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Municipal waste management in Estonia

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Context
The Topic Centre has prepared this working paper for the European Environment Agency (EEA) under its 2012 work programme as a contribution to the EEA's work on waste implementation.

Disclaimer

Content

Highlights

- Recycling has increased from 5 % of MSW generated in 2001 to 20 % in 2010;
- Estonia only includes recycling of packaging waste from households to a limited extent in its reporting of MSW recycled;
- An extraordinary effort is required to meet the EU requirement of 50 % MSW recycling in 2020;
- The 2013 target for biodegradable municipal waste sent to landfill was met in 2009;
- A ban on landfilling of non-pretreated MSW,an increased landfill tax and active national waste management planning have been important policy initiatives in diverting biodegradable municipal waste away from landfills; and
- The waste management co-operation of local governments is still weak and has not developed as planned.

1 Introduction

1.1 Objective

Based on historical MSW data for Estonia and EU targets linked to MSW the analysis undertaken includes:

- The historical performance on MSW management based on a set of indicators;
- Uncertainties that might explain differences between the countries' performance which are more linked to differences of what the reporting includes than differences in management performance;
- Relation of the indicators to the most important initiatives taken to improve MSW management in the country, and
- Assessment of the future possible trends and achieving of the future EU targets on MSW by 2020.

2 Estonia's MSW management performance

Estonia became an EU Member State in 2004. As a part of the preparation of the EU membership the first National Waste Management Plan 2003–2007 focused on transposing EU waste legislation (EA, 2009).

The Ministry of Environment is responsible for developing and implementing the National Waste Management Plan and all other waste management policies. Under the Ministry there is an Environmental Board with six regional offices responsible for issuing permits (Estonia, 2012). Municipalities are in charge of organising the collection, transport and disposal of municipal waste (EEA, 2009 and ETC/SCP, 2009).

Until 2007, Estonia had a three tiered (National, County and Municipal) system of waste management plans. The 2007 amendment of the Waste Act changed the system to two tiers - National and Local. This move aimed to give more responsibilities to the municipalities and stimulate them to pool their resources and strengthen their human and financial capacities for better waste management activities. For example, it is compulsory for municipalities to build on waste management plans but they can now do so in coordination with other municipalities to form a regional waste management plan. Upon preparation of a waste management plan, the provisions of the national waste management plan shall be taken into account (EEA, 2009 and ETC/SCP, 2009).

In addition to the National waste plan, a local waste management plan shall set out:

- Development of waste transport organised by a local government within the administrative territory thereof;
- Development of separate collection and sorting of waste, and the corresponding deadlines for specific types of waste;
- Financing of waste management. (ETC/SCP, 2009).

The second Estonian National Waste Management Plan was approved in 2008 and covers the period from 2008 to 2013. For Biodegradable Municipal Waste, the second National Waste Management Plan gives a general priority to separate bio-waste from mixed MSW and the plan suggests separate collection of garden waste in cities and enhancing home composting in rural areas. It includes targets for the reduction of biodegradable municipal waste sent to landfill.

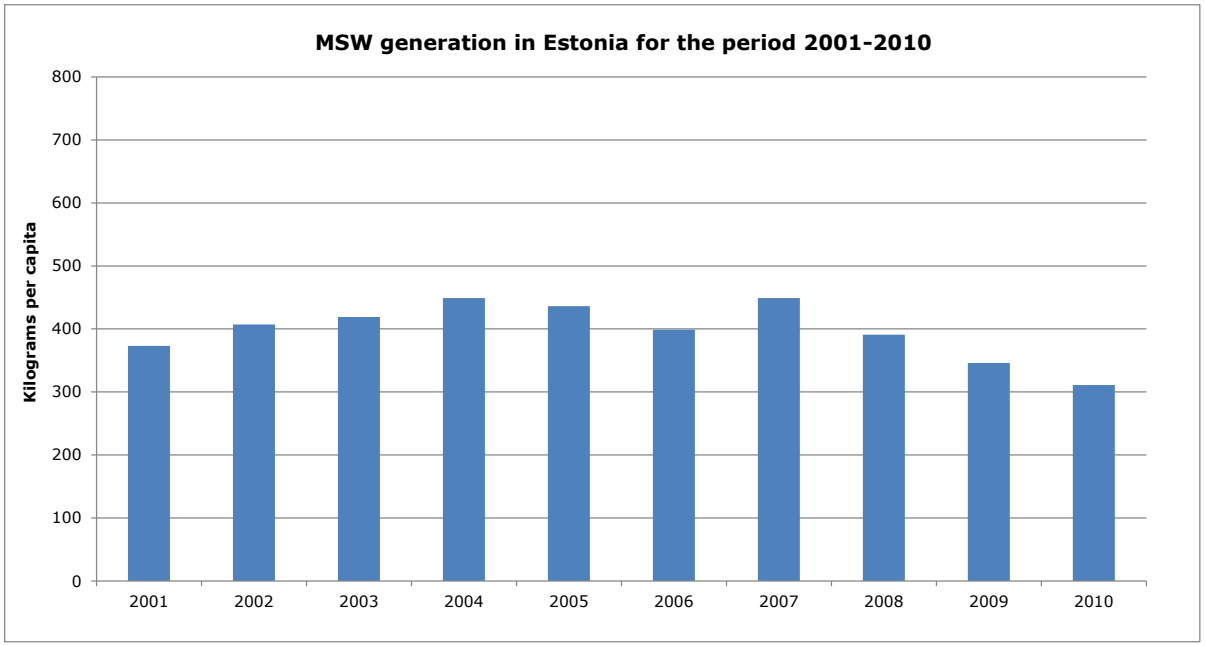
The generation of MSW in Estonia increased from 509 000 tonnes in 2001 to 602 000 tonnes in 2007. The generation then decreased to 417 000 tonnes in 2010. It has to be noted that not all the reported

generated MSW is in fact collected and managed. According to the reporting to Eurostat, only 80 % of the waste was managed in the period from 2001 to 2003 and from 2008 to 2010; and 90 % was collected and managed in the years from 2004 to 2007. In 2012, the Estonian Statistical Office has made a special survey about coverage of population with MSW collection. According to unpublished data, the percentage of population covered by waste collection services is now about 95 %, and the percentage of waste collected and managed is therefore presumably higher (Estonia, 2012).

