Country fact sheet

Municipal waste management

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The Netherlands

October 2016

European Environment Agency
European Topic Centre on Waste and
Materials in a Green Economy

Context

This country profile was prepared within the EEA's work on municipal waste, resulting in the following outcomes:

- 32 country profiles (this document) – The country profiles were originally produced by the ETC/SCP and were published by the EEA in 2013. The ETC/WMGE updated them for the EEA under its 2015 and 2016 work programme.

- An EEA briefing on Municipal waste management across European countries

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Related country profiles

Country information on waste prevention programmes can be found at:
http://www.eea.europa.eu/publications/waste-prevention-in-europe-2015

For country profiles on material resource efficiency policies, please visit:
http://www.eea.europa.eu/publications/more-from-less/

Contents

Highlights

- The Netherlands is a frontrunner in recycling in Europe, having managed over the last years to divert more than half of the municipal solid waste (MSW) generated to recycling. Out of the 8.9 million tonnes of MSW generated in 2014, 4.5 million tonnes were recycled, 4.2 million tonnes were incinerated and only 128 000 tonnes ended up in landfills.
- A landfill ban covering 35 waste categories and a landfill tax, both introduced in 1995, considerably reduced the amounts of MSW landfilled. The subsequent increases in the landfill tax in 2002–2010 made the tax in the Netherlands the highest in Europe in 2010. In 2012, the tax was repealed due to the very low level of landfilling.
- The first National Waste Management Plan (NWMP) set the framework of future waste management in the Netherlands and introduced the control of waste policies under a national perspective.
- The second NWMP introduced a target to increase the recycling of household waste to 60 % by 2015.
- The third NWMP introduced a new target for the collection of household waste in 2020. At least 75% should be separately collected for recycling, with a maximum of 100 kg residual household waste generated per person per year.

1 Introduction

1.1 Objective

Based on historical municipal solid waste (MSW) data for the Netherlands, and EU targets linked to MSW in the Waste Framework Directive (WFD), the Landfill Directive and the Packaging Directive, the analysis undertaken includes:

- the historical MSW management performance based on a set of indicators;
- uncertainties that might explain differences in country performance, which may relate more to variations in reporting methodology than differences in management performance;
- indicators relating to the country's most important initiatives taken to improve the management of MSW; and
- possible future trends.

2 The Netherlands' municipal solid waste management performance

The Netherlands has been far ahead of EU policies in waste management and has more or less influenced the European policies that have been formulated in recent years (LAP, 2009). In the past decades, the ever increasing level of material consumption and the significant lack of physical space, together with environmental deterioration of the land, forced the Dutch government to take measures to reduce the landfilling of waste. Dutch waste management is influenced mainly by the so-called Lansnik's ladder, named after the proposer of the motion passed unanimously by the Dutch Lower House in 1979 (NL, 2008), which was incorporated into Dutch legislation in 1994 and has been introduced in the European Waste Framework Directive as the waste hierarchy. The basic principles of the hierarchy follow the lines of avoidance of waste as much as possible, recovery of the valuable raw materials, generation of energy by incinerating the mixed municipal (residual) waste and only then landfilling what is left over, but in an environmentally sound way (NL, 2008).

In 1997 there was a decision to centralise responsibility for waste management, passing the responsibility from the provincial level to central government. This change came into force with the amendment to the Environmental Management Act in 2002.

The Environmental Management Act stipulates that the Ministry for Housing, Spatial Planning and the Environment must draw up a Waste Management Plan every six years (ETC/SCP, 2009).

The first National Waste Management Plan (NWMP) 2002–2012 (LAP, 2003) came into force at the beginning of 2003 and was reviewed in 2009, resulting in the second NWMP (LAP, 2009). This Plan covers the period 2009–2015, with a view to 2021. The third National Waste Management Plan is currently under preparation and should take effect in 2017 (Rijkswaterstaat Environment, 2016).

Obligations at the provincial level mostly concern the licensing and monitoring of waste treatment facilities, including incineration and landfilling, together with the regulation of waste prevention in individual operating licenses. The provinces are also financially, administratively and organisationally responsible for the environmental rehabilitation of closed landfill sites (ETC/SCP, 2009).

Municipalities are responsible for the collection of household waste in their own territory. Authorities are obliged to collect organic household waste separately, door-to-door, though there may be

exceptions in specific circumstances. Local authority by-laws mainly include rules on the disposal of household waste, for example, which components have to be kept separate, the frequency of waste collection and the agencies carrying out collection (ETC/SCP, 2009).

The formal waste collection system covers all households in the Netherlands, and the collection of mixed municipal household waste is carried out through door-to-door collection. The door-to-door system usually also includes the collection of a range of recyclables such as paper/cardboard, plastic bottles, textiles, food and garden waste which are collected either source separated or comingled. Large proportions of these recyclables are also collected at civic amenity or bring sites, as well as glass and metal packaging waste. Civic amenity sites, there are more than 400 sites nationwide, are typically focused on collecting bulky waste such as furniture, and waste electrical and electronic waste (WEEE), even though other typical recyclables are accepted as well. Commercial waste is collected through the same systems as household waste; however, most waste from offices and services is collected by commercial collectors. (Eurostat, 2015b; Gibbs *et al.*, 2014)

Collection of household waste is funded by local taxation and from fees paid by producer-responsibility organisations for packaging waste. Around 41 % of municipalities by 2015 had introduced pay-as-you-throw (PAYT) schemes. There is a deposit refund system in place for single use and refillable glass and polyethylene terephthalate (PET) containers for soft drinks and water; abolition of the scheme has, however, been planned. (Gibbs *et al.*, 2014)

Recyclables collected comingled are taken for subsequent sorting at material recycling facilities (MRF). Bio-waste is treated in anaerobic digestion (AD) and in-vessel composting facilities. The mechanical biological treatment (MBT) capacity with attached AD facilities is around 400 000 tonnes per year. There is considerable overcapacity for incineration, a total of 7.6 million tonnes per year is available. Landfilling has been to a large extent eliminated in the Netherlands. (Gibbs *et al.*, 2014)

