



REGIONAL ACTION PLAN RIGA TECHNICAL UNIVERSITY, LATVIA



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Part I – General information

Project: OptiWaMag: Optimization of waste management in urban spaces and in households_____
Partner organization: _____Riga Technical University_____
Other partner organisations involved (if relevant): _____not relevant_____
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Part II – Policy context

2.1 Policy instrument – National Waste Management Plan 2021-2028

The objective of the OptiWaMag project is to "... improve Structural Funds' policies and implementation related to waste management and enhance regional and interregional ecosystems. OptiWaMag recognises that effective, policy shaping outcomes require enhanced cooperation between involved stakeholders. The policy project will thus incorporate interregional collaboration, involving a wide range of expert stakeholders, which comprises exchange of Good practices, mutual learning, peer assessment, knowledge transfer, targeted coaching and collective, co-designed policy development. It will deliver its results through interlinked project activities and outputs during 3 sequential steps: 1) Identification and Analysis; 2) Interregional Mutual Learning; 3) Knowledge Transfer and Action Planning. Steps 1 and 3 also include assessments of policy enhancement and learning performance. Wide dissemination of Good practices and lessons are the backbone of OptiWaMag. The primary outputs include: - The project self, peer and expert assessment tools and findings focused on regions' strengths, weaknesses, policy priorities and policy enhancements - A Framework Strategy for developing evidence based and co-designed policies, programmes and implementation methods and for identifying the best method to improve policy instruments; - 6 Regional Action Plans (enhanced by the Framework Strategy, pre and interim self-assessments and Advisory Board case study) to enhance the implementation of regional policy instruments across Europe."¹

The policy instrument initially tackled by RTU in the framework of the OptiWaMag project was the Operational Program (OP) "Growth and Employment" and, specifically, the investment priority 5.2.: to invest in waste

¹ OptiWaMag Application Form

management area in order to adhere to EU acquis requirements in the environmental area and to support identified needs of member states for investments exceeding the said requirements; preservation and protection of environment and promotion of effective use of resources.

However, considering that all resources under the above-mentioned investment priority have been already allocated, the policy instrument (OP) was replaced by the **National Waste Management Plan for 2021–2028 (NWMP)**. The NWMP has been developed in accordance with the requirements of Section 9 of the Waste Management Law and in accordance with the National Development Plan of Latvia for 2021–2027, as well as considering the priorities set in the Operational Programme for 2021–2027. The plan will replace the National Waste Management Plan for 2013–2020 and will create synergy and complement the measures included in the Action Plan for the transition to a circular economy for 2020–2027. The **Ministry of Environmental Protection and Regional Development (hereinafter – the Ministry)** is the institution responsible for the implementation of waste management policy in Latvia.

Linking the plan with other policy planning documents: National Development Plan for 2021–2027; Environmental Policy Guidelines for 2021–2027; Action Plan for the Transition to a Circular Economy for 2020–2027; National Energy and Climate Plan for 2021–2030; Latvian Bio-economy Strategy 2030; Guidelines for the Development of Science, Technology and Innovation for 2014–2020; National Industrial Policy Guidelines 2014–2020; Latvian Construction Industry Development Strategy for 2017–2024; OP of the European Union Structural Funds and Cohesion Fund for the 2021–2027 programming period.

The NWMP shall cover the following priority waste types and streams:

- municipal waste, including domestic hazardous waste;
- biodegradable waste;
- food waste;
- used packaging, disposable plastic products;
- waste of environmentally harmful goods (used batteries and accumulators, waste oil products, waste electrical and electronic equipment, used tires);
- construction and demolition waste;
- textile waste;
- furniture;
- hazardous waste, waste equipment containing polychlorinated biphenyls and polychlorinated terphenyls, waste from medical institutions and waste generated by veterinary clinics;
- industrial waste;
- end-of-life vehicles to which Section 3, Paragraph one¹⁸ of the End-of-Life Vehicle Management Law applies.

The NWMP complies with RIS3 specialization areas and growth priorities. The implementation of the measures envisaged in the project will be based on the use of smart technology approach. Latvia is suitable for innovative and sustainable municipal waste management; it has a well-educated population, the ability to switch to a new household waste management model, the ability to create waste recycling methods, the ability to create innovative packaging types and production businesses.

The new NWMP will force everyone to significantly change their attitude towards municipal waste, increasing not only sorting but also promoting its recycling in order to minimise the amount of waste disposed in landfills. This will be the basis on which both the necessary funding will be based and the tax policy – natural resource tax rates².