2.1 MSW Indicators

Figure 2.0 shows the development of MSW generation per capita in Estonia from 2001 to 2010. There has been an increase from 373 kilogram per capita in 2001 to 449 kilogram in 2004. From 2005 to 2010, especially after 2007, there has been a large decrease so the level is now below the level in 2001. The decrease seems to be linked to the start of the economic crisis in 2008.

Figure 2.0 MSW generation per capita in Estonia



Source: Eurostat, 2012.

The majority of MSW in Estonia is still landfilled although there has been a large reduction in the last ten years. In 2010, the landfilled amount was 267 000 tonnes compared with 373 000 tonnes in 2006, and 403 000 tonnes in 2001. This decrease indicates a reduction of MSW landfilled from 79 % in 2001 to 64 % in 2010. Incineration is until now not applied, but an incinerator with a capacity of 220 000 tonnes per year is under construction and will be in operation by 2013 (Moora, Harri, 2012 and Estonia, 2012).

Overall, recycling has increased from 5 % to 20 % in the last ten years.

Some indicators regarding the development of MSW management are shown below. All percentage figures have been calculated by relating the waste management to the generated amount - not to the managed amount. Relating to the total managed amount of MSW generally results in higher rates for all waste management paths.

2.1.1 The recycling of MSW from 2001 to 2010

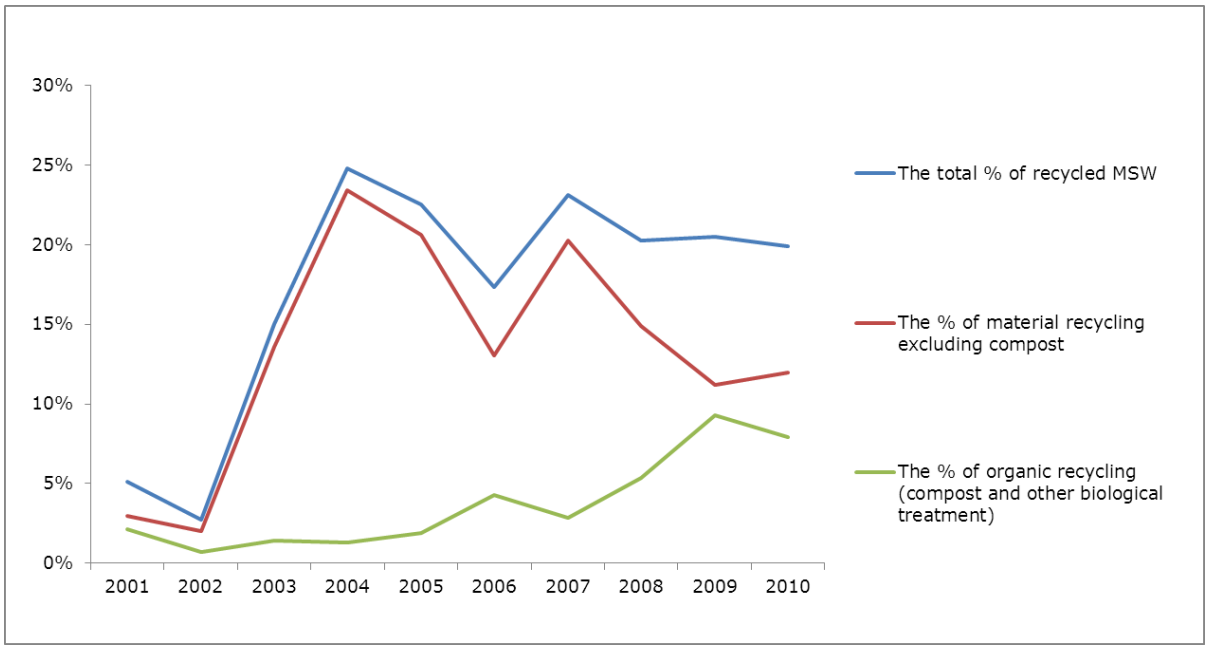
Figure 2.1 shows the development of recycling of MSW in Estonia related to total recycling, material recycling and organic recycling (compost and other biological treatment). Figure 2.1 illustrates a positive trend in the recycling of MSW from 2001 to 2010 although there are some fluctuations during the years. In fact, the recycling percentage was highest in 2004 with 25 %.

The total increase of recycling is first of all linked to material recycling which has increased from 3 % in 2001 to 24 % in 2004, and then fluctuated between 11 % and 21 %. The material recycling amount was 50 000 tonnes in 2010.

Organic recycling has increased steadily from 2 % to 8 % from 2001 to 2010, apart from a slight decrease in 2010, , equivalent to an increase from 11 000 tonnes in 2001 to 43 000 tonnes in 2009.

The development in Estonia shows that some progress has been achieved but there is still much room for improving both material and organic recycling.

Figure 2.1 Recycling of MSW in Estonia



Source: Eurostat, 2012. The percentages are calculated as % of generated MSW.

According to the Estonian authorities, the steep increase from 2002 to 2004 was in part caused by some methodological problems. In these years a big sorting facility for mixed MSW in Tallinn was put into use. The recycling rate increased as a result of this. However, the sorting itself was considered as a preliminary recovery-operation prior to recycling during these years. This caused some kind of double counting when recycled and recovered amounts were being summarised. The Estonian authorities have since subtracted the pre-treated amounts from the total recycled MSW and only registered the amounts of fractions sorted and actually recycled. The above-mentioned sorting facility has now stopped its activity due to economic reasons (Estonia, 2012).