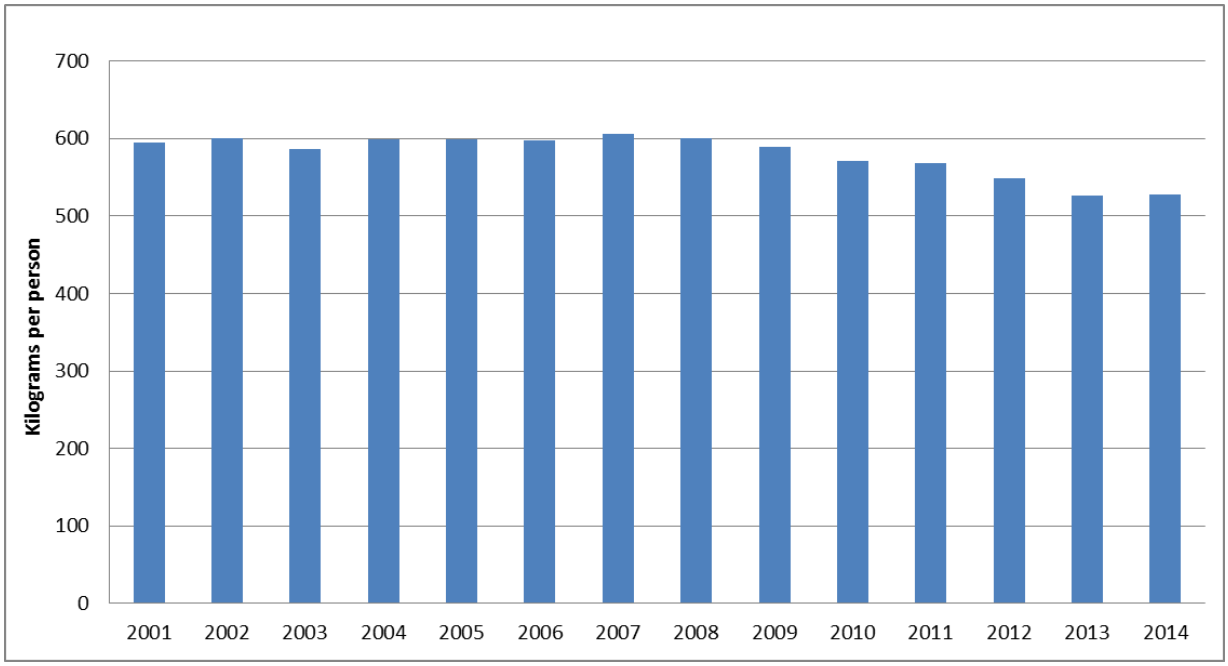
Since 2008 all municipal waste generated is reportedly treated. According to the reporting to Eurostat, 82–86 % of the generated waste was treated in the period 2001–2007 (Eurostat, 2016). The country specific notes on municipal waste data (Eurostat, 2015b) explain the difference between waste generation and treatment by waste undergoing preliminary operations like sorting.

2.1 Municipal solid waste indicators

The following indicators illustrate the development of the Dutch MSW management in 2001–2014. All percentage figures have been calculated by relating the waste managed to the generated amount – rather than the treated amount.

Figure 2.0 shows the development of MSW generation per person in the Netherlands for 2001–2014. The amount generated has remained very stable up to 2008 at around 600 kilograms per person yearly. The lower MSW generation in 2003 was due to a hot and dry summer resulting in a smaller amount of organic waste (Eurostat, 2015b). In 2009 MSW generation per person started to decrease and dropped to 527 kilograms per person in 2014.

Figure 2.0 The Netherlands, municipal sold waste generation per person, 2001–2014



Source: Eurostat, 2016

The Netherlands is a frontrunner in recycling in Europe, having managed to divert more than half of the MSW generated to recycling in 2014. Of the 8.9 million tonnes of MSW generated in 2014, 4.5 million tonnes were recycled, 4.2 million tonnes were incinerated and only 128 000 tonnes ended up in landfills.

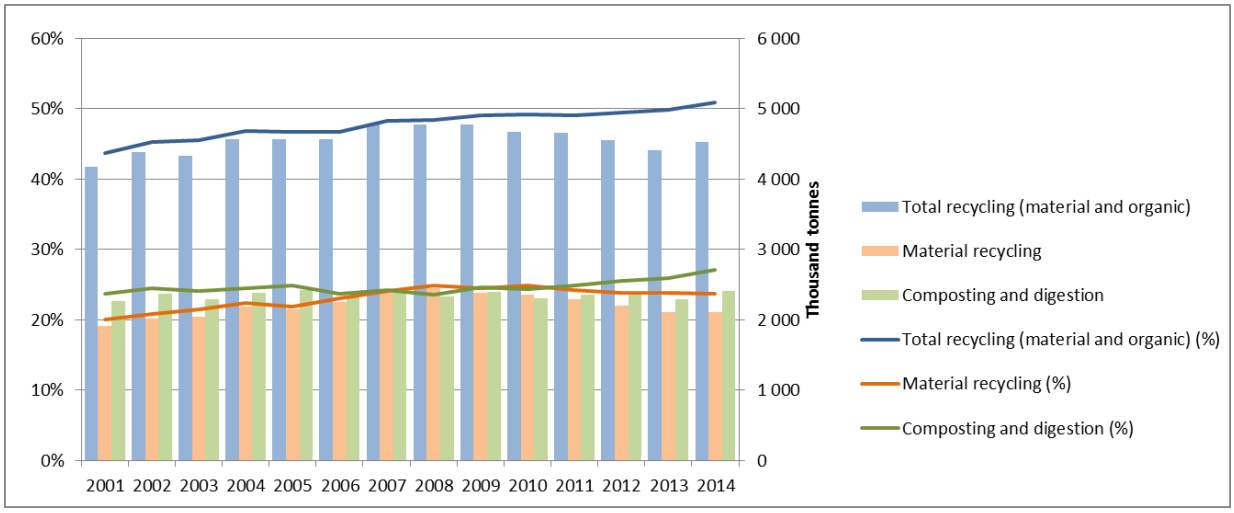
2.1.1 The recycling of municipal solid waste, 2001–2014

Figure 2.1 shows the development of recycling of MSW in the Netherlands related to total recycling, material recycling and composting and other biological treatment.