² Interview of Deputy State Secretary of the Ministry of Environmental Protection and Regional Development Alda Ozola on 30 June 2020: <https://www.db.lv/zinas/atkritumi-bus-japarstrada-vairak-497232>

2.2. Background situation in the waste management sector of Latvia

In general, household waste produced in Latvia is not sorted in the place where it is generated. In majority of cases the municipal waste generated by inhabitants of multi-apartment residential buildings is collected in one container for the whole building, the payment for waste management is determined in proportion to the number of apartments in the building or their area. In Latvia, there are 39 517 multi-apartment residential buildings, where 73 % of the population lives. Partial sorting of household waste takes place at special collection points where paper, plastic, metal, glass have been sorted from the waste for the benefit of recycling companies. Other part of the waste is disposed. Part of the waste generated by households pollutes the environment – public waters, forests and recreation areas. In order to use waste as a resource and in a close proximity to the place where it is generated to reduce the environmental pollution associated with transportation of waste, it is necessary to increase recycling capacity, develop innovative methods and establish new waste recycling companies. In order to implement the objective of the OptiWaMag project, i.e., to improve the regional policy for innovative and sustainable municipal waste management in Latvia, the model of municipal waste management should be transformed.

The waste management of Latvia is based on the Waste Management Law and Regulations of the Cabinet of Ministers, as well as the EU directives. The institution responsible for conducting and implementing the waste management policy in Latvia is the Ministry, which is also the Managing Authority for the Interreg Europe programme in Latvia.

According to the Organisation for Economic Cooperation and Development (OECD)³ and EC's report on Latvia⁴, Latvia needs to increase waste recycling, improve the efficiency of separate waste collection and subsequent sorting, and promote the creation of a circular economy to meet the waste directives⁵ to a certain extent and within a specified period and achieve objectives set out in the legislation⁶. Due to insufficient recycling capacity, there is a risk that Latvia may not achieve the recycling targets set for 2020, as well as for 2025–2035 for several waste streams, as well as ensure the amount of municipal waste disposed in landfills in the amount of no more than 10%. It is also necessary to ensure the requirements of the EU Directive 2018/851⁷ regarding the separate collection of biodegradables (from 2023 at the latest), textile (from 2025) and municipal hazardous waste (from 2025).⁸

The introduction of the European Green Deal and the Circular Economy Package in Latvia should promote the introduction of circulation based eco-efficient technologies and eco-innovations in production, the introduction of eco-design principles in the production of goods and materials, reducing packaging capacity and increasing recyclability and durability (reuse), and material flow accounting system development. Within the framework of the OP, the implementation of the principles of circular economy is planned, including waste prevention measures, support for waste recycling, recovery, including biogas production, and the development of a separate waste collection system, with an increased focus on biodegradable waste, including the recycling of sewage sludge as a nutrient. It is also planned to improve the data quality of waste management activities, to develop material flow accounting.⁹

Latvia has not fully accomplished all the objectives of the previous planning period (2014–2020) in the field of waste management; therefore, certain measures to achieve these objectives must be started already in the new planning period (2021-2027). In the waste management sector, the waste management objectives specified in regulatory enactments have not been achieved. The total amount of municipal waste recycling in 2018 reached only 25.3%, the target for 2020 is 50%. The reduction of the amount of disposed biodegradable waste was

³ <https://ieej.lv/4FMNi>

⁴ <https://ieej.lv/rOMVW>

⁵ <https://ieej.lv/ba5UH>, <https://ieej.lv/xFRsL>, <https://ieej.lv/kr2cx>, <https://ieej.lv/vjShx>

⁶ <https://likumi.lv/doc.php?id=221378>

⁷ <https://ieej.lv/ba5UH>

⁸ 2.2.2. Specific objective: "Promoting the transition to a circular economy"

⁹ 2.2.3. Specific objective: "Improving nature protection and biodiversity, green infrastructure, especially in urban areas, and reducing pollution"

significantly delayed – in 2015, 57.1% of this type of waste was disposed (target for 2013 was 50%, target for 2020 – 35%)¹⁰. Investments in the sector can also contribute to the reduction of GHG emissions; in 2017, waste management accounted for 5% of total GHG emissions.¹¹

According to the EU directives Latvia's waste management targets¹² are:

- Recycling and reuse of waste: 2020 – 50%; 55% - 2025; 60% - 2030; 65% - 2035;
- Reducing the amount of waste landfilled: >10% in 2035;
- Introducing the collection of sorted bio-waste by 2023;
- Introducing the collection of sorted textiles and hazardous household waste from 2025;
- Introducing of the collection of plastic bottles: 77% in 2025 and 90% in 2030;
- Implementation of the deposit system for packaging of non-alcoholic beverages, starting from 2022.

The OP 2014-2020 has foreseen resource mainly for recycling and collection of sorted waste. During the next EU funds programming period there will be resources foreseen for introducing the circular economy in Latvia. The importance of introducing the circular economy, reducing of the amount of waste in its storage landfills, as well as the importance of increasing recycling of waste is being stressed by the National Development Plan of Latvia 2021-2027.