2.1.2 The yearly increase rate of recycling of MSW

In order to assess the prospects for Estonia to meet the 50 % recycling target as set out in the Waste Framework Directive[1], three scenarios have been calculated. The scenarios assume that recycling in

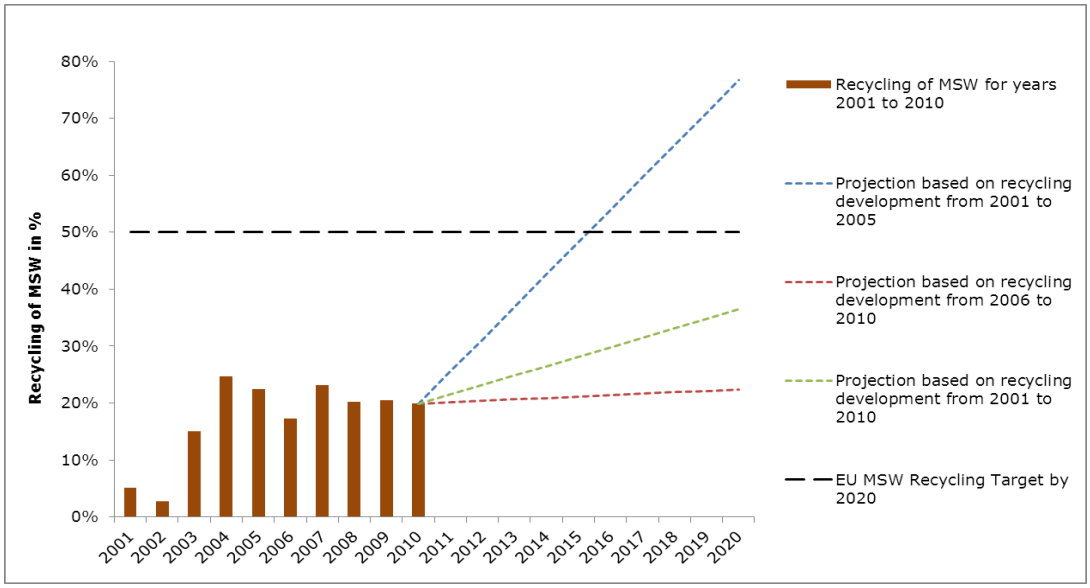
[1] The EU's updated Waste Framework Directive from 2008 (EU, 2008) includes a new 50 % recycling target for waste from households, to be fulfilled by 2020. In 2011, the European Commission decided that countries can choose between four

the period 2010 to 2020 develops based on a linear regression with the increase rates of recycling in the periods 2001-2005, 2006-2010 and 2001-2010.

Following the scenarios using the increase rates of 2006 to 2010 and of 2001 to 2010 it will require an extraordinary effort for Estonia to meet the EU requirement of 50 % MSW recycling in 2020 (Figure 2.2). . Estonia had a very high yearly increase rate of 4.3 % in the period from 2001 to 2005 but as indicated above, the data were influenced by methodological problems. However, if Estonia manages to increase its recycling rate at the same pace as in this period then the country would reach the target by 2016. However, it will require an extraordinary effort to achieve this.

The high share of bio-waste in the mixed MSW means that a 50 % rate for recycling of MSW will be difficult to achieve by 2020 without the use of bio-waste recycling (Estonia, 2012). According to the Estonian Ministry of Environment, achieving the 50 % recycling target will largely depend on the willingness to introduce influential economic measures to facilitate sufficient source separation (Estonia, 2012). Another important factor or main obstacle is according to the Estonian authorities that standards for the use of bio-waste are still missing on EU level (End-of-waste criteria for compost). The absence of such norms has seriously hindered the bio-waste source separation or the willingness to develop this (Estonia, 2012). The Estonian Ministry hopes that such end of waste criteria will be adopted on EU level in 2014. Furthermore, there are still open questions related to the an-aerobic digestion treatment and some green energy support mechanisms to boost this branch (Estonia, 2012).

Figure 2.2 Future recycling of MSW in Estonia



Source: Calculation by Copenhagen Resource Institute (CRI) based on Eurostat, 2012

It has to be kept in mind that these three scenarios are very simplistic and do not take into account any planned policy measures. In addition, they are based on one calculation methodology for recycling of municipal waste (MSW recycled/MSW generated, using data reported to Eurostat) whereas countries may choose to use another methodology to calculate compliance with the 50 % recycling target of the Waste Framework Directive. The scenarios in Figure 2.2 should therefore be interpreted only as to give some rough indications and assessment of the risk of missing the target.

different calculation methods to report compliance with this target. One of these methods is to calculate the recycling rate of MSW as reported to Eurostat. The EU's updated Waste Framework Directive in 2008 (EU, 2008) includes a new 50 % recycling target for waste from households, to be fulfilled by 2020. In 2011, the European Commission decided that countries can choose between four different calculation methods to report compliance with this target. One of these methods is to calculate the recycling rate of MSW as reported to Eurostat (EC, 2011).

2.1.3 Landfilling of biodegradable municipal waste

It is a general requirement of the EU Landfill Directive that all Member States have to reduce the amount of biodegradable municipal waste landfilled (BMW) by a certain percentage by 2006, 2009 and 2016. However, Estonia has been given a four year derogation period. The targets are related to the generated amount of BMW in 1995 (317 000 tonnes).

The National Waste Management Plan from 2004 sets targets for the diversion of BMW from landfills and the Waste Act (2004) introduced a ban on landfilling untreated waste (including municipal waste). However, it only applied to landfills in counties that had an established facility for treating municipal waste before 1 January 2008 (EEA, 2009).

According to the second National Waste Management Plan from 2008, a strategy for reducing landfill of BMW has been defined. Landfilled biodegradable municipal waste must according to this waste management plan and the Estonian waste act not exceed the following limits for biodegradable content (ETC/SCP, 2009; Estonia, 2007):

- 45 % by weight of total landfilled MSW from 2010;
- 30 % by weight of total landfilled MSW from 2013;
- 20 % by weight of total landfilled MSW from 2020.

These limits have been given a different definition to the targets in the EU Landfill Directive because the limits are related to the amount of landfilled MSW in the respective years and not to the generated amount of BMW in 1995. However, in practice, the targets seem to be stricter than those in the Landfill Directive unless there is a huge increase of total landfilled MSW in the future.

Estonia has reported its landfilled amount of BMW to the Commission for the years 2006, 2007, 2008 and 2009. In 2009, the landfilled amount was 155 000 tonnes (equivalent to 49 % of the generated amount in 1995).

