





## THEMATIC ANALYSIS

## Hungary

### A LIST OF GOOD PRACTICES & AN INVENTORY OF SITES, FACILITIES, AREAS AND EQUIPMENT TO BE DEVELOPED IN THE COOPERATION



## February 2024







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## **1.** Introduction

#### **General context**

Bio-waste includes biodegradable garden and park waste, food waste from households, offices, restaurants, canteens and retail outlets, and waste from food processing plants.

Composting (treatment in the presence of oxygen) leads to the production of soil amendment fractions; anaerobic digestion (treatment in the absence of oxygen) produces biogas<sup>1</sup>.

In the EU, 118-138 million tonnes of bio-waste is generated every year; only 40% of this is recycled.

In addition, on average up to 50% of municipal solid waste is organic waste, making this fraction central to the circular economy.

In rural areas with low population density, the management of organic fraction is both environmentally and economically difficult, as the collection, transport and treatment of small amounts of organic waste scattered in remote and sparsely populated villages is a polluting and costly process.

Prevention of bio-waste and the development of quality composting could help to drastically reduce the impact of this fraction and its treatment. The resulting materials could be used as soil amendments and fertilisers in local parks and gardens, or as biogas, while other uses could be promoted.

Despite the fact that existing regional and local policies across Europe are monitoring the transition of the waste management sector towards a circular economy, the management of bio-waste is often underdeveloped, despite its importance not only for the circular economy but also for climate change mitigation.

#### Justification of the project

Within the framework described, the Interreg Europe CORE - Composting in Rural Environments project aims to provide an incentive for further development of *composting in* rural areas.

The project brings together regional and local administrations with competence in bio-waste management from 8 rural regions in Europe, supported by the European Composting Network (ECN) as an advisory partner.

The partners will exchange experiences on bio-waste management over 4 years, with the expected outcome of new projects and improved bio-waste policies in all partner areas.

<sup>&</sup>lt;sup>1</sup> Even though the project literature uses the *word* "*composting*" by default, the CORE project also addresses composting and anaerobic digestion, as well as prevention and separation in rural areas, as preparatory steps in the process. However, for the sake of simplicity, the *word* "*composting*" is used in a generic sense, representing all of them in practical terms.





#### Thematic analyses aim to

Interreg Europe is a programme for the exchange of experience and policy development. In line with this, the 'studies/analyses' eligible for funding are not research or scientific in nature, as this is not the purpose of the programme.

In the framework of Interreg Europe, the aim of "studies/analyses" should be to contribute to and facilitate the process of exchange of experience and policy and territorial development.

Accordingly, the thematic analyses allowed in CORE should serve for each partner area to prepare during the first semester the cooperation for the next 4 years, by identifying in advance - in the form of a roadmap - (I) what local experiences will be shared with partners in the coming years and (II) what local resources can be further developed/improved thanks to the knowledge gained during the cooperation. The partners will organise this information in the form of lists.

These lists are not irrevocable, as new experiences to be exported and new areas to be developed may emerge during the project; however, the aim is for each partner area to carry out a self-reflection from the outset, useful for planning its participation in and benefits from the cooperation, listing a number of experiences to be shared and a series of local gaps that it is hoped can be filled thanks to the experience gained during the project.

The following pages provide a template for taking inventory of such information.







## 2. Regional context

In Hungary, a comprehensive waste management regulatory system was introduced in the framework of the harmonisation of legislation in the period before EU accession. The current form of waste collection came into force on 1 January 2016. Separate waste collection was introduced in Budapest in the 1990s and gradually extended to other municipalities in the country, but it was not based on uniform principles, so the existing system needed to be reformed and standardised.

With the restructuring, the public waste management task was split into a public task for the state and a public task for the municipality. The state has set up a coordinating body to carry out the public tasks, the National Waste Management Coordination and Asset Management Limited Company (NHKV Zrt.). The company was given the task of operating the public waste management service, defining the nature and conditions of the tasks to be performed, the related separate waste collection and recovery targets, directions and tasks. Waste management regions have been established in the country on the basis of an optimised territorial arrangement, where the public waste management service is provided by the municipality concerned and the public service provider deemed appropriate by NHKV Zrt. The new system has made it possible to better coordinate waste management.