According to the Latvian National Development Plan the action is needed to improve waste sorting and recycling, and to develop a deposit system for used packaging. Recycling will ensure economic diversification and increase the efficiency of use of each resource unit. Materials reuse, the reduction of waste and a waste-free lifestyle will reduce waste and environmental pollution.¹³



Figure 1. Planned division of five Waste Management Regions in Latvia

Therefore, a comprehensive introduction of the preconditions of the circular economy is planned in Latvia by the NWMP. It is planned to leave 5 landfills instead of 10, purposefully investing in the development of regional waste

¹⁰ EC Environmental Policy Implementation Report on Latvia and 2017, 2018 and 2019 Reports on the Implementation of Structural Reforms in Latvia

¹¹ <https://www.esfondi.lv/planosana-1>

¹² Presentation of Rudīte Vesere, "A New State Plan for Waste Management of Latvia – New Challenges" at the Dienas Bizness (Daily Business newspaper) conference on 29 April 2020

¹³ National Development Plan of Latvia for 2021-2027

management (See Figure 1) centres. The goal is to have only 10% of waste disposed in landfills by 2035. This is a challenge for Latvia; additionally, it is necessary to invest in the system. 43% of waste is currently landfilled. From 2023, the collection of sorted waste must be ensured in each municipality; in 2019 it was provided by 30% of municipalities. Waste management organisations, in turn, need to prepare for the collection and recycling of biodegradable waste. At present, capacity is insufficient. There are already problems with the sale of technical compost, because its price is not low. Packaging that is not used for recycling is a problem. There are bans on packaging materials, and alternative materials are being developed. Raising the tax on natural resources is one way of restricting the production and use of environmentally unfriendly packaging. The new NWMP provides for a packaging prevention program. However, half of the waste that ends up in landfills is biodegradable, mostly discarded food, which requires further action.¹⁴

2.3. Main findings and conclusions of the OptiWaMag research work

In the frame of the OptiWaMag project the stakeholders' survey was launched in the beginning of 2020 and distributed to around 40 Latvian waste management experts (i.e. opinion leaders), including representatives of the Ministry, municipalities, largest waste management operators, NGOs and others. Until the end of March 2020, 36 respondents provided full answers to all survey questions. Most of survey respondents represent state and municipal authorities (30%), waste management companies, NGOs (16,7), education and research (10%), as well as public (municipal services, i.e. water management, heat supply, and waste management – 10%), individual experts (16,7%) and others. The survey was completed by waste management experts representing various industries, such as waste management; real estate management; environment protection; legal services; forestry, incl. certification; healthcare; environmental permits and controls; trade; countryside tourism; ports and others.

The survey results indicate that all participants are sufficiently competent and knowledgeable in their field of waste management. It can be concluded by the extensive comments in the survey, which include issues, topicalities, proposals and challenges in the field of waste management. The results of survey show that the waste management system in different municipalities of Latvia is being rated from 1 (*not satisfied at all*) to 3 (*average*)¹⁵, which could be explained by differences of the implementation of waste management in Latvian regions and municipalities. At the same time, according to survey results and the Spider diagram (Figure 2) the waste collection and home disposal was mentioned as one of strengths of the Latvian waste management policy. All respondents emphasised crucial problems and weaknesses, current strengths, actual needs and future challenges of the existing waste management system.

For a detailed analysis of the survey result (strengths and weaknesses) from the self-assessment, RTU has developed:

- Two spider diagrams: one presenting the needs (interpreted as the priority interventions) and the other one presenting the strengths of the regions integrating the Interreg OptiWaMag project;
- The SWOT analysis, based on the results of survey, as well as analysis of policy documents and literature.

2.3.1. Self-assessment results

The OptiWaMag research results and the stakeholders' survey allow to draw conclusions about the waste management system of Latvia as a whole, as well as waste management operation in individual municipalities. Research results helped to reveal, which are the main strengths and weaknesses, as well as priorities of the waste management system of Latvia.

¹⁴ There will be many challenges in the waste management plan. 19 July 2020. Article: <http://edruva.lv/atkritumu-apsaimniekosanas-plana-bus-daudz-izaicinajumu/>

¹⁵ Using the system of 5 scores rating starting from 1 (not satisfied at all) and ending with 5 (fully satisfied)

According to experts' opinion the top strength of the Latvian waste management system (38.3%) is the Waste collection and home disposal followed by the Waste valorisation/Final treatment (26,1 %) as the second strongest feature and the Economic incentives or sanctions (12,2 %) placed on the third place, and the fourth strengths – Education & Awareness (public engagement) (10,4 %) (see Figure 2).

