production [D29-D39]: subsidies	0	0	0	0	0	0	0		0	0
Consumption of fixed capital [K1]	272	126	40	39	28	16	0		0	521
EP output [P1]	272	126	40	39	28	16	51		83	655
Market output [P11]	0	0	0	0	0	0	0		0	0
Non-market output [P13]	272	126	40	39	28	16	51		83	655

4.2.2 Time series for Table 2 (total CEPA)

million euro	2001	2005	2010	2011	2012
Gross capital formation for the production of EP services [P5 + NP]	400	333	563	491	454
Intermediate consumption (excluding EP services) [P2]					
Intermediate consumption of EP services					
Compensation of employees [D1]	141	143	126	134	141
Other taxes less subsidies on production [D29-D39]: taxes					
Other taxes less subsidies on production [D29-D39]: subsidies					
Consumption of fixed capital [K1]	531	529	555	556	538
EP output [P1]	672	672	645	558	647
Market output [P11]	0	0	0	0	0
Non-market output [P13]	672	672	645	558	647

Ancillary production of EP services is also to be compiled on NACE level (EPE Tables 2a-2d), i.e. for mining and quarrying, manufacturing (total and detailed), electricity, gas and steam supply and water supply. All these data are in principle available from the Dutch EPE statistics for businesses. However, confidentiality is an important issue at NACE level, which means not all data can be reported.

For the most recent year (2013) data is (at this moment, i.e., December 2014) only available for gross fixed capital formation.

4.3 Table 3: Corporations specialist producers

In 2014 the Dutch National Accounts have been revised according to the new SNA2008 regulations. Accordingly, also the data for specialist producers that can be directly obtained from the production accounts have been revised. The time series that are available are still preliminary.

Data for Table 3, Corporations as secondary and specialist producers of market EP services, is directly obtained from the production accounts of the National accounts. In the Dutch National accounts, there is one industry group for NACE 37-39, excluding NACE 38.3 (recycling) for which there is a separate industry group. Accordingly, all relevant accounting items can be obtained for this industry group.

As there is only one industry group for environmental specialist producers, this allows no direct allocation to CEPA categories. Information from the production statistics is

used for this allocation. In the production statistics, data is available for NACE 37, 38.1, 38.2, 38.3 and 39 for total output, intermediate consumption, costs for wages, and depreciation. These distributions were used to allocate the total NA accounting items to CEPA.

Secondary production of EP services can be determined from the National accounts supply and use tables by summing the total output of product group 'environmental services by private companies' that is produced outside industry group NACE 37-39 (excluding 38.3). In fact recycling (NACE 38.3) is the main producer of environmental services as a secondary activity. In addition, some environmental services are produced by 'other manufacturing' (NACE 32), water companies (NACE 36), construction (NACE 41) and wholesale (NACE 46). All secondary production is assumed to be related to CEPA 3 (waste) except for the secondary production of water companies (CEPA 2). The secondary production may also be related to soil sanitation, but at present we cannot distinguish here between CEPA3 and CEPA4 (Wolswinkel, 2010).

Gross fixed capital formation for specialist producers is obtained from total gross fixed capital formation as recorded in the National accounts. Again, more detailed information from the investment statistics was used to allocate the investments to CEPA categories. No direct data is available for gross fixed capital formation for secondary production.

4.3.1 Table 3: time series for total EP

million euro	2001	2005	2010	2011	2012	2013
Gross capital formation for the production of EP services [P5 + NP]	48	83	789	1051	510	508
Intermediate consumption (excluding EP services) [P2]	2591	2785	3208	3418	3473	3447
Intermediate consumption of EP services	1290	1393	1559	1684	1732	1685
Compensation of employees [D1]	914	1040	1224	1254	1312	1278
Other taxes less subsidies on production [D29-D39]: taxes	26	32	33	33	29	30
Other taxes less subsidies on production [D29-D39]: subsidies	-63	-69	-80	-60	-46	-39
Consumption of fixed capital [K1]	499	486	432	414	403	398
Net operating surplus	103	145	427	414	324	247
EP market output from main activities [P11]	3230	3494	4171	4266	4296	4213
EP market output from secondary activities [P11]	509	581	859	1043	1058	949
Total EP market output of corporations [P11]	3739	4075	5030	5309	5354	5162
(C) Receipts from by-products	840	925	1073	1207	1199	1148