In 2019, there were 25 waste management regions (WMAs) and 27+1 public service providers (PSPs) in Hungary.









In 2020, the government adopted the Climate and Nature Action Plan, which includes measures to reduce waste and eliminate illegal waste in the country. By creating and adopting the plan, the Government expects to facilitate the transition to a circular economy and has introduced an innovation in waste management that treats waste as a raw material. In line with EU ambitions, the changes will include a reform of the take-back system, a reform of the environmental product charge and the introduction of an extended producer responsibility scheme.

In order to establish a single waste management system, the Government has launched a call for tenders for the concession of the practical right to carry out public tasks in 2022. The winner of the public procurement was MOHU MOL Hullgazdálkodási Zrt., which will be responsible for the reception, collection, transport, pre-treatment, trading and transfer for treatment of waste falling within the scope of public service and institutional sub-activities from 1 July 2023. The institutional sub-activities also include the operation of the extended producer responsibility scheme and the compulsory take-back system. The concessionaire's tasks will be carried out throughout the country.

The concessionaire is responsible for achieving the stringent waste management targets set by the European Union in the context of the transition to a circular economy.

To achieve these, the current waste management system needs to be made more efficient, with the following targets:

- Recycling rate 2025: 50%
- Recycling rate 2040: 65%
- Landfill rate 2040: 10%

Legislative changes also support the achievement of a more efficient system. At present, the Waste Act (Act CLXXXV of 2012) is the "basic law" of waste management in Hungary, setting out framework principles and systems, including the responsibilities of the concessionaire and the minimum requirements for extended producer responsibility.

The essential elements of the Waste Act, as amended on 1 July 2023:

- the concessionaire is responsible for the reception, collection, transport, pre-treatment, trading and transfer for treatment of industrial and commercial waste arising from products covered by the extended producer responsibility system;
- the concessionaire or the concessionaire's subcontractor is the owner of the waste, subject to a handover obligation;
- only the concessionaire (or his subcontractor) is entitled to take over the waste, i.e. the producer is not free to dispose of his own waste, but can only transfer it to the concessionaire (or his subcontractor) at a price set by the concessionaire;







The concession covers all waste in Hungary, which amounts to 20 million tonnes per year, broken down as follows:

Municipal solid waste	18%
Waste from industrial production	27%
Construction and demolition waste	35%
Municipal liquid waste	3%
Non-hazardous waste from households	4%
Agricultural and food waste	13%

The concession covers the following waste:

- Biodegradable waste
- Other mixed packaging waste
- Battery, battery except lead battery
- Wood waste
- Metal scrap
- Waste rubber
- Used cooking oil and frying fat
- Heat exchanger
- Vehicle that has become waste
- Office and advertising paper

- Lamps, luminaire waste
- Plastic waste
- Lead battery
- Paper waste
- Textiles
- Glass waste
- Mixed compost waste
- Hazardous and other waste
- WEEE

The tasks of the processor are:

Contractual obligation:

- Making waste collection and transport more efficient.
- Optimising the use of waste treatment facilities nationwide.
- Introduction of a producer responsibility system (EPR).
- Introduction of a mandatory redemption system (DRS).
- Developing new separate collection of household waste streams.
- Creating new energy recovery (incineration) capacity.
- Implement improvements min. HUF 185 billion.

Indirect expectation:

- Setting up a waste tracking IT system.
- Promoting awareness raising and consumer participation.
- Organising waste disposal/recycling tasks.

In addition to Act CLXXXV of 2012, Act XLIII of 2000 (Act on Waste Management) is also applicable **to** waste management.) The scope of the Decree covers untreated and treated bio-waste, stabilised bio-waste and activities involving the treatment of bio-waste for agricultural, forestry and horticultural use or the establishment, construction and operation of a bio-waste treatment plant. The Regulation defines separately community composting, on-site composting and anaerobic







biodegradation. It provides for the treatment of residual waste, known as stabilisation. It lays down the tasks of the waste manager and the procedures for the waste treatment permit process.