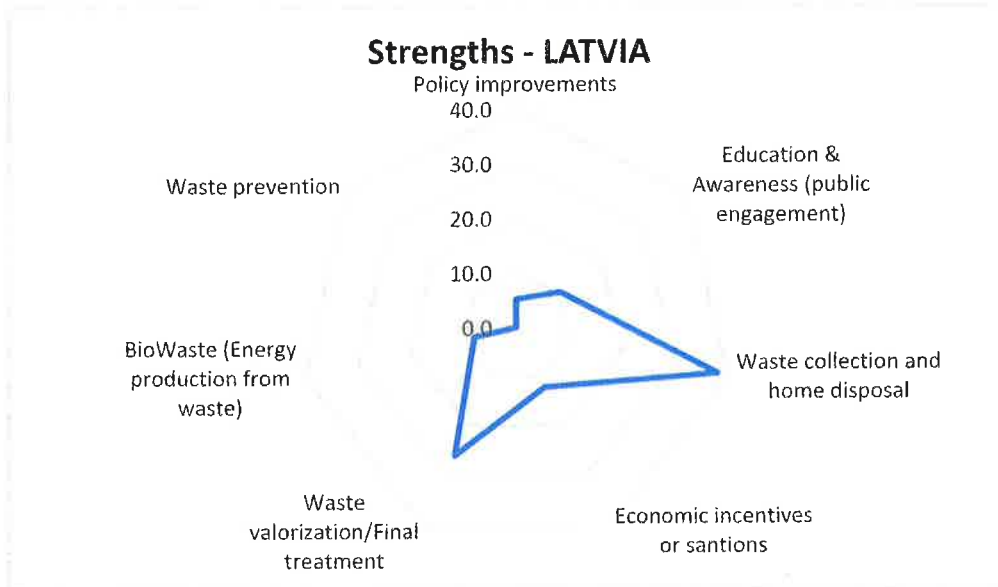


Figure 2. Strengths – Latvia

Considering areas of priority interventions of the Latvian waste management system, the Waste collection and home disposal (29,7%) has been recognized as a the most important area of priority interventions followed by the Policy improvements (16,8 %) and the Waste valorisation/Final treatment (15,8 %) as the third area of priority interventions, and the BioWaste (11,9 %) as the fourth area of priority interventions (see Figure 3).

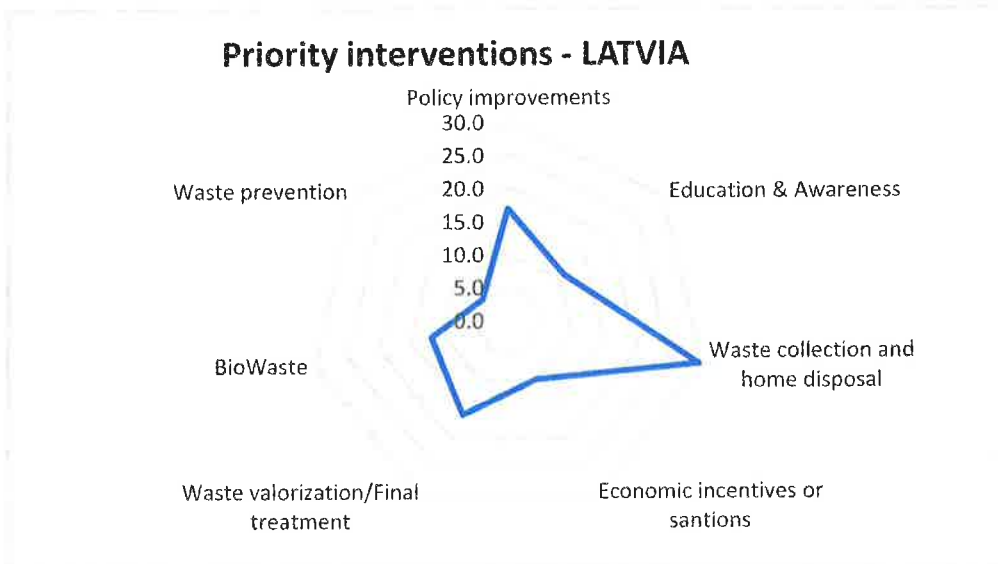


Figure 3. Priorities (the needs) – Latvia

During discussions with Latvian stakeholders and according to the self-assessment results the top weaknesses/challenges of the waste management system are 1) Practicality of the domestic waste sorting system; 2) Sorting and reuse – valorisation process of different types of waste; 3) Public involvement in waste sorting; 4) Financial incentives. Survey results were verified by the local stakeholders, including the Managing Authority, approving that main policy intervention areas for Latvia are: 1) waste prevention; 2) economic incentives or sanctions; 3) education and awareness (public engagement).

2.3.2. Results of the SWOT analysis

This SWOT analysis reflected in Table 1 is based on the results of survey, as well as analysis of policy documents and literature.