million euro	CEPA1	CEPA2	CEPA3	CEPA4	CEPA5	CEPA6	CEPA7	CEPA8	CEPA9	TOTAAL I
Gross capital formation for the production of EP services [P5 + NP]		197	833	21						1051
										0
Intermediate consumption (excluding EP services) [P2]		404	2705	310						3418
Intermediate consumption of EP services		199	1333	153						1684
Compensation of employees [D1]		201	951	102						1254
Other taxes less subsidies on production [D29-D39]: taxes		4	27	3						33
Other taxes less subsidies on production [D29-D39]: subsidies		-7	-48	-5						-60
Consumption of fixed capital [K1]		23	379	12						414
Net operating surplus		23	382	9						414
EP market output from main activities [P11]		649	3187	430						4266
EP market output from secondary activities [P11]		50	993	0						1043
Total EP market output of corporations [P11]		699	4180	430						5309
(C) Receipts from by-products		0	1207	0						1207

4.4 Table 7: Total economy

Table 7 sums up the data filled in the mandatory tables. This is filled in automatically using data from the other tables from the questionnaire (Table 1-6). Two versions of table 7 are currently available: table 7.1 sums up total economy by CEPA and table 7.2 sums up total economy by sector (for the total of all environmental domains). Below data is shown for Table 7 total EP time series, and tables 7.1 and table 7.2 for 2011.

4.4.1 Table 7 (total EP) time series

	2001	2005	2010	2011	2012	2013
EP output	9335	10767	13352	13537	13643	13319
Market output	5833	6572	8267	8427	8386	8168
Ancillary output	672	672	645	558	647	647
Non-market output	2831	3523	4440	4552	4609	4503
Intermediate consumption of EP services by specialist producers	2283	2748	3311	3352	3430	3331
Imports of EP services	1	1	21	21	20	23
Exports of EP services	2	8	87	92	85	94
VAT and other taxes less subsidies on EP services	942	944	1089	1091	1043	1029
EP output at purchasers' prices available for national uses	7994	8955	11064	11206	11191	10946
Gross capital formation for the production of EP services	1810	2224	3415	3714	3223	3143
Final consumption of EP services government	2808	3484	4399	4503	4567	4459
Final consumption of EP services Households	1092	1374	1572	1583	1591	1420
Intermediate consumption of EP services	4094	4098	5093	5119	5032	5066

4.4.2 Table7.1 total economy by CEPA category (2011)

million euro	**CEPA2**	**CEPA3**	**CEPA6**	**CEPAother**	**TOTAL EP**
EP output	3994	6645	409	2489	13537
Market output	982	6642	85	718	8427
Ancillary output	0	0	11	547	558
Non-market output	3012	3	313	1224	4552
Intermediate consumption of EP services by specialist producers	332	2767	0	253	3352
Imports of EP services	0	21	0	0	21
Exports of EP services	0	92	0	0	92
VAT and other taxes less subsidies on EP services	187	752	16	136	1091
EP output at purchasers' prices available for national uses	3848	4559	425	2373	11206
Gross capital formation for the production of EP services	1638	1193	212	670	3714
Final consumption of EP services government	3012	3	313	1175	4503
Final consumption of EP services Households	0	1583	0	0	1583
Intermediate consumption of EP services	836	2973	112	1198	5119