On 1 January 2024, Government Decree 559/2023 (XII.14) on activities to prevent the formation of biodegradable waste, detailed rules for waste management activities related to biodegradable waste and rules for the classification of compost produced from bio-waste entered into force. With this Regulation, Hungary aims to comply with the EU Waste Framework Directive, which requires the separate collection of household bio-waste from 31 December 2023.

The scope of the Regulation covers:

a) to prevent the generation	of	(i) compostable biomass,
biodegradable waste,	(j) the ancillary materials that may be used	
b) biodegradable waste,		for composting on the site,
c) stabilised waste,	k) stabilisation,	
d) mixed waste,		<ol> <li>biogas production,</li> </ol>
(e) the fermentation residue,		(m) the ancillary materials that may be
f) compost,	used for biogas production; and	
(g) home and community composting, n) the end of biodegradable waste status		
h) on-site composting,		covers.

However, the Regulation does not regulate plant residues from agricultural and forestry activities that remain on and below the surface, or biogas that naturally forms in landfills.

As regards the prevention of biodegradable waste, the Regulation encourages local and community composting, will carry out regular data collection every 5 years on the use of bio-waste and compost, and will provide awareness raising and education through the Wasteless programme run by the National Food Chain Safety Office (NÉBIH).

The Regulation regulates what can be collected and what is prohibited. The Regulation regulates the conditions for individual collection and use (home composting), community composting and composting on the premises.

What this regulation unfortunately does not solve is that it does not cover everyone, it only applies to the general public. Thus, biowaste generated in catering establishments and markets, because it is considered an animal by-product, falls under a different competence and is not the responsibility of the waste concessionaire. Another problem is that separate collection of bio-waste is not compulsory for the general public. The Regulation states that 'biodegradable waste shall be collected by the holder of the waste at the place of its generation, separately and in a manner that does not endanger the environment, in containers set up exclusively for that purpose, on a voluntary basis'. Unfortunately, this makes it very difficult for the public to engage and participate.

Another complicating factor is that the concessionaire is responsible for collection and transport, and is no longer responsible for the recovery of the collected bio-waste.

The introduction of household collection of bio-waste will be phased in.





The first phase, to be introduced in early 2024, will involve 460,000 people in door-to-door collection.

CORE

From January, the concessionaire will launch the service in 14 municipalities across the country, in the XI and XXI districts of Budapest, Miskolc, Debrecen, Székesfehérvár, Szolnok, Kecskemét, Cegléd, Zalaegerszeg, Békéscsaba, Nagykanizsa, Tatabánya, Kaposvár, Gyula and in the condominium areas of Békés.

The second phase will start in 2025 and will involve 1.5-2 million inhabitants, mainly in the other duchies and larger cities. It is promised that by the end of 2025 collection will be complete in metropolitan areas, but as the government decree states that the scheme should be introduced where it is economically rational to do so, small towns and villages in particular may be left out.

In the first phase, starting in January, the concessionaire will provide 188,000 5 litre odour and spillproof bins and 14,524 120 litre brown bins to ensure proper segregated collection.

The collected bio-waste will be recycled in biogas plants. The municipalities in the first phase have been selected where a biogas plant is located nearby. Currently, there is no full coverage in Hungary in this respect.

In rural areas, it will be decided together with the mayors whether the collection and transport of bio-waste is necessary or whether local use is a better option.

The final urban collection is processed in biogas plants. These urban areas are located in the condominium zones. In the single-family areas, collection and transport are still not resolved and communication is still uncertain. It is in these areas that the promotion of composting has a real interest.