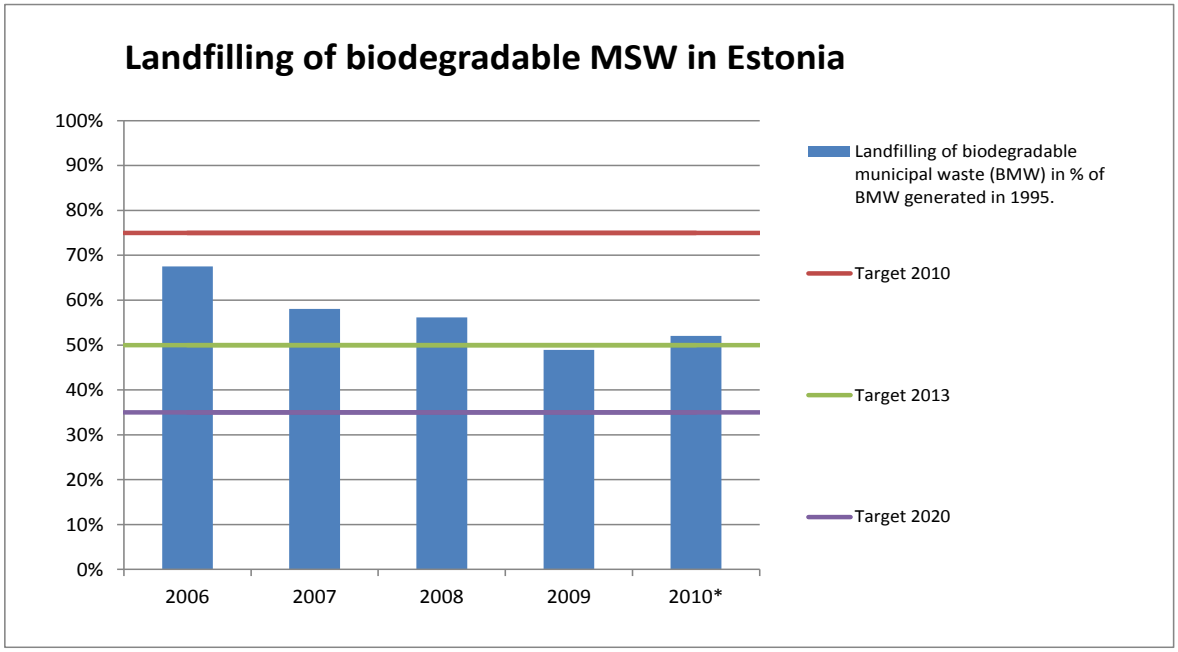
In Figure 2.3 the amount of landfilled BMW in 2010 has been calculated by subtracting the increase in amount of MSW going to composting and digestion (Eurostat, 2010) in 2009 to 2010 from the amounts of BMW being landfilled in 2010. Due to the decrease in organic recycling from 2009 to 2010, this implies an increase in the calculated percentage of BMW landfilled. However, the decrease in organic recycling might have been influenced by the decrease in MSW generated as well.

Figure 2.3 shows a steady reduction in the percentage of BMW landfilled in Estonia from 68 % in 2006 to 49 % in 2009 related to BMW amounts generated in 1995. In 2010, the calculated percentage of landfilled BMW was 52 % of the generated amount in 1995. At first glance, the reduction of BMW sent to landfill does not appear to be linked so much to an increase of recycling, cf. the recycling rates shown from 2006 to 2010 in Figure 2.1. However, as explained in Section 2.2, it seems that some of the recycled MSW is in fact not reported as recycled MSW. The reduction of BMW from 2006 to 2009 is also linked to increasing use of mechanical biological treatment (MBT). It started on small scale in 2007 and Estonia now has four operating MBT plants with a total theoretical capacity of 300 000 tonnes, whereas the central composting capacity is limited and incineration with energy recovery is under construction (Moora, Harri, 2012; Estonia, 2012).

Another explanation for the reduction of biodegradable MSW landfilled is that the 1995 figure included a lot of collected garden waste. Today the landfill gate fee, including the landfill tax, is about EUR 50 per ton, and therefore this garden waste is no longer landfilled. Instead, much of this garden waste is now home-composted and some is composted in parks. In both cases the generation and recycling of this waste is not reported (Estonia, 2012).

This development means that Estonia had already fulfilled the Landfill Directive's requirement to reduce landfill of BMW to 75 % (related to the generated amount in 1995) by 2006, way before the 2010 deadline. The 50 % requirement to be fulfilled in 2013 was already achieved in 2009. When a new incinerator close to Tallinn with a yearly capacity of 220 000 tonnes (Moora, Harri, 2012) will be fully operational, it is definitely feasible that Estonia will be able to fulfil both the 35 % EU requirement in 2020 (related to BMW generation in 1995) and Estonia's own target of 20 % in 2020 (related to MSW generated in 2020).

Figure 2.3 Landfilling of biodegradable MSW in Estonia



Source: EC, 2012 and CRI calculation.* The figures for 2010 are CRI estimations. The target dates take account of Estonia's 4 years derogation period.

2.1.4 Regional differences of MSW recycling from 2001 to 2010

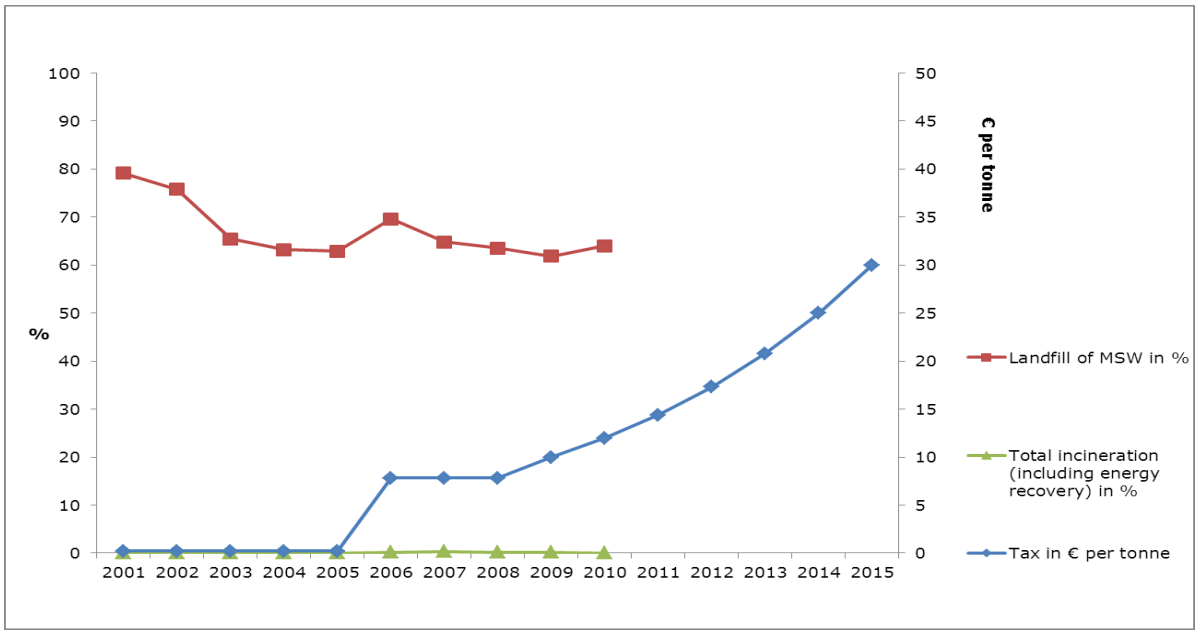
There is no regional data for recycling that has been reported to Eurostat by Estonia.