Table 1. SWOT Analysis of the Implementation of Latvia's Waste Management Policy

<p>Strengths</p> <ol style="list-style-type: none"> 1. In general, a well-functioning waste management system. 2. Successful examples of waste recycling. 3. Successful examples of bio-waste collection and recycling. 4. A new comprehensive NWMP 2021–2028. 5. Good and active cooperation of the policy maker (Ministry) with entrepreneurs and NGOs in the implementation of environmental policy measures. 	<p>Weaknesses</p> <ol style="list-style-type: none"> 1. Insufficient recycling capacity and the efficiency of separate waste collection, and the consequent quality of sorting, which also hinders the creation of a circular economy. 2. Insufficient activity and low priority in the field of waste prevention. 3. Too much landfilled waste 4. Separate waste collection for biodegradable, textile and hazardous municipal waste has not been provided yet. 5. Introduction of a deposit system is delayed. 6. Weak economic incentives and sanctions. 7. Municipalities are poorly involved in the development and implementation of regional waste management plans.
<p>Opportunities</p> <ol style="list-style-type: none"> 1. To ensure effective implementation of the NWMP 2021–2028, which would allow eliminating the existing problems. 2. To promote the creation of the basis of the circular economy and the implementation of the principles. 3. To improve the quality of data on waste management activities. 4. To encourage investment in the sector, also contributing to the reduction of GHG emissions. 5. To promote public awareness and education in order to make progress in the field of waste sorting and prevention. 	<p>Threats</p> <ol style="list-style-type: none"> 1. Significant increase in management costs, which is not supported by the public. 2. It is not possible to limit excessive packaging that is not used for recycling 3. Competition and waste lobbying hinder the implementation of necessary policy reforms and measures. 4. Due to the lack of funds, it is not possible to implement all the planned goals of the NWMP 2021–2028 5. Failure to implement the necessary reforms to introduce “green taxes”.

The list of the identified problems and possible solutions of the waste management system has been reviewed by the Ministry and was served as a good basis for further discussion about improvements of the waste management system in Latvia, as well as have use for policy makers.

Separate collection, recycling, and reuse of the waste play an important role for ensuring availability and sufficiency are one of the basically obstacles for the circular economy of resources, which is a priority of the European Union for the nearest future. To this end, several crucial long-term choices now need to be made for improving the waste management and recycling in Latvia. Recently Latvia has initiated the deposit system and started the process of implementing it. The results of the OptiWaMag project will be a great addition and a source for new ideas for introducing new solutions and taking over Good practices from partner countries to promote the development of an efficient national and municipal waste management systems in Latvia.

2.4. Exchange of experience and Good practices

2.4.1. Exchange of experience during Phase 1

The self-assessment research has been the main activity during Phase 1 and thus discussed at several of the OptiWaMag interregional meetings. The results have been presented in reports and meeting with stakeholders. From the exchange of experience with the other partners that took place on 4th December, 2020, it has been identified that the RTU can learn the most from the partners in Italy, Sweden and Greece. Latvia's challenges related to adoption of circular economy principles have some significant similarities and similar challenges are being faced.

RTU participated in the 5th Interregional Partner Meeting stream on 7th and 8th of April 2021, which included session of interregional mutual learning and exchange of Good practices with the participation of project partners and involved stakeholders. RTU invited 2 representatives from the Managing Authority – the Ministry. RTU has identified 3 Good practices examples implemented in Latvia. Additionally, for more deeper insight in the policy learning and knowledge transfer of the existing waste management approaches in each partner region, the Interregional OptiWaMag project partners' extra meeting – Seminar on Good practices took place on May 27, 2021. This Seminar was attended by Good practices holders which presented their Good practices and answered participants' questions. In the case of Latvia two Good practices were presented by professional experts of the waste management company Ltd ZAOO: 1. *Deep containers' sites*, by Mr. Martins Vigants, Director of the Service Department of the Ltd. ZAOO and 2. *Park of nature and education URDA*, by Mrs. Arita Smalka Borisovica, Education specialist of the Ltd ZAOO. The third Good practice *Environmental SOS* was presented by the RTU OptiWaMag project expert Dr. Rūta Bendere. All partners involved their stakeholders both, in the 5th Interregional Partner Meeting and Good practices Seminar, as well as presented and discussed Good practices in relation to the thematical topic. Good practices were previously selected by each partner's region during their local stakeholders' meetings (in the Latvian case – 6 July 2020 and on 27 January 2021). Some of stakeholders also participated in the OptiWaMag online meetings to provide a deeper insight on the Good practice related topics and answer questions of other attendees.

Regarding the Good practices, the RTU has found that practices relating to innovative deposit systems and waste reduction through reuse activities are the most inspiring for Latvia region, such as the Good practice from Italy "Change the Ending", "Smart Ecoisle" and "Home composting". From Greece we have learned about the National Waste Management Plan and Regional Waste Management Plan of Thessaly for 2020 to 2030, which both have a lot of similar priorities and problems to tackle as Latvia. Also, the Good practice on solid waste management in Thessaly could be very useful for learning for Latvia, as well as Good practices of Portugal: "JUNTA" and "Lixo Sustentavel" on waste sorting and home composting. In addition, Swedish Good practices on food waste collection from households through separate bag (recycled) collection and reuse of products through collection at recycling centres were also considered as useful for interregional learning. In the case of Sweden, introduction of both Good practices is very much related to the degree of autonomy and specifics of each municipality and, thus, difficult to apply in a case of Latvia.