# 3. List of good practices to be shared in the cooperation

Local Good Practices on Community Composting		
Title: Community composting in Location: Short summary:	<ul> <li>in Kóspallag (good practice presented in Ciudad Real) Kóspallag</li> <li>Community composting was launched in the village in early 2020 at a designated place, the principle was that anyone could bring green waste from the residents in a predetermined form (information boards were made, leaflets were distributed to the residents) and after modern composting, the compost material would be returned in bags for residential use. Unfortunately, the population did not follow the instructions, a lot of green waste was dumped inappropriately prepared, making community composting unsustainable and unmanageable.</li> <li>At that time, the municipality organised training, a scenario was prepared for the correct operation of the composting was moved to a place (next to the community garden) where it could be supervised and assisted by the population.</li> <li>The compost r is still in operation today and is used enthusiastically by the public, who compost garden green waste under controlled conditions. In summary, the solution was to take the following steps: <ul> <li>Training,</li> <li>Scenario was developed on how to do it well,</li> <li>Green NGO was involved,</li> <li>Moved the community composter to a community garden to ensure that landfilling takes place in a controlled environment,</li> <li>The community garden team and the municipality's public workers can manage the waste.</li> </ul> </li> </ul>	
Responsible organisation:	Municipality, Kóspallag	

Community Composting in th	e Palotavárosi Community Garden Székesfehérvár
Location:	Székesfehérvár
Short summary:	Community composting is linked to the activities of the community garden. The Palotaváros Community Garden covers an area of 800 m <sup>2</sup> cultivated land. 22 plots have been developed so far and the garden is owned by the Municipality of Székesfehérvár. The garden has developed a very strong community life and the processing and composting of organic waste has been a goal of the community from the very beginning. The Gaja Environmental Protection Association helps the community with composting, while the Székesfehérvár Garden Friendly Association is more involved in the running of the garden. 100% of the compost produced during composting is returned
Responsible organisation:	to the beds. Székesfehérvár Garden Friends Association, Gaja Environmental Association





KDRIU

This is just one of many examples, in Hungary community gardens and the associated community composting are very widespread and work well.

Title: Community Compost Point Database		
Source:	https://humusz.hu/kozossegi-komposztpontok	
Short summary:	The database was initiated by the Humus Association and contains	
	community compost points registered on a voluntary basis.	
	Currently, the database is mainly dominated by sites in Budapest, but is also	
	open for registration of rural sites.	
Responsible organisation:	Humus Association	

Title: Compost festival to promote composting		
Location	National coverage	
Short summary:	The Compost Festival is an annual initiative of the Humus Association. It aims to promote composting and protect nature and the environment. In the last call (2023), the Humus Association and the Galgament People's School addressed their call to schools, NGOs and communities. The applicant communities had to carry out activities related to composting during a given period. The results of the 2023 Compostfest in numbers: in 2023, 49 entries were	
Responsible organisation:	received from classes, nursery schools, day-care centres and NGOs. 1,683 people took part in the activities. Among them, 2 nurseries (with 4 nursery groups), 2 NGOs, 7 schools (full school or class) and 15 kindergartens (25 groups). Humus Association	

Title: Compost delivery service		
Location	Szeged	
Short summary:	In 2022, a unique compost delivery service was launched in Hungary, initiated by two young people from Szeged. Within the framework of the service, the volunteer couriers go to the homes and collect the compostable household green waste and then deliver it to the garden of the Megálló Community House maintained by the Maszk Association. Residents can apply by e-mail for a courier, who will be coordinated by the Stopping Community Centre staff. The success of the initiative is demonstrated by the fact that several composting bins are full and the residents are happy to use the service.	
Responsible organisation:	Mask Association	