In Figure 2.1 it can be observed that total recycling of MSW in the Netherlands was already at a very high level, 44 %, in 2001. Since then, the level of recycling increased slowly but steadily, reaching 51 % of the MSW generated in 2014, an overall increase of 6 percentage points. This increase is more attributed to material recycling, which rose steadily in 2001–2008 after which it has more or less stagnated. Organic recycling remained at around 24 % until 2011, followed by a slight increase in 2012–2014.

In general, MSW recycling evolved positively throughout 2001–2014 in the Netherlands, making the Dutch waste management a fine example of a successful recycling practice.

Figure 2.1 The Netherlands, recycling of municipal solid waste, 2001–2014, per cent and tonnes



Source: Eurostat, 2016

Table 2.1 The Netherlands, composition of collected household waste[1] 2001–2013, '000 tonnes

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Mixed household waste	3 958	3 938	3 900	3 933	3 958	3 961	3 964	3 947	3 878	3 751	3 734	3 663	3 517
Bulky household waste	793	754	707	698	716	716	683	686	640	615	600	536	483
Renovation (building) waste	98	95	107	108	110	105	108	98	88	75	79	67	62
Organic, kitchen and garden waste	1 404	1 406	1 340	1 407	1 362	1 296	1 315	1 289	1 302	1 255	1 297	1 303	1 255
Paper and cardboard	1 013	1 006	982	1 027	1 045	1 081	1 106	1 124	1 077	1 065	1 044	981	924
Glass	335	342	341	342	338	341	344	349	345	350	349	348	345
Textiles	50	49	51	54	60	62	65	69	65	68	66	65	65
Household hazardous waste	21	21	21	21	21	21	21	21	21	21	21	20	19
Metal packaging	2	2	3	3	2	2	2	2	2	2	2	2	2
Cartons for	1	1	2	2	2	2	2	2	3	3	3	3	4

[1] Household waste refers to waste from households collected by or on behalf of municipalities. Waste from small shops, etc. is sometimes collected together with household waste, hence a (small) part of household waste does not originate from households (Statistics Netherlands, 2015).

beverages													
Plastic packaging	2	3	4	5	5	6	6	8	26	83	98	106	116
Other plastics	.	.	.	.	.	.	4	5	6	7	8	10	13
Carpeting	4	7	9	12	13	13	11	13	11	11	10	9	9
WEEE	53	57	61	67	71	70	74	81	82	84	86	81	75
Bulky garden waste	353	396	377	397	406	407	452	426	444	447	448	461	441
Furniture	14	24	28	38	35	40	39	38	38	38	40	40	47
Window and sheet glass	7	8	8	9	9	9	10	9	9	9	9	9	9
Scrap metals	75	76	77	77	77	81	83	82	83	74	70	64	59
Wood	246	273	283	310	318	341	349	342	326	323	334	318	308
Rubble	437	448	444	455	448	442	459	432	429	402	427	389	375
Waste containing asbestos	17	17	17	15	14	13	14	12	11	11	12	10	10
Used tyres	2	2	3	3	2	3	2	2	2	3	3	3	3
Clean soil	90	103	111	110	109	111	111	105	107	97	105	97	89
Roof covering materials	5	4	7	10	12	11	12	10	11	11	12	11	10

Source: Statistics Netherlands, 2015.
Note: 2013: revised provisional data

As shown in Table 2.1 organic kitchen and garden waste, paper and cardboard, bulky household and bulky garden waste represent the largest quantities of household waste types collected in the Netherlands. It is noteworthy that the amount of collected plastic packaging waste has increased considerably since 2009, following a 2007 agreement between the Ministry of the Environment and the packaging industry about targets for collection and recycling of plastic packaging (Ministry of the Environment, 2007).

The EU's 2008 WFD includes a target for certain fractions of MSW: 'by 2020, the preparing for re-use and the recycling of waste materials such as at least paper, metal, plastic and glass from households and possibly from other origins as far as these waste streams are similar to waste from households shall be increased to a minimum of overall 50 % by weight'. EU Member States may choose between four different methodologies to calculate compliance with the target[2]. The Netherlands has chosen method 2. The recycling rates shown in this paper correspond to method 4, the only method for which time series data exist. The Netherlands has already achieved the target of 50 % recycling according to Eurostat data (method 4). In 2015, the European Commission proposed new targets for municipal waste of 60 % recycling and preparing for reuse by 2025 and 65 % by 2030, based on only one calculation method, and with the option of time derogations for some countries (EC, 2015).

[2] Commission Decision 2011/753/EU allows countries to choose between four different calculation methods to report compliance with this target. Member States have the option of considering four alternative waste streams and fractions:

1. paper, metal, plastic and glass household waste;
2. paper, metal, plastic, glass household waste and other single types of household waste or of similar waste from other origins;
3. household waste;
4. municipal waste (the method used in this document).