2.1.5 The relation between landfill tax level and recycling level of MSW

A landfill tax was established in Estonia in the first half of 1990. The tax rate depends on the type of waste. In Estonia, all waste disposal falls under the landfill tax (ETC/SCP, 2012). Furthermore, the Environmental Charges Act establishes in some cases increased rates for environmental charges. Charges are calculated according to an increased rate if waste is landfilled in quantities larger than permitted. If these limits are exceeded, then every disposed ton over the limit will incur a charge of 5-500 times more than the standard fee, depending on the category (hazardousness) of waste. The system or mechanism dates back to the era of the U.S.S.R. (1989) when illegal (without permission) disposal was commonplace and the then 'increased rate' was a penalty rather than tax. The present law has some remaining features from this time. The increased rates must also be paid in cases where waste is disposed without a permit (Estonia, 2012).

The landfill tax per tonne of municipal waste has increased from EUR 0.10-0.20/t in 1996 to EUR 7.8/t in 2006, EUR 10/t in 2009, EUR 12/t in 2010 and will increase by 20 % per year to EUR 30/t until 2015 (ETC/SCP, 2012). The tax is complemented by a ban on landfilling of untreated waste (EEA, 2009).

Figure 2.5 Development of landfilling and incineration of MSW and landfill in Estonia



Source: ETC/SCP, 2012 and Eurostat, 2012

Figure 2.5 demonstrates that the largest decrease in the rate of landfilling occurred before 2005. Since then, the total MSW landfill rate has remained almost constant despite an increase of the tax. However, as mentioned in section 2.1.3, the rate of BMW has decreased very much since 2006. This could be explained by the increased landfill tax in combination with the introduction of a ban on landfilling untreated waste (including municipal waste). Incineration of MSW has not yet started but it will soon be introduced.

Much of the tax revenue has been applied for the construction of new landfills.

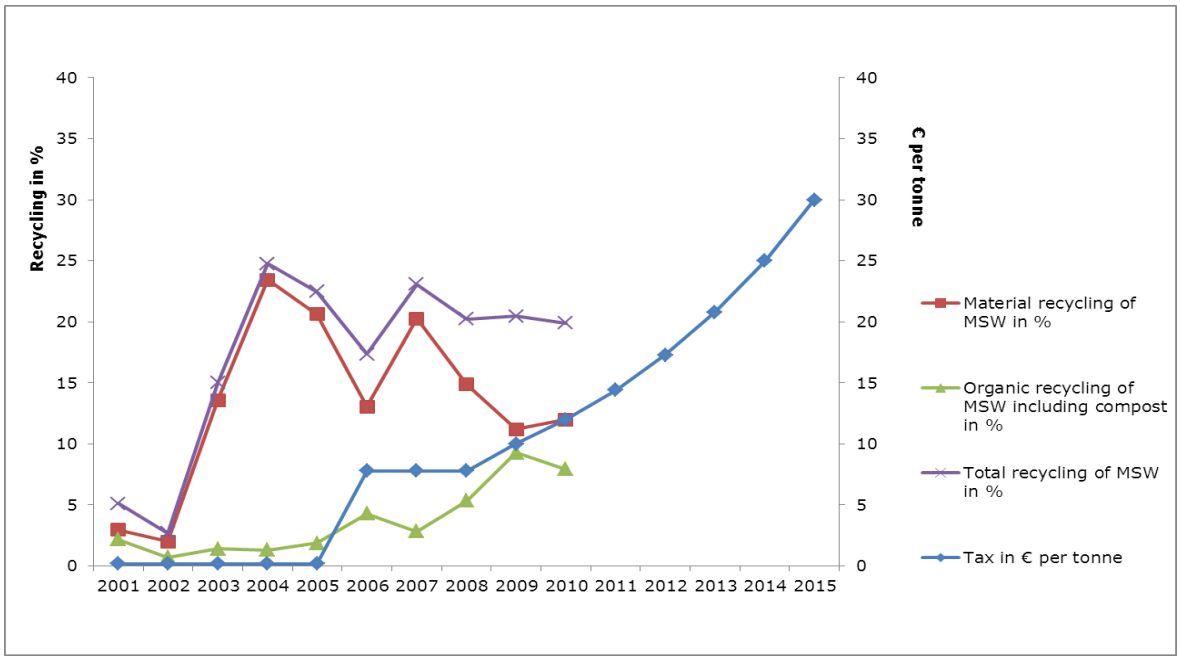
For the municipalities – which receive 75 % of the collected tax as a refund to the municipal budget – it is a problem that mechanical biological treatment (MBT) prior to landfilling and incineration is becoming more common. This will result in 3-4 times less waste landfilled and municipalities would loose revenues when reducing landfilling – with a strong negative financial impact on small municipalities. Therefore municipalities might turn out to be working against the implementation of the waste hierarchy, and try to motivate landfilling instead. This is a political 'hot potato' at the moment (ETC/SCP, 2012 and Eek, Peeter, 2011).