	Local Good Practices on Individual Composting
	J
	composting - voluntary placement of compost bins by the public
Location: Short summary:	Local governments of larger municipalities In the city of Veszprém, 200 compost bins were distributed to the population on demand in 2021. The participants of the programme have created a Facebook group where they can share their experiences. The practice is also in operation in several other municipalities in the Central Transdanubian region and throughout the country. Information leaflets on
	how to compost are distributed to the public. This practice is aimed at people
Responsible organisation:	living in garden houses. municipalities and public waste management service providers
	municipancies and public waste management service providers
Title: Composting knowledge	
Source:	https://humusz.hu/komposztalj/
Short summary:	The knowledge base aims to encourage and support individual composting.
	The public will have access to all the information they need about composting (what can and cannot be composted, what to do in different seasons, how to
	handle compost, etc.).
Responsible organisation:	Humus Association
Title: ComPot indoor compos	ster
Location:	national, international expansion
Short summary:	https://www.compotcomposter.com/
	Good practice for people living in condominiums.
	An indoor composting bin made of clay is recommended for people who do
	not have a garden and therefore cannot process organic waste at home. The
	aim was to promote a green approach and to make composting not only a privilege for people living in a garden house. The container can hold about 2
	litres of food waste per week, it requires little time, is non-smelly and has excellent ventilation thanks to the clay container.
	https://tudaton.hu/komposztaljunk-belterben-is/
	COMPOT is an indoor clay composting bin that can be used all year round. Using a compost activator without worms or digging in the ground, you get a perfect finished compost at the end of the process, even after 4-6 months.
Responsible organisation:	Com-Pot Ceramics Ltd.







Title: Urbalive indoor composter with worms		
Location:	national, international expansion	
Short summary:	https://www.compotcomposter.com/	
	https://gardino.hu/products/urbalive-belteri-komposztalo	
	Good practice for people living in condominiums.	
	Indoor composting bin with 3 levels: two levels for green waste and worms,	
	one level for worm tea. The third level should be added after the middle	
	compost tray is full.	
	The indoor composting bin is beautiful and stylish, can be a decorative	
	element in the home, is odourless when used according to the recommended	
	rules, has a separate spout, and has won several awards (including: Red Dot	
	Award 2017 winner, Czeck Grand Design nominee 2016).	
	The humus and worm tea that is formed is organic and chemical-free, so it	
	can be used safely for any plants, vegetables and fruits.	
Responsible organisation:	Distributor: Gardino	







#### Local Good Practices on Centralised/Industrial Composting and Anaerobic Digestion

Title: Industrial composting - Composting plant in Balatonfüred			
Location:	Balatonfüred		
Short summary:	ÉBH Ltd (https://www.ebhkft.hu/) operates the regional composting plant in Balatonfüred in the North Balaton area. Here, green waste collected from residents and municipal green areas is treated on a large scale.		
Responsible organisation:	ÉBH Ltd.		

Address: composting plant Székesfehérvár-Csala		
Location:	Székesfehérvár-Csala	
Short summary:	The composting plant is located in the area of the Székesfehérvár- Csala Pénzverővölgyi Regional Municipal Landfill. The collection area is the service area of the Depónia Nonprofit Ltd., where, in addition to green waste, industrial waste from processing is also composted. All organic waste of agricultural, horticultural, industrial or municipal origin that can be decomposed in a relatively short time and does not contain	
	harmful levels of substances toxic to humans, animals or vegetation is used as feedstock. The compost produced is stored and sold according to market demand.	
Responsible organisation:	Depónia Nonprofit Ltd.	







#### Local Good Practices on Prevention of Organic Waste

Title: park maintenance practices of VKSZ Zrt.	
Location:	Urban areas belonging to VKSZ Zrt.
Short summary:	In its urban park maintenance activities, the VKSZ Zrt. strives to use green waste locally, so it uses mulching mowers in the inner city areas, and uses a branch chipper to make mulch from the clippings, which it spreads around bushes and trees. This also serves to educate the public that they can manage their own garden waste locally.
Responsible organisation:	VKSZ Zrt.

Title: Deep mulching in park maintenance	
Location:	Veszprém
Short summary:	Deep mulching is an effective solution for organic and biological farming on small areas of land. The Csalán Association of Veszprém has been doing this for about 3-4 years in Veszprém, on a plot of land given to them by the municipality, which they cultivate through community gardening, and they have followers in other parts of the city. The basic principle of the practice is that by keeping green waste in place and using it, there is virtually no waste. Everything decomposes and is used locally, and at the same time the cover protects plants and soil from drying out.
Responsible organisation:	Csalán Association