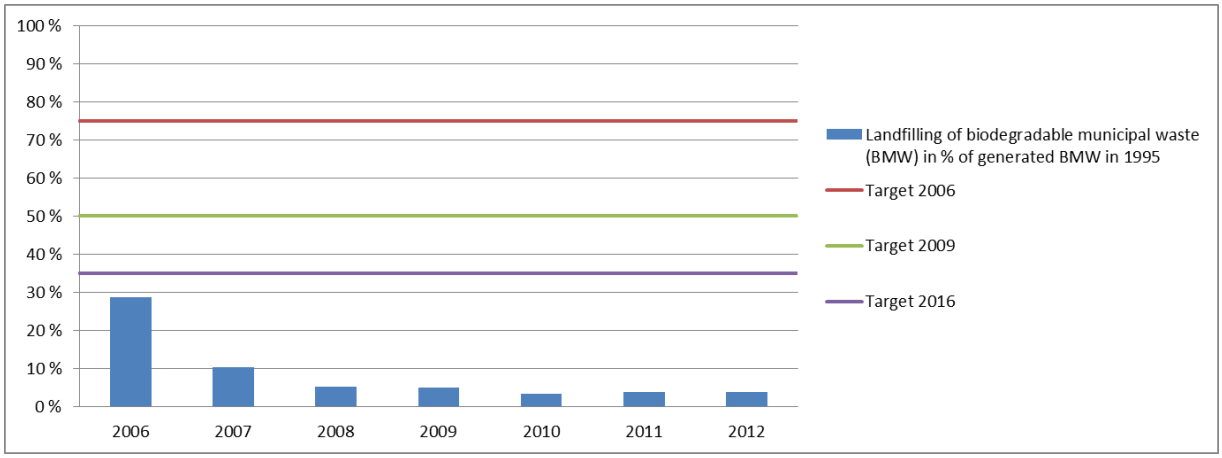
2.1.2 Landfill of biodegradable municipal waste

According to the EU Landfill Directive Member States have to reduce the amount of biodegradable municipal waste (BMW) landfilled with a specific percentage by 2006, 2009 and 2016. The targets are related to the amount of BMW generated in 1995. The Netherlands generated 2 406 000 tonnes of BMW in that year.

In 1995, the Dutch government issued a waste decree that introduced a landfill ban for 35 waste categories (ETC/SCP, 2009) including all combustible and biodegradable waste. As a result, no BMW would under those circumstances go to landfill. Nevertheless, the decree enables the provincial authorities to grant an exemption to landfill operators, for example, if there were a temporary shortage of incineration capacity. However, the provincial authority is only allowed to do grant exemptions if it has obtained a statement from the national environmental authorities indicating that no other processing option other than landfill is available for that particular waste in the Netherlands at that time (EEA, 2002).

The Netherlands has reported the landfilled amount of BMW to the European Commission for the years 2006–2012 (EC, forthcoming). Figure 2.2 shows that in 2006 the Netherlands had already reached the targets of the Landfill Directive for 2006, 2009 and 2016 and that no further effort was required. However, the figure also shows that the landfilling of BMW continued to decrease sharply year by year after 2006, the share related to BMW generation in 1995 being reduced by 19 percentage points between 2006 and 2007 and by an additional 6 percentage points between 2007 and 2010. In 2010-2012 the amount of BWM landfilled practically remained the same.

Figure 2.2 The Netherlands, landfill of biodegradable municipal waste 2006–2012, % of biodegradable municipal waste generated in 1995

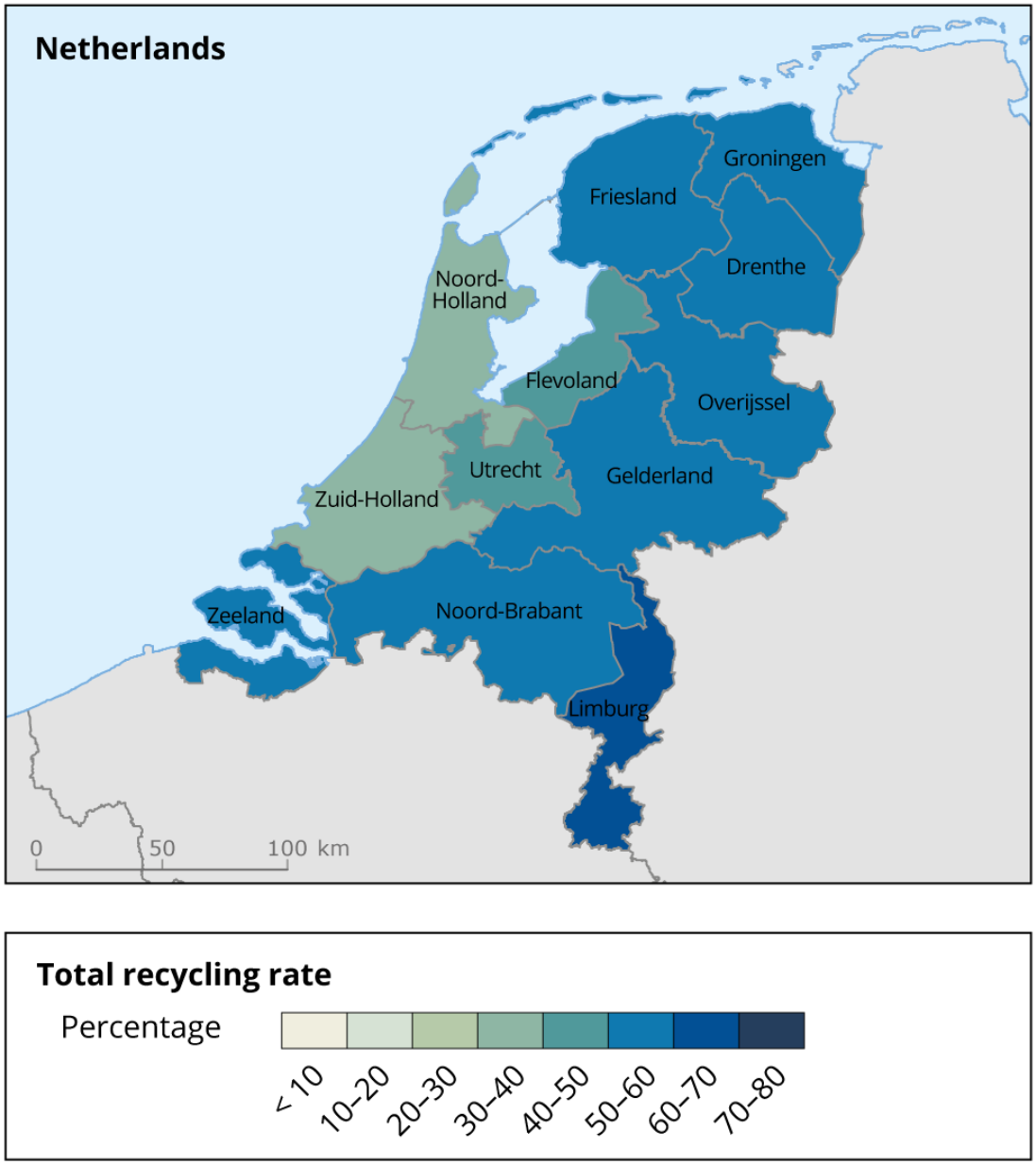


Source: EC, forthcoming.