Looking at Figure 2.6, it seems that the waste taxation has failed to give strong incentives to move waste to either material or organic recycling. However as mentioned above it has given incentives for MBT (pre-treatment), which – in addition to generate refuse-derived fuel (RDF) for incineration – also will generate a certain small amount of recycling primarily of metals. This amount does not appear to be registered as recycled MSW.

According to the Estonian Ministry of Environment there has been sufficient money available for investments in recycling facilities partly because of funding from the EU Cohesion Fund. However, there have not been enough good projects to support. Furthermore, the level of recycling is not directly depending on the national recycling capacities. As a small country Estonia will always find it

difficult to reach 100 % domestic recycling capacity, and this would always be a huge economic challenge. The main barrier to recycling has been soft supervision of the existing targets and lack of enforcement (Estonia, 2012).

Figure 2.6 Development of MSW recycling and landfill tax in Estonia



Source: ETC/SCP, 2012 and Eurostat, 2012

2.1.6 Environmental benefits of better MSW management

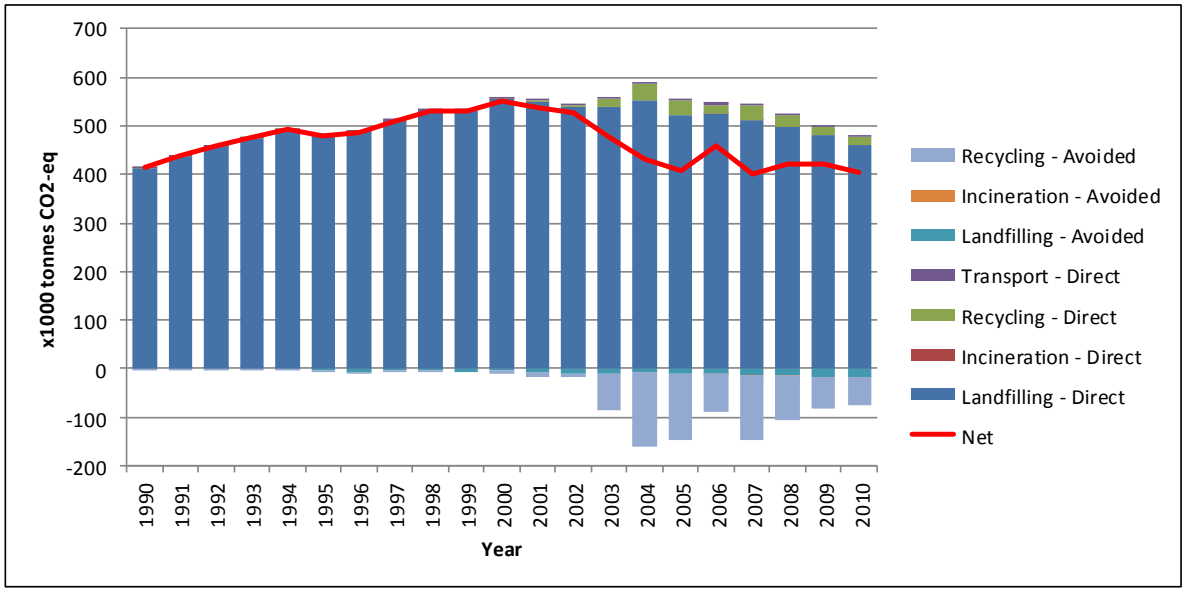
Figure 2.7 shows the development of GHG emissions from MSW management, calculated using a life-cycle approach. The graph shows the direct emissions, the avoided emissions and the net emissions of the MSW management.

Figure 2.7 indicates a steady increase of direct emissions from landfilling up until 2000. The direct emission levels have since been reduced due to less landfilling of BMW. These rather high levels of direct emissions from landfilling will also remain for years to come due to the fact that recently landfilled BMW (e.g. five to ten years ago) will continue to emit considerable amounts of greenhouse gases. Due to more recycling in the last couple of years, the direct greenhouse gas emissions from recycling have increased, whereas the level from incineration is zero due to no incineration.

An immediate positive outcome is the fact that an increase in recycling of MSW has resulted in reduced greenhouse gas emissions. This is due to the fact that recycling replaces the use of virgin materials and in that way avoids GHG emissions. This positive impact can be recognised in Figure 2.7 in the period between 2003 and 2010.

The net greenhouse gas emissions shown by the red line indicates that since 2000 better management of MSW has resulted in a reduction of net greenhouse gas emissions from 550 000 tonnes CO_2-equivalents in 2000 to about 400 000 tonnes CO_2-equivalents in 2010.

Figure 2.7 GHG emissions from MSW management in Estonia[2]



Results presented in this figure should not be used for the compilation of GHG reporting (national inventory report of the IPCC) or compared with IPCC figures, as the methodology employed here relies on life cycle thinking and, by definition, differs from the IPCC methodology.

2.2 Uncertainties in the reporting

Some uncertainties or differences in the reporting of MSW can result in different levels of recycling. One example of such differences which might influence the recycling rate of MSW in Estonia is to what extent packaging waste from households and similar packaging from other sources is included in the reported recycling of MSW. Most Member Countries, including Estonia, have producer responsibility schemes on packaging waste. Private operators of these schemes do not always report on the sources of the packaging waste, and therefore packaging waste is not always regarded or reported to Eurostat as MSW.

Figure 2.8 shows that the amount of recycled MSW in Estonia was equal or significantly higher than the amount of recycled packaging waste in the period from 2004 to 2008. The amount of recycled packaging waste increased from 44,000 tonnes in 2004 to 89,000 tonnes in 2008 and 2009. In 2009, 34,000 tonnes of the recycled packaging waste were of glass, 12,000 tonnes were of plastic, 40,000 tonnes were of paper and cardboard and 3,000 tonnes were of metal. In 2008 and 2009, the amount of recycled packaging waste is in fact much larger that the total recycled of MSW.