Good practices of the OptiWaMag project from all partner regions were presented to the Latvian stakeholders' group on 26 April 2021 (with the participation of 32 Latvian stakeholders) at the Waste Management Working Group established by the Ministry. During the meeting stakeholders decided that one of the Actions (2) foreseen for the RTU Action Plan should be transferring to Latvia the Italian Good practice "Change the Ending" proposed by the Casalgrande Municipality. Also, stakeholders approved the idea of preparing the Pilot action by the RTU for transferring to Latvia this Good practice, which would involve further the exploration of the Italian experience and features of the Good practice "Change the Ending".

2.4.2. Pilot action

As stated in the previous part (2.4.1), Latvian stakeholders approved the development of Pilot action to explore the Italian Good practice "Change the ending" proposed by the OptiWaMag partner – Casalgrande municipality

and test its' features in Latvia which could help local stakeholders to learn how to organize the reuse process for different goods in the right way, as well as promote the involvement of society in the reuse process.

Following the stakeholder's decision, the RTU has developed a new Pilot action – TESLA LAB, dedicated to testing new innovative approaches for applying the circular economy principles to the waste management practices of Latvia by implementing the 3R principle (Reuse, Reduce, Recycle) within the first Reuse Centre of Latvia at the Dienvidkurzeme Region (South Kurzeme Region), following practices and methods used by the Casalgrande Municipality (Good practice "Change the Ending"). This Good practice is an initiative coordinated by the Hera – one of the two large multi utility companies on the territory of Emilia Romagna to promote the activities in the Reuse Centres distributed throughout 74 Councils, which are largely managed by 17 local non-profit organizations. Good practice of the Casalgrande Municipality and shows an excellent example of a reuse centre established by the regional municipality, which has managed to achieve good results in waste reduction; waste stream complexity management, providing economic initiatives, and awareness raising activities. It serves as a good example for Latvia which, according to research results, is lagging in these areas.

It was decided that the main objective of the TESLA LAB for Latvia is to test the viability of reusing household goods – small furniture, electric & electronic appliances to give them second life. This has been decided to organize the testing process in the first Reuse Centre started by the regional waste management company Ltd. "Liepājas RAS" located in the South Kurzeme Region by involving environmentally friendly and innovative methods for reusing and sorting municipal waste.

Implementing the reuse process is important for promoting the circular economy principles and reducing the amount of disposed waste to comply with targets set by the European Commission. Having an opportunity to learn from an interregional experience and test different reuse methods is especially important in this initial stage of starting the reuse process in Latvia, which needs to become an integral part of a well-functioning system of waste sorting as this is foreseen by the RTU selected policy instrument – NWMP.

The TESLA LAB Pilot action proposal was developed by the RTU in June 2021 and implemented starting from 1 September 2021 until 31 January 2022. Accordingly, the implementation of the TESLA LAB Pilot action was included in the Latvian Action Plan as the Action 2 related to the selected policy instrument – NWMP. The Action 2 and the implementation of the TESLA LAB Pilot action is discussed in more detail in the Part 3.2.

Part III – Action Plan and details of the actions envisaged

The final version of the Action Plan including two main Actions and describing activities implemented to achieve objectives of these Actions were presented to the Latvian Stakeholders group on 27 January 2022 (34 participants), including representatives of the Managing Authority and approved for submitting to the OptiWaMag Lead partner and the Interreg Europe programme Joint Secretariat.

3.1. ACTION 1

3.1.1. Action – elaboration of the National Waste Management Plan 2021-2028

The self-assessment and interregional learning in the OptiWaMag project have resulted in fruitful discussions and presentations of regional self-assessment results during OptiWaMag meetings. This has also helped to highlight problems of the existing waste management policy and identify possible solutions for improving the waste management system of Latvia. The research findings and lessons learnt have been regularly presented to and discussed with stakeholders and the Ministry.

Research findings in the form of proposed priorities and recommendations (following results of the self-assessment research) were presented to the Ministry during the stakeholders (23 persons) meeting on July, 2020 to be used for the new NWMP. Stakeholders have agreed on research results and proposed priorities, most of

which were considered in the further work of the Ministry for developing priority directions and actions of the NWMP. RTU has developed recommendations for establishing the system of separate collection of household waste; and starting the reuse process in Latvia. The NWMP 2021-2028 presents a basis for investment objectives and thematic priorities of a new OP (2021-2027).