Title: Wastless Programme (presented in Bolzano)	
Location:	National programme; maradeknelkul.hu
Short summary:	<ul> <li>In 2016, the National Food Chain Safety Office launched its No Leftovers programme with the support of the European Union's LIFE programme, which has since become Hungary's national food waste prevention programme. The main aim of the programme is to reduce food waste in Hungary, so: <ul> <li>monitors the amount of food waste generated in Hungarian households, which will become an EU obligation from 2020;</li> <li>pays special attention to the development of children's attitudes, and therefore runs a broad educational programme in which teachers are the main partners;</li> <li>helps households to reduce food waste with awareness-raising and motivational messages, practical ideas and useful knowledge;</li> <li>collect and promote good practices on food waste prevention for all actors in the food chain;</li> <li>collaborate with other national and international programmes on food waste.</li> </ul> </li> </ul>
Responsible organisation:	NÉBIH
Title: Munch App (presented	
Location: Short summary:	National coverage, international expansion 1/3 of the food produced is not eaten. Munch offers a simple solution to make food production more sustainable environmentally, socially and







economically. Munch is a platform through which restaurants and shops sell unsold, but good quality food at a discount. The App has been operational since 2020, since then around one million portions of food have been saved and around €300 million in Munch savings. Munchok are food packages that can be purchased with a 40-60% discount.

In the app, buyers and sellers can register and find the munchies geographically closest to the consumer on demand. Munch

Responsible organisation:





Local Good Practices on Regulation for Composting         Title: 23/2003 (XII. 29.) KvVM Decree on the treatment of bio-waste and technical requirements for composting         Scope:       National         Short summary:       The scope of the Regulation covers untreated and treated bio-waste, stabilised bio-waste and activities involving the treatment of bio-waste for agricultural, forestry and horticultural use or the establishment, construction and operation of a bio-waste treatment plant.         The Regulation defines separately community composting, on-site composting and anaerobic biodegradation. It provides for the treatment of residual waste, known as stabilisation. It lays down the tasks of the waste manager and the procedures for the waste treatment permit process.         Responsible organisation:       KVVM         Title: Government Decree 559/2023 (XII.14) on activities to prevent the formation of biodegradable waste, detailed rules for waste management activities related to biodegradable waste and rules for the cass of the waste         Scope:       National         The scope of the Regulation covers:       a) to prevent the generation of biodegradable waste, b) biodegradable waste, c) stabilised waste, d) mixed waste, d) on-site composting, h) the ancillary materials that may be used for biogas production; and n) the end of biodegradable waste status covers.			
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Responsible organisation:       KVVM         Title: Government Decree 559/2023 (XII.14) on activities to prevent the formation of biodegradable waste, detailed rules for waste management activities related to biodegradable waste and rules for the classification of compost produced from bio-waste.         Scope:       National         Short summary:       The scope of the Regulation covers: <ul> <li>a) to prevent the generation of biodegradable waste,</li> <li>b) biodegradable waste,</li> <li>c) stabilised waste,</li> <li>d) mixed waste,</li> <li>d) mixed waste,</li> <li>d) mixed waste,</li> <li>f) compost,</li> <li>(g) home and community composting,</li> <li>h) on-site composting,</li> <li>(i) compostable biomass,</li> <li>(j) the ancillary materials that may be used for composting on the site,</li> <li>k) stabilisation,</li> <li>biogas production,</li> <li>(m) the ancillary materials that may be used for biogas production; and</li> <li>n) the end of biodegradable waste status covers.</li> </ul>		The scope of the Regulation covers untreated and treated bio-waste, stabilised bio-waste and activities involving the treatment of bio-waste for agricultural, forestry and horticultural use or the establishment, construction and operation of a bio-waste treatment plant. The Regulation defines separately community composting, on-site composting and anaerobic biodegradation. It provides for the treatment of residual waste, known as stabilisation. It lays down the tasks of the waste	
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#### Local Good Practices on **Training of Master Composters** and **Engagement of Citizens and Organizations of the Rural Areas in Composting**