4.4.3 Table 7.2 Total economy by sector (2011)

million euro	General Government	Corporations	Households	Rest of the World	Total EP
EP output	7670	5867			13537
Market output	3118	5309			8427
Ancillary output		558			558
Non-market output	4552	0			4552
Intermediate consumption of EP services by specialist producers	1668	1684			3352
Imports of EP services					21
Exports of EP services					92
VAT and other taxes less subsidies on EP services					1091
EP output at purchasers' prices available for national uses					11206
Gross capital formation for the production of EP services	2172	1542			3714
Final consumption of EP services government	4503				4503
Final consumption of EP services Households			1583		1583
Intermediate consumption of EP services		5119			5119

5. Conclusions and recommendations

Local government

The main conclusion is that COFOG data provide a good basis to compile the data needed to fill Table 1 of the EPE questionnaire for local government. As the data is available on COFOG 2 digit and for the main ESR codes it is relatively easy to obtain all data that is needed. However, in a few cases we found data the allocation to COFOG needs to be adjusted. In addition, we found that sometimes extra data sources are needed to make a good allocation for all relevant CEPA categories. Below we summarize the main findings and we provide some recommendations for further improvement.

Municipalities

- The COFOG data needs to be adjusted to correct for the large contribution of activities for roads (cleaning of the streets)
- The COFOG data needs adjustment with regard to gross fixed capital formation for CEPA2 (sewerage) based on data from RIONED.
- Additional information is needed to allocate activities related to pollution abatement to CEPA categories. The current survey to municipalities may be amended to focus more on this category and also on expenditure related to energy saving and renewable energy which are now (possibly) not recorded under pollution abatement.

Intermunicipal corporations

- The COFOG data needs to be adjusted to correct for the large contribution of activities for roads (cleaning of the streets).

Provinces

- Provinces are also active in the area of renewable energy and energy saving. The source data does not allow to identify these expenditures. This could be further investigated.

Water boards

- The allocation key used to allocate the data to COFOG 5 and COFOG 4 (resource management) is key the quality of the data. It is recommended to investigate further with the staff of the government statistics how this key is made and if the quality of the date needs further improvement.
- Now all services related to water by water boards is allocated to CReMA10 whereas some of this expenditures maybe related to water safety. This should be further investigated.

Environmental transfers

Most data on environmental protection transfers needed to fill Table 6 of the questionnaire can be derived from COFOG and / or government statistics. However, data is still lacking for current and capital transfers from the rest of the world to government (see also statistics Netherlands, 2014). This still has to be investigated in more detail.

Time series

Time series can be constructed back to at least 2001. We found that, generally, for the Netherlands it is relatively easy to fill in the obligatory tables of the EPE module using data that is already available from the National accounts, COFOG statistics, government statistics and the EPE statistics for businesses. However, there still remain some issues with regard to the compilation of time series.

- For Central government we have classified the central government database according to CEPA CReMA (see Statistics Netherlands 2014). This provides much better data than only the COFOG 05 data. However, this data is now available for one year. Probably it will not be possible to make time series for this new data source, but this needs further investigation.
- Other specialist producers: Outside the scope of the traditional environmental services (NACE37-39), there are other environmental protection services produced by corporations. These are environmental consultancy and engineering, and environmental inspection services. In addition, there are environmental non-profit organisations (which belong to the government sector) that produce environmental services. It was found that together, these other specialist producers produce a significant amount of environmental output (see also Statistics Netherlands, 2013). These activities have not yet been included in the time series.
- Ancillary activities outside NACE 06-36: Ancillary activities also take place for example in agriculture and in the transport sector. For the Netherlands data is available but this has not yet been integrated in the time series. Also, there are companies / organisations that employ activities related to landscape management, which have not yet been incorporated into the time series.
- For Transfers (Table 6) no time series are yet available. It has to be investigated if it is possible to compile time series.
- Here, we have constructed time series for Environmental protection activities (EP). Most data now is also available to construct time series for resource management (RM) activities, although some data here may still be lacking.

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