

Recycling of bio-waste as a part of municipal waste

Has the recycling of bio-waste increased, and what are the main obstacles to the recycling?

Summary of the results of the overview

What did we look at?

The National Audit Office (NAO) reviewed what the Ministry of the Environment and other state agencies have done to increase the recycling of bio-waste (especially food waste), which would also increase the recycling of all municipal waste.

Why is this important to taxpayers?

Waste needs to be recycled in order not to waste natural resources and not to pollute the environment. Bio-waste contains nutrients, and using compost made of it helps to improve soil fertility. Bio-waste can also be used to produce biogas, which helps to replace non-renewable energy sources.

The more bio-waste is collected separately from other kinds of waste and recycled, the less it ends up in incineration and landfills, i.e. nutrients and energy are not wasted, and other kinds of waste are easier to recycle if these are not dirty. Separate collection of bio-waste and finding uses for bio-waste would help to reduce the costs associated with all waste management.

In 2020, Estonia had to recycle 50% of municipal waste; in 2025, 55% must be recycled; and, in 2035, it will be already 65%. In 2019, 31% of municipal waste was recycled, and it has been remaining at the same level approximately for the last 10 years. As 1/4 of municipal waste is bio-waste, it is important to collect and recycle this waste separately in order to achieve the targets on the recycling of municipal waste.

In 2014–2020, approximately 81 million euros of European Union funds were allocated to the circular economy, of which 12 million were allocated to the waste sector. In addition, 7.25 million euros of the Estonian taxpayers' money was given to the waste sector through the environmental program. In 2021–2027, it is planned to use European Union funds to promote the entire circular economy (including waste management) by the same amount, and to provide 3 million euros of the revenues from emissions trading to municipalities so that they can develop the infrastructure for separate waste collection.

What did we notice as a result of conducting the overview?

By 2025, the Estonian state will have to double the recycling of municipal waste in order to achieve the target of recycling it by 55%. Approximately, in the last ten years, the municipal waste management in Estonia has not improved. In 2019, the generation of municipal waste, including bio-waste, and its disposal have decreased, but the recycling has not increased.

There is no plan on how to remedy the situation immediately. If the target is not met, Estonia can expect a so-called “waste fine” by the European Union.

The Ministry of the Environment has chosen a different accounting methodology for reporting the recycling of municipal waste in order to escape a possible fine by the European Union, and has commissioned several additional studies to analyse and improve the situation in order to achieve the recycling targets by 2025. However, there is an urgent need to develop the recycling capacity more effectively, to create demand for bio-waste products, and to promote separate waste collection. To do this, the following obstacles must be removed.

- **Existing and proposed facilities for the recycling of bio-waste are not sufficient to recycle all the bio-waste generated (especially food waste). Support should be given to the activities that are the most effective in the recycling of bio-waste and ensuring the use of high-quality products made of the recycled waste.**

122,000 tonnes of bio-waste was generated in 2019. According to the Ministry of the Environment, presently, a maximum of 37,500 tonnes of food waste per year can be composted or used to produce biogas. Additionally, 57,000 tonnes of garden waste per year can be handled. On the one hand, this capacity is not enough to recycle all the bio-waste generated, and, on the other hand, the existing capacity is not used in practice – only 11% (13,900 t) of the generated bio-waste has been recycled, most of which has been composted. Only 10,000–11,000 tonnes of compost is certified, i.e. made sure that it meets certain requirements.

In order to promote the recycling, in 2018, the state has allocated subsidies for the construction of a bio-waste management plant (for the recycling of 20,000 t of bio-waste) and for composting in households. The state subsidies for composting at home have beneficial effects, because, this way, waste does not end up in mixed municipal waste. On the other hand, it is important to ensure that composting is performed with high quality, and that its product finds usage. Otherwise, this waste is not recycled, and rather the damage is done to the environment.

- **Demand for bio-waste products has not been stimulated, and the value of recycling the bio-waste has not been acknowledged.** The costs of bio-waste management are currently, yet, higher than the earnings. This is also due to the small handling volumes and the lack of demand for the products.

Separate collection of bio-waste and the availability of waste management facilities are a very important precondition for its recycling, but it is equally important that the state and municipalities themselves set an example in the use of bio-waste products and stimulate demand for the latter. The Ministry of Economic Affairs and Communications has granted the renewable energy subsidies for biogas production, but no advantage has been given to the use of the compost made from bio-waste.