Titley Training of Monter Compositors	
Title: Training of Master Com	
Location:	Budapest and surroundings
Short summary:	One-day theoretical and practical training.
	Themes of the training courses:
	<ul> <li>What, where, in what, why and how to compost?!?</li> </ul>
	<ul> <li>Compostable and non-compostable materials.</li> </ul>
	<ul> <li>Treatment of kitchen and garden green water.</li> </ul>
	<ul> <li>Demonstration of the use of composting tools and auxiliary materials, fair.</li> </ul>
	<ul> <li>Compost turning, sifting, mixing - practical demonstration. Questions and answers!</li> </ul>
	<ul> <li>Environmentally friendly plant protection.</li> </ul>
	<ul> <li>Theoretical and practical things to know and do about home compost.</li> </ul>
a forward-looking organisation:	Buda Compostmasters for the Environment Ltd., Compost Forum Hungary Association

Title: Training of Master Composters	
Location:	West-Hungary
Short summary:	One-day training.
	Thematics:
	<ul> <li>György Zsombok - biological, chemical and physical basics of composting;</li> </ul>
	<ul> <li>Attila Czumpf - composting in practice;</li> </ul>
	<ul> <li>László Szilágyi: the prospects of the Compost! programme;</li> </ul>
Responsible organisation:	Diving Association







#### Local Good Practices on Good Use and Different Uses of Compost and Digestate-based Products

Title: Probio Zrt. example of compost utilisation	
Location:	Balatonfüred
Short summary:	Probio Zrt. (http://probiort.hu/) uses the compost produced at the regional
	composting plant in Balatonfüred in large quantities for the maintenance of
	green areas.
Responsible organisation:	Probio Zrt.





	Local Good Practices on Smart Composting
Title: Compocity	
Location:	national coverage
Short summary:	For companies committed to sustainable solutions, the multiple award- winning, home-grown CompoBot, which composts and recycles biodegradable waste and food waste from office buildings in an eco-friendly way, is a new addition to the toolbox. An office community of 50 to 100 people can fill the replaceable capsule of the <b>CompoBot</b> waste processing robot in about a week or two. The robot takes fifty litres of organic waste, typically food waste, and turns it into roughly 20 kg of the ecologically valuable CompoMIX, a nutrient essence of humus. <b>CompoBot</b> is currently operating successfully in the offices of seven large companies. The Hungarian startup developer is building on the experience gained from robots already in operation to move to series production.
	<ul> <li>Operational characteristics of the robot: <ul> <li>odour- and noise-free operation,</li> <li>low energy consumption,</li> <li>automated data tracking and image-based compost quality detection,</li> <li>minimal footprint thanks to the environmentally friendly design and recycled materials.</li> </ul> </li> <li>The system itself consists of an indoor smart robot, hardware, an admin interface and an app. It is a complex system of services in a closed loop. The central element is the eco-robot itself, which makes you want to start using it. It greets the user kindly as soon as it is opened and, once use is complete,</li> </ul>
Responsible organisation:	measures the weight of the waste and initiates the appropriate technical steps for perfect composting. The unit analyses what material has been added for composting purposes and feeds the micro-organic culture accordingly. The app is designed to provide feedback on individual performance, making individual environmental awareness a community mission. Compocity Ltd.
Responsible organisation.	Composity Etd.







# 4. Inventory of sites, facilities, areas and instruments to be improved thanks to the cooperation

Local Resources to be improved thanks to the cooperation	
Name: Installation of commu	nity composting bins in two urban areas of Veszprém.
Type of resource	<ul> <li>composting plant</li> <li>installation</li> <li>Product</li> <li>potential composting site</li> <li>possible installation</li> <li>potential product</li> <li>Regulation</li> <li>programme</li> <li>Plan</li> <li>Other:</li></ul>
A brief description of the need for the repair: Responsible organisation:	The aim of the action is: to educate the population, to collect, process and use bio-waste (garden, kitchen) separately, and to establish the long-term operation of community composting in Veszprém. VKSZ Zrt., Pannon University, CTRIA