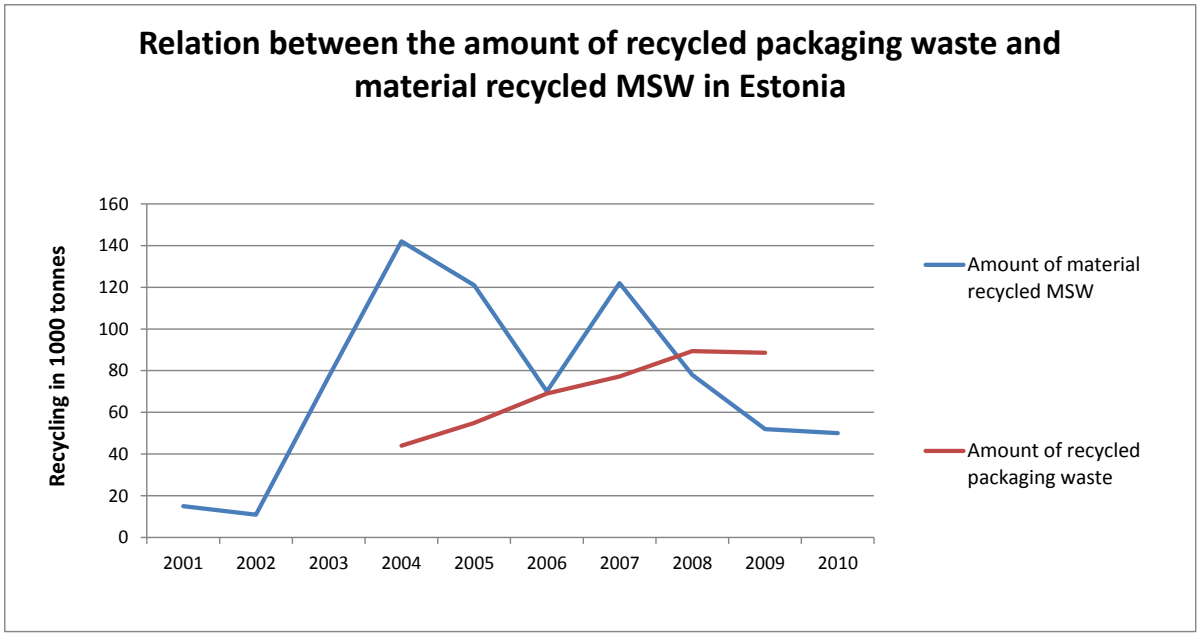
[2] All the GHG emissions (positive values) represent the direct operating emissions for each waste management option. These direct operating emissions have been calculated with the use of the IPCC (IPCC, 2006) methodology for landfills and life cycle modelling for the other technologies (incineration, recycling, bio-treatment and transport).

For the indirect avoided emissions (negative values), the calculations integrate the benefits associated with the recovery of energy (heat and electricity generated by incinerators, electricity generated by the combustion of landfill gas or methane from anaerobic digestion). Other avoided emissions include the benefits of recycling of food and garden waste, paper, glass, metals, plastics, textiles and wood in the municipal solid waste. Recycling is here assumed to include material recycling and bio-treatment. Avoided emissions of bio-treatment include fertilizer substitution. All processes generating electricity are assumed to substitute electricity mix of Estonia in 2009. Processes generating heat are assumed to substitute average heat mix for the EU-25 in 2002. The electricity mix and heat mix are assumed to remain constant throughout the whole time series. The composition of the MSW disposed in landfills, incinerated or recycled respectively are based on ETC/SCP (2011). In an Eionet consultation process, initiated by the EEA in 2012, Estonia updated the composition of the landfilled MSW for 2010. The complete methodology is available from ETC/SCP (2011).

Glass packaging waste is normally connected to private consumption. In the same way, larger parts of the other recycled packaging waste materials could also be regarded as recycled MSW. In other words, the figures in Figure 2.8 indicate that Estonia has excluded all or part of the packaging waste from households and similar packaging waste from other sources in its reporting of recycled MSW. This has been confirmed by the Estonian Environment Information Centre[3].

Therefore, the rather low MSW recycling rate in Estonia could to a certain extent be due to a different way of reporting recycled packaging waste compared with other countries.

Figure 2.8 Comparison of packaging waste recycled and material MSW recycled



Source: Eurostat, 2012

Another factor for uncertainty could be that in some countries the whole amount of MSW sent to Mechanical Biological Treatment (MBT), is allocated to recycling at the MBT plant. In other countries, it is in fact only the actual amount recycled after the MBT which is included, and not the amount subsequently sent to landfilling or incineration after MBT treatment.

Estonia has in recent years introduced MBT plants and the total theoretical capacity is approximately 300 000 tonnes. The full use of the theoretical capacity is not realistic. In addition it is at the moment unclear how these MBT plants will proceed, when the new incineration plant starts in 2013 (Estonia, 2012). A surplus of MBT capacity might occur (Estonia, 2012). Although MBT has increased in Estonia it does not seem that a very large amount from the sorting process is reported as recycled MSW.

2.3 Important initiatives taken to improve MSW management

Waste management was much affected by a rather radical shift towards privatisation when Estonia switched to a market-based economy in the 1990s. The former public waste management sector underwent near-complete privatisation. The municipalities took responsibility for organising the collection of MSW and defining how the waste should be treated, but the collection was undertaken by private companies found by tenders. The advantage of this process was that it harnessed quick investments to collection equipment and management. The disadvantages were that it was difficult to

[3] Matti Viisimaa from the Estonian Environment Information Centre has confirmed in an e-mail of 29 June 2012 that recycled packaging waste from households is normally not included in reporting of recycling of MSW.

steer waste management towards recovery and also to check whether the households were connected to a collection scheme. The municipalities' incentives to be involved in waste management became more limited (Eek, Peeter, 2011). Since 2000, there has been a continuous pressure to bring the municipalities back to waste management in order to achieve better results (Eek, Peeter, 2011).

Estonia introduced a pollution charge for municipal waste disposal in 1990. The tax was low compared to other European landfill tax rates, but it has increased considerably over recent years. The tax was EUR 12/t in 2010 and EUR 17.3/t in 2012 (ETC/SCP, 2012). Together with the ban on landfilling of untreated waste, the tax gives some incentives for diverting waste away from landfills.

The first National Waste Management Plan covering 2002-2007 had as a main goal to harmonise national waste management with EU legislation and to transpose and implement EU waste handling principles (ETC/SCP, 2009). Furthermore, there was a central focus on closing the old landfills and building of new ones. Moreover, it included proposals for networks of regional landfills and municipal co-operation structures. Incineration was considered to be too expensive, even with the available financial EU support (Eek, Peeter, 2011).