Both the Ministry of the Environment and the Ministry of Rural Affairs should, in addition to preventing the generation of food waste, make efforts to ensure that compost made from this waste is taken back to fields as valuable source of nutrients that replace artificial fertilisers and improve soil properties. The Estonian Rural Development Plan could promote the use of compost made from bio-waste, but this has not been done at present. The use of compost made from bio-waste would also be improved if its use were required in road construction and landscaping procurements.

- **The Ministry of the Environment has not been able to motivate municipalities to collect bio-waste separately and recycle it. Therefore, only slightly more than half of the municipalities collect bio-waste in the framework of organised waste transportation.**

According to the Ministry of the Environment, the greater recycling of bio-waste is hindered primarily by the poor activities of municipalities in organising the waste management and collecting bio-waste separately. For this reason, it is also desired to include in the Waste Act the requirement that, from the beginning of 2024 at the latest, municipalities should organise separate collection of bio-waste from the source, within the framework of organised waste transportation.

At the same time, the requirement for separate collection of bio-waste has been in the legal enactments for years. Legal enactments could not be sufficiently enforced, and municipalities could not be motivated to invest more in the bio-waste management. The Environmental Investment Centre has provided subsidies for the construction of waste handling stations, but as the bio-waste generated by households is generally not handled in them (except for larger landfills

and handling centres), their contribution to the separate waste collection and the recycling of bio-waste has been modest.

In addition, the NAO observed the following.

- **Innovative solutions for recycling of bio-waste have difficulty accessing the market.** In addition to the most common operation of the recycling of bio-waste, which is composting, it is also possible to produce gas from bio-waste, to ferment bio-waste, to gasify it thermochemically, to produce new substances from it, etc. The introduction of new ways of waste management is hampered by a lack of new technology and experience, as well as by poor availability of waste suitable for recycling.

Consideration should be given to removing some legal restrictions (e.g. composting for catering establishments could be simplified, exemptions could be made within the organised waste transportation system, and more recognition should be given to bio-waste products). The state should fully encourage the use of innovative solutions and at the same time accept (e.g. in financing) the risks involved.

- **The Ministry of the Environment wants to extend the validity of the old waste management plan, and no fundamental changes are proposed before 2023 in connection with the recycling of municipal waste, including bio-waste.**

The targets of the 2014–2020 waste management plan have not been achieved with regard to bio-waste, although it was already indicated during its preparation that separate bio-waste collection is too low in total. The European Commission has repeatedly made proposals to Estonia, including an early warning in 2018 about non-compliance with the requirements of the directives on waste. The Ministry of the Environment hoped to solve many of the mentioned shortcomings with draft laws, the processing of which, however, has stalled in the Parliament. The researches being made in 2021 analyse the possibilities of achieving the targets, and further activities regarding both waste management and circular economy will be planned only by the end of 2022 when these topics are integrated in the environmental development plan to be completed.

Comment of the Minister of the Environment: The Ministry of the Environment agrees that the recycling of bio-waste is important, but so far separate collection of bio-waste and also its recycling have been lower than expected. Promoting separate collection of bio-waste and increasing its recycling are one of the priorities of the Ministry of the Environment in the field of municipal waste management, and efforts are made to continuously and immediately improve the situation of the recycling of municipal waste. To this end, a draft amendments to the Waste Act and the Packaging Act are being processed, and the recycling and separate collection of bio-waste are being supported. Cooperation with municipalities is considered important, and this issue is oft-discussed with them.

Comment of the Minister of the Rural Affairs: The Ministry of Rural Affairs has pointed out that farmers have found that the use of compost in the fields is not profitable due to high costs (especially transport costs). Although the state has developed requirements for the production of compost from biodegradable waste, the use of compost is also hindered by the fact that its quality cannot be guaranteed. The Ministry of Rural Affairs considers that before encouraging the use of compost in agriculture, it is necessary to make sure of its quality and complete safety, and therefore subsidies alone are not enough to encourage the use of compost.

The compost produced from food waste could be used primarily in landscaping, road construction, and gardening (including plant growing), as well as in tree nurseries. The Ministry of Rural Affairs agrees that the support (subsidies) should be granted to local solutions, as well as other innovative solutions that help to recycle waste.