2.1.3 Regional differences of municipal solid waste recycling, 2001–2013

The Netherlands has reported regional recycling data of MSW to Eurostat. Map 2.1 shows regional differences in the MSW recycling for 2013, the latest year for which regional data are available, related to total recycling.

Map 2.1 The Netherlands, regional differences in municipal solid waste recycling, 2013



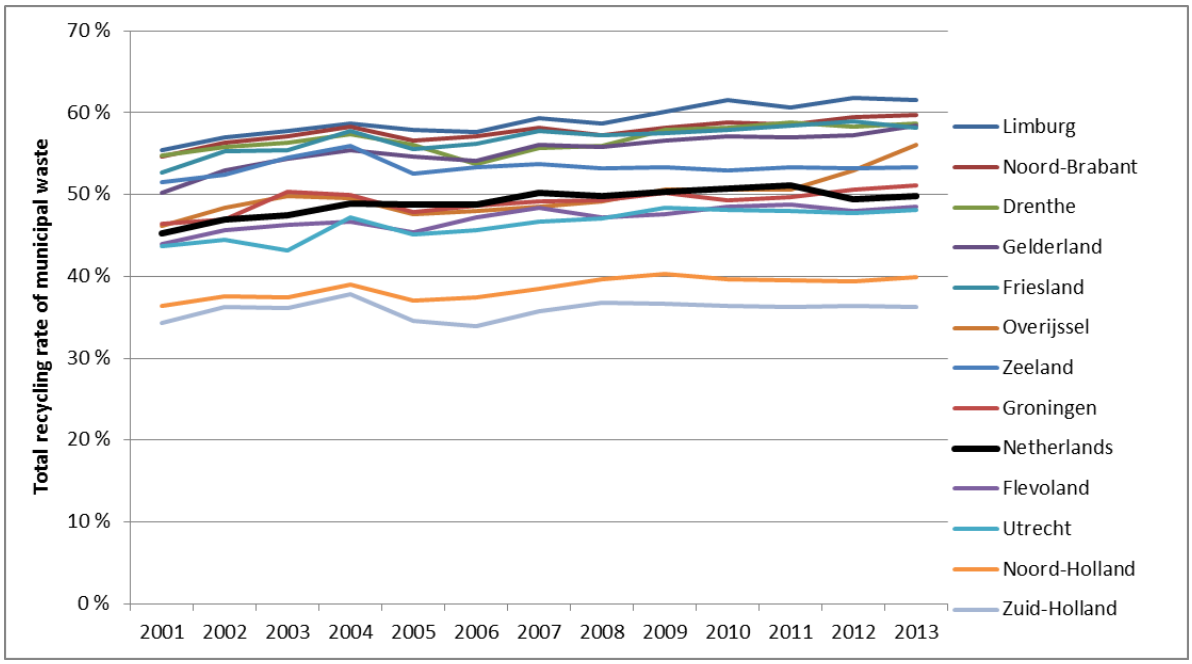
Source: Eurostat, 2015a.

The population of the Dutch regions ranges from 380 000 in Zeeland to 3.6 million in Zuid Holland, representing 2 % and 21 % of the total population of 16.8 million respectively. Zuid Holland, which includes major cities such as The Hague and Rotterdam, is the region with the highest absolute amount of generated MSW – 1.8 million tonnes or around 20 % of the total Dutch MSW generation in 2013.

Figure 2.3 shows regional differences in the development of MSW recycling from 2001 to 2013 related to total recycling – the sum of material and organic recycling – based on data reported to Eurostat.

Recycling rates are increasing steadily in most Dutch regions (Figure 2.3). There is very little variation in the levels of total recycling throughout the years but there are remarkable differences between regions. For example, Limburg reached a recycling level as high as 61 % of MSW in 2013, while the recycling rate reached in South Holland in the same year was just 36 %.

Figure 2.3 The Netherlands, regional differences in recycling of municipal solid waste, 2001–2013

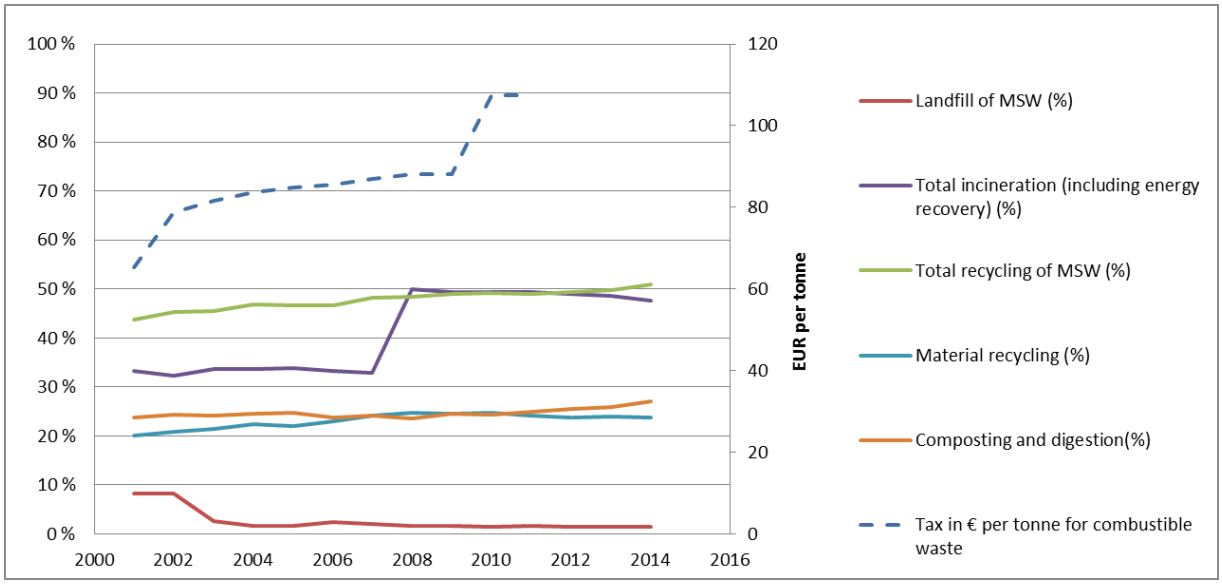


Source: Eurostat, 2015a.