The recommendations developed by the RTU, agreed with stakeholders and proposed for inclusion in the NWMP Action Plan are: 1) Separate collection of biological waste from 2023; 2) Starting the use of specialised containers near multi-apartment residential buildings and composting containers near single-family houses in Riga city from 2021; 3) Promoting a network of eco-shops for selling weighed goods to reduce the amount of packaging; 4) Reducing the number of plastic bags by replacing them with paper bags; 5) Increasing the number of collection points for sorted packaging (plastic, glass, metal, paper) by providing 200 inhabitants with one such point; 6) Establishing goods repair centres and collection points of usable items in the reuse centres in cities; 7) Supplementing the number of sorted waste collection areas and types of waste to be transferred there; 8) Promoting the collection of electrical & electronic waste (WEEE) from the population.

Participation in the OptiWaMag project provided an opportunity to conduct the self-assessment of the Latvian waste management system that wouldn't have happened otherwise. This was at the origin for helping developing the NWMP by stressing that separate collection, recycling and reuse of the waste play an important role for ensuring availability and sufficiency, which are one of the basically obstacles for the circular economy of resources that is a priority of the European Union for the nearest future. To this end, several crucial long-term choices need to be made for improving the waste management and recycling in Latvia, where interregional learning and exchange with others dealing with similar challenges play a great role.

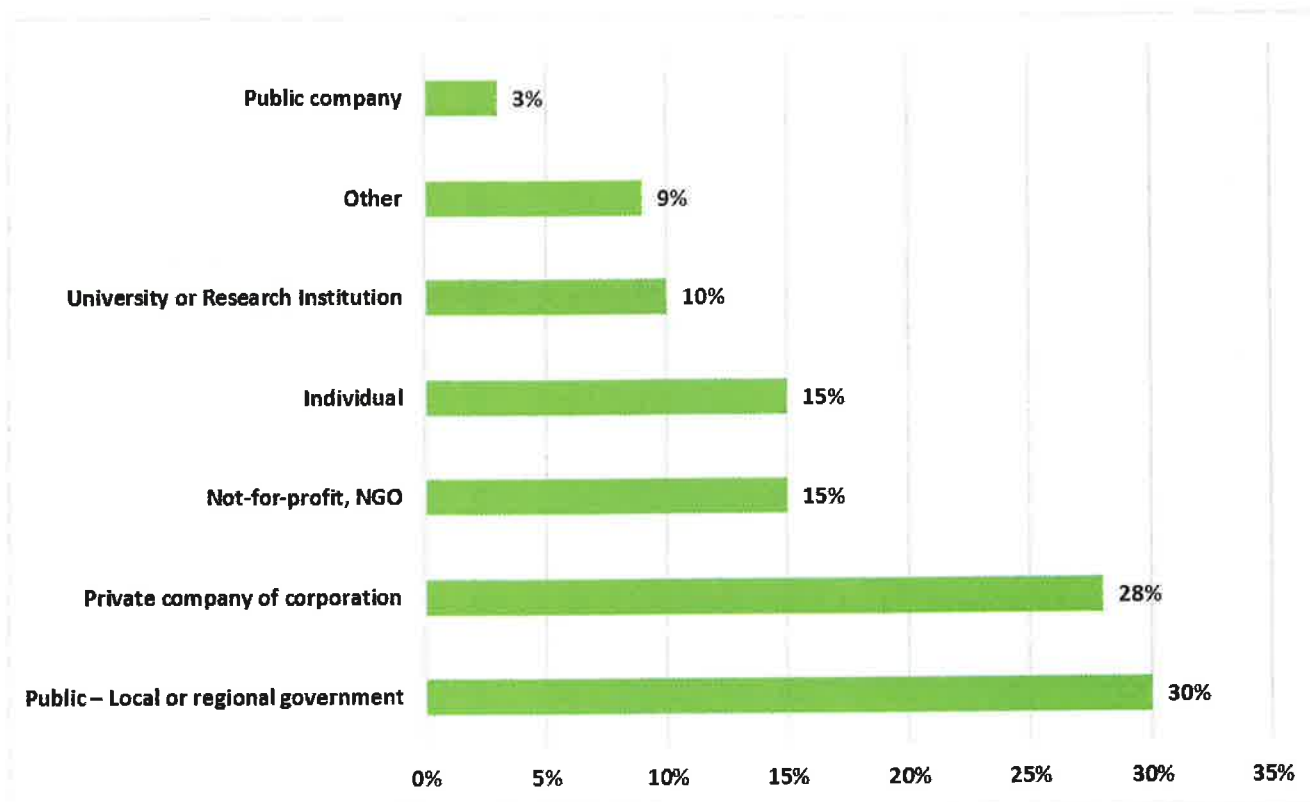
The OptiWaMag project has provided good opportunities for interregional learning that have been used as a source of new ideas for introducing new solutions and taking over Good practices from partner countries focusing on particular elements of developing the separate waste collection systems, waste prevention and the reuse process which could be implemented in the national and municipal waste management systems in Latvia according to the NWMP.