Local Resources to be improved thanks to the cooperation	
Name: iImplementation of Co	pmpostfest 2024
Type of resource	<ul> <li>composting plant</li> <li>installation</li> <li>Product</li> <li>potential composting site</li> <li>possible installation</li> <li>potential product</li> <li>Regulation</li> <li>programme</li> <li>Plan</li> <li>Other:</li> </ul>
A brief description of the need for the repair:	The aim is to implement the Compostfest 2024 programme in Hungary in autumn 2024.
Responsible organisation:	Humus Association, CTRIA







Local Resources to be improved thanks to the cooperation	
Name: Development and imp	elementation of Training of Master Composters
Type of resource	<ul> <li>composting plant</li> <li>installation</li> <li>Product</li> <li>potential composting site</li> <li>possible installation</li> <li>potential product</li> <li>Regulation</li> <li>programme</li> <li>Plan</li> <li>Other: training</li> </ul>
A brief description of the need for the repair:	In Hungary, Training of Mastre Composters is currently provided in half-day, one-day courses. There is a need for a more organised framework and for the preparation of training material, which would be implemented by incorporating the experience of international examples.
Responsible organisation:	VKSZ Zrt., Pannon University, Humus Association, CTRIA







# **5.** Conclusions

In Hungary, a new era for the collection and use of organ waste will start on 1 January 2024. A new Government Decree 559/2023 (XII.14) on activities to prevent the formation of biodegradable waste, detailed rules for waste management activities related to biodegradable waste and rules for the classification of compost produced from bio-waste entered into force. With this Regulation, Hungary aims to comply with the EU Waste Framework Directive, which requires the separate collection of household bio-waste from 31 December 2023. However, the Regulation leaves some important areas to be addressed.

The focus of the new regulation is on the collection of bio-waste from the public, but the requirement is only voluntary. Currently, the regulation only applies to private individuals, so catering establishments and markets are subject to different requirements. This asymmetry poses a major challenge to the effectiveness of the overall system, as all stakeholders would need to be involved if bio-waste management is to be successful.

Implementation of the new regulation has been slow and is happening in few places this year. This may mean that composting does not become an accepted practice for everyone, and participation levels may vary due to the voluntary nature of the practice. It would be important for the government to actively encourage the public and businesses to participate.

Unfortunately, in rural areas, there is no practical implementation yet and no organised collection will start in 2024. The new regulation does not give clear guidance on how bio-waste should be managed here. Individual and community composting are the main options, but it is essential to work out the details quickly and efficiently for people in rural areas.

At the same time, there are examples of successful composting projects in Hungary, where civil initiatives have been set up. These local initiatives have considerable potential and can show the way for other regions and cities. Good practices with a local scope can help governments to develop new plans and implement them successfully.

Overall, both the government and the public need to engage in an active dialogue and cooperation to make composting a truly sustainable and widespread practice in Hungary.



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The new government regulation is a good starting point, but more work is needed to ensure wider acceptance and effectiveness of composting.

#### Broader obligations towards businesses:

The new government regulation only encourages the collection of bio-waste from the general public, which is a shortcoming for the food industry and catering establishments, which are subject to different rules. To create a truly sustainable composting system, these obligations need to be harmonised. It is important to establish a uniform legal framework. In addition, a system of subsidies could be introduced to encourage these businesses (cafés, restaurants, catering outlets, etc.) to adopt sustainable practices, such as the use of compostable packaging materials.

#### Inclusion of rural areas:

The specific characteristics of rural areas make a flexible approach particularly important. The regulation should include specific guidelines for rural communities, allowing them to compost individually, adapted to local conditions and infrastructure. In its absence, a dialogue with village and rural municipalities is needed to find appropriate solutions.

#### Knowledge formation and education:

Proper information and education of the public is essential for the success of the new regulation. Education campaigns should be organised, not only on composting techniques, but also to highlight the ecological benefits and the positive impact on the environment. Schools and local communities should be supported to develop educational programmes that involve students and the local population.

#### Supporting research and innovation:

The government should encourage research and innovation in composting, and support researchers and entrepreneurs who develop sustainable technologies and solutions for bio-waste management. Grant schemes and research funds can contribute to these efforts, helping to bring new and efficient composting methods to the market.