



The household bio-waste management: a case study of Latvia

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EU LIFE Integrated Project "Waste To Resources Latvia - boosting regional sustainability and circularity"



WMAL role in the project

- **Implementation:**

C8. Demonstration of solutions for the reduction of biological and food waste and improving food waste measurements

C8.1. Technological solutions for decentralized management of biological waste

- **Participation in activities:**

C6.1 Enabling regional sustainability through circular economy roadmaps and capacity building (MEPRD)

C6.3 Improving efficiency of economic instruments and Green Public Procurement for waste management and circularity (Baltic Coasts)

C6.4 Development of regional education and competence centres for circular economy and sharing of best practices (ZAAO)

C6.5 Development of tools for implementation of a circular economy model at the local level (CM)

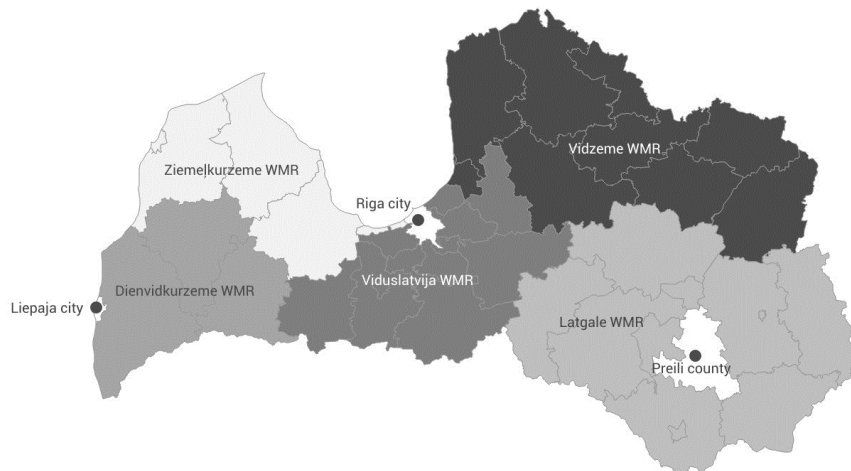
C8. Demonstration of solutions for the reduction of biological and food waste and improving food waste measurements

- A system for separate collection and management of bio-waste, including food waste established and introduced in the selected pilot areas of 4 municipalities in Latvia;
- Recommendations for accounting and integration of bio-waste recycling results from home composting in official waste statistics

Low population density – 30.9 capita/km² – a challenge for Latvia.

Home composting and other small local BW composting technologies in the regions is one of the options to reduce the amount of BW in the mixed MSW stream.

Materials and methods



	Bio-waste collection from multi-apartment house	Home composting	
Territory	Riga city	Liepaja city	Preili county
Inhabitants (in 2021)	605 thousand	68 thousand	17 thousand
Total area	304 km ²	60,37 km ²	1 413 km ²
Household disposable income for person (in 2021)	791 euro/per month	613 euro/per month	504 euro/per month

- 67,2% live in apartment buildings
- 32,5% live in individual houses

Materials and methods: Bio-waste collection from multi-apartment house

- 100 apartments – individual approach to each apartment
- Bio-containers (120 l, 240 l) (door-to-door collection system; once per week)
- Bio-bins (6 l, 10 l) – for each apartment
- Weighted, caunted



Materials and methods: Home composting

- Pilot project participants: 32 households in Preiļi county; 60 in Liepāja city;
- Composting containers (1000 l and 1200 l);
- Each household kept a diary of generated FW amount throughout the year from January 2023 to December 2023, and generated garden waste (GW) in the summer season - from April 2023 to October 2023.
- The household BW data accounting takes place in volumetric units (litres), but FW data converting to mass units (kg) done at density 350 kg/m³.



Results

	Riga city apartments	Liepāja city	Preiļi county
Generation of food waste, kg/person/month	3,54-4,15	3,3-3,36	2,73-3,04
Generation of food waste, kg/person/year	43-50	40	33-37
Size of household (household persons), Average	3	4	3
Size of backyard garden (m ²)	-	Average 933 Median 550	Average 1203 Median 400

Amount of impurities (plastic bags) in the mass is 0-0.1% (as received).



Conclusions

- Generation of FW dependent on the household's lifestyle and consumption, eating habits and seasonality. If the family works and eats outside of home, then the amount of FW is minimal, but if the family eats a lot of vegetables, fruits, then the amount of FW is greater, mainly because of avoidable part of FW.
- The first results of the project show that the amount of food waste generated per capita per year is at least half less than that indicated in the EU statistics – 107 kg per capita.

Conclusions

- In order to involve the population in the extensive collection of FW, the active action of house managers is necessary.
- It is necessary to allocate funds for the purchase of small kitchen bins from the funds for home management, and to supplement the existing waste management contracts or conclude new contracts with residents, which determine the involvement of residents in the separate collection of FW.
- Due to the national diversity of the residents, the information must be illustrative both on the kitchen bins and on the bio-waste collection containers.
- For disposal of bio-waste, waste management companies must purchase specialized containers. It is necessary to monitor the replacement of containers and their cleanliness. Regular washing of containers is mandatory.

Conclusions

- The residents are interested in the home composting, and the main motivation for home composting were reducing the costs of mixed MSW management.
- The introducing of home composting requires active support from project implementers - both, increasing residents' environmental awareness and giving financial value for starting home composting (e.g. compost container).
- Individual attitude towards each of the participants promotes better understanding and involvement in the project.

Thank You very much!

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