The first Waste Management Plan also set targets for the diversion of BMW from landfills and the Waste Act (2004) introduced a ban on landfilling untreated waste including MSW (EEA, 2009).

The second Waste Management Plan from 2008 covering the period 2008-2012 includes, as mentioned in section 2.1.3, ambitious targets for reducing BMW and MSW sent to landfill (ETC/SCP, 2009).

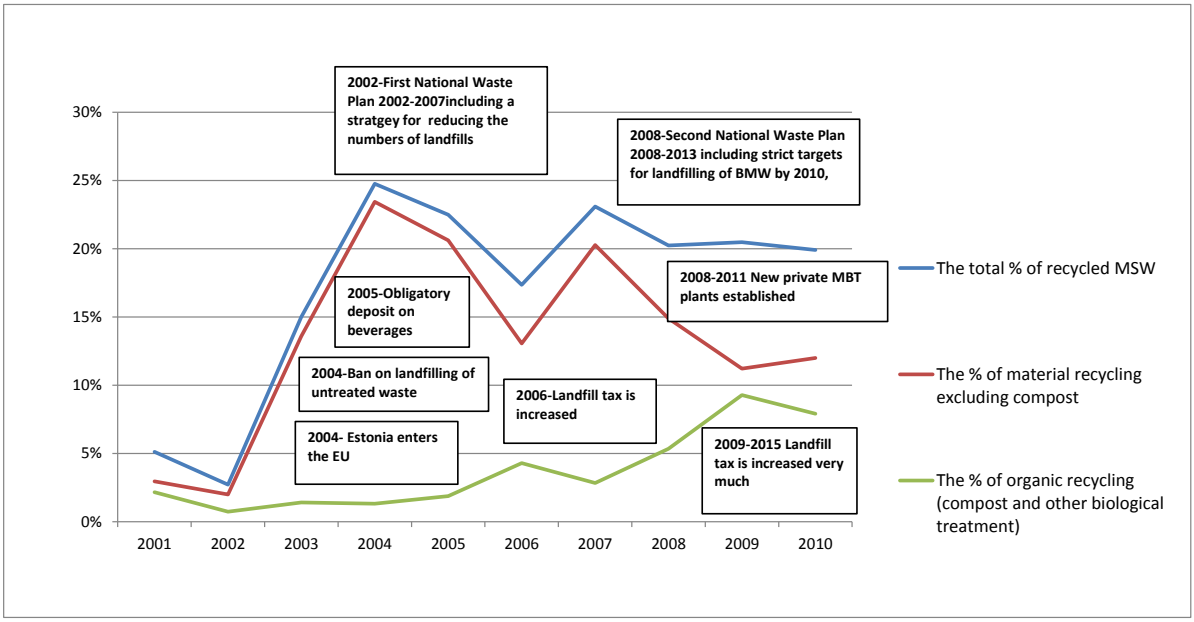
An obligatory deposit on both refillable and non-refillable beverage packaging was passed through the parliament in 2004 and came into force in 2005. The return percentages are very high depending on type of material, i.e. larger than 85 % for all beverage packaging (Eunomia, 2011). The system has been particularly effective in recovering beverage packaging waste (Moora, Harri, 2012).

The focus on closing old landfills and building new ones has been a success. Estonia had 221 landfills towards the end of the 1990s. Today Estonia has five landfills for non-hazardous waste (Estonia, 2011) - and the capacity is enough for the current landfilling level. However, since landfilling will drop further in the coming years, the landfills will enter a stage where more capacity is available than needed, i.e. over-investment in landfills has taken place (Eek, Peeter, 2011).

One problem which does seem to have been solved is securing of a good cooperation between the public and private sectors regarding management of MSW. Local authorities in Estonia have much less control over the development of waste management systems than in other EU Member States. Most municipalities in Estonia have not joined waste management cooperation structures (Moora, Harri, 2012). The waste management market in Estonia is to a great extent controlled by the private sector. There are also problems regarding ownership of the waste and intense commercial competition among private waste management companies (Moora, Harri, 2012).

The two national waste management plans have focussed on improving the cooperation of local governments in the field of waste management, but this co-operation is still weak and has not developed as planned. There are counties where there are no cooperation structures whatsoever; in some counties, on the other hand, such cooperation structures have been launched. However, their contribution as a whole is not perceivable (Estonia, 2011).

Figure 2.9 Recycling of MSW in Estonia and important policy initiatives



2.4 Future possible trends

Estonia does not fulfil the criteria stated in Article 11 (3) of the EU Waste Framework Directive in order to obtain a derogation period for fulfilling the 2020 target of 50 % recycling of MSW. Therefore, as indicated in Figure 2.2, if Estonia is to fulfil the 50 % EU recycling target by 2020, it is necessary to obtain a very high yearly increase of recycling from 2010 to 2020. This increase has to be at least 2.0 % per year. It is possible that part of the increase can be fulfilled by including some of the recycled packaging waste from MSW sources more systematically in the reported recycled MSW, cf. section 2.2.

Figure 2.2. shows that the total level of recycling has barely increased during the last five years. Good results have been achieved in diverting BMW from landfills that instead is sent to pre-treatment. This has been achieved by using a combination of planning and legislative and economic incentives. The necessary investments in new landfills and MBT plants have been made, supported by Nordic countries and later EU funds (Eek, Peeter, 2011) and the first incinerator is expected to start operation in 2013. However, there is a high risk that the success in diverting waste from landfill to primarily energy recovery will have a negative impact on separate collection and recycling schemes of MSW, putting Estonia at risk for not meeting the 50 % recycling target for MSW.

It is estimated that recycling of MSW can be increased with nearly 100 000 tonnes. There is a high potential especially for bio-waste recycling, and therefore the development of source separation is crucial (Eek, Peeter, 2011).

Waste streams covered by ‘extended producer responsibility’ can also contribute to increased recycling of waste streams linked to MSW (Eek, Peeter, 2011).

Under all circumstances, the necessary increase in recycling will require a big effort from the Estonian government, the local authorities and a good co-operation between the public and private sectors in order to secure sufficient separate collection schemes and treatment capacity. The positive experiences gained from the planning and the execution of diverting MSW and BMW from landfills have to be transferred to increasing recycling of MSW.

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