2.1.4 Recycling and landfill taxes

The Netherlands introduced a landfill tax in 1995 in an effort to reduce waste generation by making waste disposal more expensive and at the same time promoting recycling and incineration as more attractive waste management options. In 2000, two different levels of taxes were introduced. Combustible MSW was always charged with a high landfill tax, while waste that is assumed to be non-combustible with no other favourable recovery option charged at a lower rate (ETC/SCP 2012). Figure 2.4 shows the development of the high landfill tax together with developments in different MSW waste management paths. The low landfill tax remained at EUR 13–16 per tonne, with only minor fluctuations over the years (ETC/SCP, 2012).

Figure 2.4 The Netherlands, development of recycling, landfilling and incineration of municipal solid waste and landfill tax, 2001–2016 and EUR per tonne



Source: ETC/SCP, 2012 and Eurostat, 2016

In 2001, landfilling accounted for 8 % of generated MSW. In 2000 there was a sharp increase of the landfill tax from EUR 13 to EUR 65 per tonne, providing a significant incentive of reducing landfilling, which is not reflected in Figure 2.4 as it only covers the years after 2000. In 2002, the landfill tax was further increased to EUR 79 per tonne, and the following year the percentage of MSW landfilled dropped significantly to 2.7 % of generated MSW. This decrease can also be partially explained by the new provision in the first National Waste Management Plan 2002–2012 (LAP, 2003), which banned direct disposal of mixed municipal waste to landfill. In the following years, 2004–2007, the landfill tax was increased marginally and landfilling levels stayed low at around 2 % of MSW generated. From 2008, landfilling further decreased, from 2.1 % in 2007 to just 1.5 % of MSW generated in 2013. A significant change in taxation happened in 2010 when the landfill tax skyrocketed to EUR 107.5 per tonne, the highest rate in Europe.

The landfill tax, together with additional measures, has acted as a strong driver to divert MSW from landfill. As of 1 January 2012 the landfill tax was eliminated. In the past years the revenues from the tax on landfill had dramatically declined in line with the reduction of waste landfilled and therefore its existence was seen as an administrative burden providing no further benefits (ETC/SCP, 2012).

There is no simple correlation between the landfill tax increase and the total recycling of MSW. However, Figure 2.4 shows a steady, positive development in recycling, while the landfill tax increased, meaning more MSW was diverted to recycling. There was an abrupt increase in the reported amount of MSW incinerated from 3.3 million tonnes in 2007 to 4.9 million tonnes in 2008.

2.1.5 Environmental benefits of better municipal solid waste management

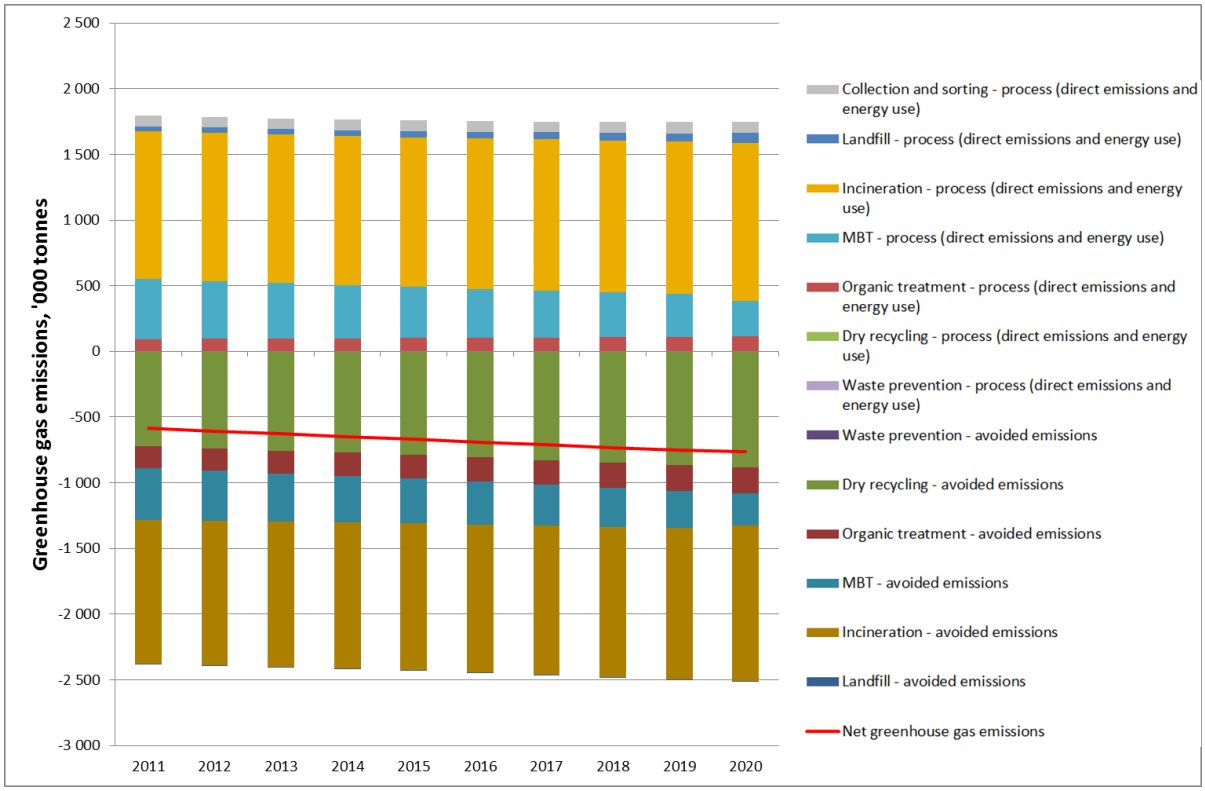
Figure 2.5 shows a scenario for the development of greenhouse gas emissions from MSW management in the Netherlands. The scenario assumes an average yearly increase rate of 0.25 % for municipal waste generation in 2011–2015 and an annual increase rate of 0.5 % for 2015–2020. The scenario also assumes that the EU targets for municipal waste are fully implemented. The calculation of emissions is based on data and assumptions contained in the European Reference Model on Municipal Waste Generation and Management. The approach taken in the model is rooted in life-cycle thinking, in that it considers not only direct emissions, but also avoided emissions associated

with the recycling of materials, and the generation of energy by waste management processes. The more detailed methodology is described in Gibbs *et al.* (2014a). The level of greenhouse gas emissions depends on the amount of waste generated and the treatment it undergoes each year.

Figure 2.5 shows the direct emissions, the avoided emissions and the net emissions of MSW management. All the greenhouse gas emissions (positive values) represent the direct operating emissions for each waste management option. The phases of the waste management chain covered include waste prevention; material recycling; composting and anaerobic digestion; MBT and related technologies; collection and sorting; incineration and landfilling.

For the avoided emissions (negative values), the calculations integrate the benefits associated with the recovery of energy and material recycling of paper, glass, metals, plastics, textiles and wood, and bio-treatment of food and garden waste from the MSW. (Gibbs *et al.*, 2014c)

Figure 2.5 The Netherlands, scenario for greenhouse gas emissions from municipal solid waste management, 2011–2020



Source: ETC/WMGE, calculation based on the European Reference Model on Waste

Note: results presented in this figure should not be used for the compilation of greenhouse gas reporting for the Intergovernmental Panel on Climate Change (IPCC) national inventory report, or be compared with IPCC figures, as the methodology employed here relies on life cycle thinking and, by definition, differs substantially from the IPCC methodology.

MBT means mechanical-biological treatment.

Based on the modelled scenario with full policy implementation, the net greenhouse gas emissions from the treatment of municipal waste in the Netherlands are already negative, with the benefits of better waste management exceeding the direct emissions from collection and treatment operations. The net emissions are expected to decrease slowly for the whole modelled period until 2020. Throughout the period the largest share of direct emissions related to municipal waste management is caused by incineration and MBT processes.

2.2 Uncertainties in the reporting

Some uncertainties or differences in how countries report recycling of MSW can result in different recycling levels. This applies, for example, to the following issues:

- the extent of packaging waste from households and similar packaging from other sources that are included or not included in the reported recycling of MSW.
- the definition of municipal waste used by the country, such as the inclusion/exclusion of home composting.
- the methodology used to report the inputs/outputs of MBT and sorting plants.

In the Netherlands, MSW covers all of the waste collected by or on behalf of municipalities. A very limited number of municipalities collect commercial waste from small- and medium-sized enterprises and these arisings are also counted as municipal waste. However, the amount of waste collected from businesses is very small relative to other sources of municipal waste (Gibbs *et al*., 2014a). Most waste from offices and services is collected by commercial collectors and is not included in the municipal waste data reported to Eurostat (Eurostat, 2015b).

The data on municipal waste reported to Eurostat does not separate packaging and non-packaging waste arisings as part of the household waste stream (Gibbs *et al.*, 2014).

The Dutch reporting is based on the final treatment of MBT or sorting outputs – incineration, recycling, landfill (Statistics Netherlands, 2012) – and thus there are no uncertainties in the reporting.

Considerable amounts of waste are traded in the Netherlands, either for recycling or incineration, and some uncertainty could arise concerning the origin of waste and its final purpose.

2.3 Important initiatives taken to improve municipal solid waste management

The pressing situation of the increasing amounts of waste and their disposal during the 1960s and 1970s had already sparked the interest in the Dutch government to introduce new policy initiatives with the aim of reducing waste and improving waste management.

The government of the Netherlands has utilised a mix of measures to enhance MSW management and encourage material and organic recycling. Several financial instruments have been used such as the tax on landfilling, producer responsibility for a number of products and rate differentiation through PAYT schemes in the collection of household waste (ETC/SCP, 2009).

The Landfill ban and landfills Decree of 1994 introduced a ban on landfilling 35 different waste streams. One year later, the Environmental Taxes Act of 1995 introduced a tax on the landfill of waste. Both measures contributed to a drastic reduction of waste being landfilled since their full application by 1996 (ETC/SCP, 2009).

In 1996, there was a decision to centralise responsibility for waste management which promoted a shift of responsibilities from provincial to central government authorities. The amended Environmental Management Act of 2002 shifted the responsibility for waste management to the Ministry of Environment (LAP, 2009).

The first National Waste Management Plan (NWMP) 2002-2012, issued by the Ministry of Environment, came into force in 2003. It covered almost all hazardous and non-hazardous waste and was applicable to the whole waste management chain. Three subsequent revisions measuring the

progress of its implementation followed in 2004, 2005 and 2006 (LAP, 2009). Among other measures, the Plan introduced stricter rules on disposal of MSW (LAP, 2003).

In 2009, the second NWMP came into force covering the period 2009–2015 and expanding its vision to 2021. The second Plan set some specific qualitative targets to be achieved in the medium to short term. A key target refers to the increase of recycling of household waste to 60 % by 2015 (LAP, 2009). The overall objectives of the second NWMP are as follows (ETC/SCP, 2009):

- to limit growth in waste generation, decoupling it from economic growth;
- to reduce the environmental impact of waste, optimising recovery and re-use;
- to minimise the environmental impacts from product chains – raw material extraction, production, use and waste management including reuse.

Following the same line of thought as in 2002, another steep increase of EUR 19 per tonne in the landfill tax was applied in 2010. The continuous increase of the landfill tax mostly rendered incineration cheaper than landfilling. As of 2011, the Ministry of Finance decided to eliminate the tax within its policy of a simplification of the taxes. In the past years, revenues from the tax on landfill had declined substantially following the reduction of waste going to landfill (ETC/SCP, 2012).

The Dutch Packaging Decree (2005) stipulates that Dutch producers and importers of packaged products are responsible for the separate collection and recycling of packaging waste and also for waste prevention. The packaging regulation covers plastic, paper and cardboard, metal, wood, textile and glass packaging and required producers or importers to achieve a recycling rate of 70 % and a recovery rate of 75 % for packaging waste by 2010. Recycling rates per material have also been defined (Watkins *et al.*, 2012)

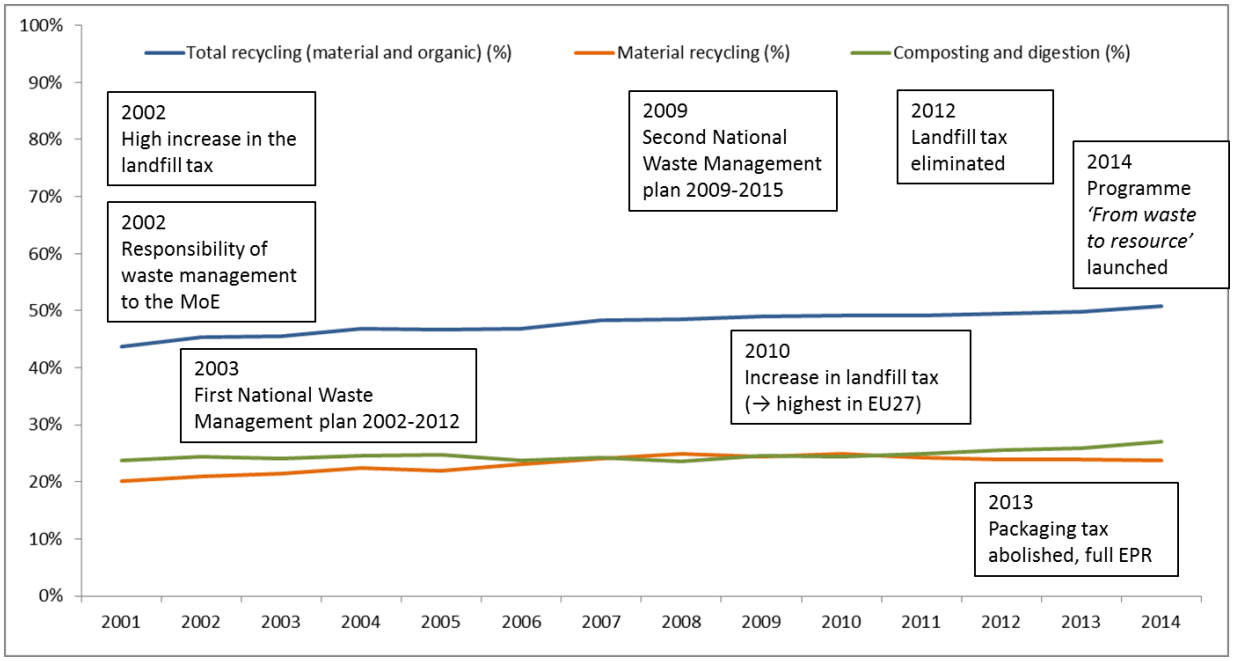
Previously, the Netherlands had a weight-based packaging tax, the revenues of which were used to finance the collection and recycling of packaging waste. However, this tax was abolished in 2013 and today the funding of packaging waste management relies on an extended producer responsibility (EPR) scheme. Since 2013 there is one EPR scheme in place for packaging waste with Nedvang being the organisation responsible for its collection, sorting and recycling (Christiaens, 2014). The financial responsibility is realised through reimbursement contracts with municipalities and sorting plants. The scheme covers 100 % of the net costs for the collection and treatment of separately collected packaging waste (Monier *et al.*, 2014; Mudgal *et al.*, 2014; Watkins *et al.*, 2012).

A feed-in tariff of EUR 25–48 per megawatt hour has been provided in the Netherlands for electricity produced from waste incineration if the efficiency of the installation is above 22 %. There is also a feed-in tariff of EUR 85–105 per megawatt hour for electricity from the fermentation of biodegradable waste. (Watkins *et al.*, 2012)

In order to further increase the amounts of recyclables collected, some municipalities have piloted so-called reverse-collection schemes through which the door-to-door collection for all recyclables is intensified while residual waste is collected less frequently or only, for example, through civic amenity sites. (Gibbs *et al.*, 2014)

In 2014 the Dutch government launched a new programme called *From Waste to Resources* with the main goal of accelerating the transition towards a circular economy (Government of the Netherlands, 2015). Because of this programme a new target was introduced, 75% collection of recyclables leaving less than 100 kg residual household waste per person per year in 2020.

Figure 2.6 The Netherlands, recycling of municipal solid waste and important policy initiatives, 2001–2014



Source: Eurostat, 2016

2.4 Possible future trends

The MSW recycling rate has increased slowly but steadily between 2001and 2014, reaching 51 % of generated municipal waste in 2014.

The second National Waste Management Plan (2009–2015) set a target of 60 % for the recycling of household waste by 2015. The data reported to Eurostat refer to municipal waste, comprising while household waste, waste from municipal services and from other sources collected together with household waste. The data reported to Eurostat can therefore not directly reveal progress to the target, but the 51% recycling rate for municipal waste in 2014 indicates that the national target might have been missed. The Dutch Government is considering raising the recycling target to 75 % (Ministry of Infrastructure and the Environment, 2016).

There are no major changes expected in the collection or treatment systems for municipal waste. Significant expansion of treatment capacity is foreseen only for anaerobic digestion (Gibbs *et al.*, 2014).

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