The Action 1 policy change – improvement of the NWMP, has been already achieved during the 1st Phase of the project working closely together with stakeholders and, especially the Ministry (MA) that is responsible for developing and implementing the NWMP. The RTU OptiWaMag team members were involved in all Waste Management Working Group's meetings, as well as hosted several stakeholders' meetings, having an excellent opportunity to reach out to respective professionals and experts on a regular basis.

The adoption of NWMP makes an impact on the whole Latvia as this is a national level planning document that will make an important contribution for the waste management system. The policy change will ensure that separate collection, recycling, and reuse of the waste will play an important role for ensuring availability and sufficiency, which are one of the basically obstacles for the circular economy of resources that is a priority of Latvia and the European Union for the nearest future.

3.1.2. Players involved

The OptiWaMag stakeholders involved in the project implementation process represent different groups of interest and decision-making level. The stakeholders group involves the Ministry, other central and local governmental institutions, public and private companies, NGOs, universities and research institutions, media, and individuals.



Latvian stakeholders were instrumental in discussing self-assessment results and proposals for the NWMP, as well as approving the Action Plan during the meeting on 27 January 2022. However, the most important role was played by the Ministry, which is directly responsible for preparing, adopting and implementing the NWMP.

3.1.3. Timeframe

Table 2. Timeframe of the adoption and planned implementation of the NWMP.

Date	Activity
All year 2020	Preparation and elaboration of the NWMP
January, 2021	Adoption of the NWMP
February 2021 - January, 2022	Discussing the NWMP implementation with stakeholders and possibilities of transferring Good practices from other regions to facilitate the NWMP implementation; discussing ideas for new project proposals; cooperation with regional working groups for developing new Regional Waste Management Plans. Approval of the RTU OptiWaMag Action Plan.
February 2022 – January 2023	New project proposal developed.
February, 2022 until 2028	Monitoring the implementation of the NWMP and evaluating its territorial impact on the basis of the South Kurzeme Region and the Regional Waste Management Plan of the South Kurzeme Region.

3.1.4. Costs

Not relevant

3.1.5. Funding sources

The NWMP 2021-2028 presents a basis for investment objectives and thematic priorities of a new OP (2021-2027). Thus, it is financed from the EU structural funds and the national budget.

3.1.6. Monitoring and evaluation

Considering that the policy change was already achieved during the 1st Phase then during the 2nd Phase the RTU will mainly monitor the implementation of policy change, particularly working in a close cooperation with one of the regional stakeholders – Waste Management Company of Liepāja, which will be further working on developing the Regional Waste Management Plan of the South Kurzeme Region 2023-2027 following the guidelines provided by the NWMP 2021-2028. The RTU will closely monitor this process and the impact of policy change on this region.

Firstly, the development of the Regional Waste Management Plan of the South Kurzeme Region 2023-2027 will be closely monitored to make sure that it follows the NWMP guidelines and takes over lessons from the OptiWaMag Good practice “Change the Ending”.

Secondly, the RTU will also monitor if learning from the Pilot action TESLA LAB and Good practice “Change the Ending” will be considered in the Regional Waste Management Plan of the South Kurzeme Region 2023-2027 and its implementation afterwards. This is further described in the Action 2 in a more detail.

The monitoring and evaluation of the Action Plan will be done in close cooperation with stakeholders by continuing to use the collaboration platform developed by RTU within the OptiWaMagt project.

3.2. ACTION 2

3.2.1. Action – TESLA LAB Pilot action

The Action 2 will mainstream the results of the TESLA LAB Pilot action into the Regional Waste Management Plan of the South Kurzeme Region 2023-2027 which will be developed following the guidelines provided by the targeted Policy instrument - NWMP 2021-2028, as well as implementing the 3R principles from the learning from the Pilot action on the territory of the South Kurzeme Region.

The Pilot action “Circular economy approaches testing reuse laboratories – TESLA LAB” (further – TESLA LAB) was implemented in the framework of the European Union (EU) OptiWaMag project by the Institute of the Civil Engineering and Real Estate Economics (BUNĪI) of the Riga Technical University (RTU) in cooperation with the Italian partner – SERN¹⁶ from 1 September 2021 to 31 January 2022.

This Pilot action TESLA LAB was dedicated to testing new innovative approaches for introducing circular economy principle 3R principle (Reuse, Reduce, Recycle) in the waste management practices of Latvia within the first Reuse centre of Latvia located in the landfill “Kīvītes” of the South Kurzeme Region following practices and methods applied by in the Emilia Romagna Region of Italy, namely the Good practice “Change the Ending”, which shall contribute to the implementation of the policy instrument of Latvia – NWMP 2021-2028. Thus, exploring experience and testing innovative reuse methods applied by Italy will help Latvian stakeholders to learn how to organize the reuse process for different goods in the right way, as well as promote the involvement of society in the reuse process.

The opening event of the Pilot action – TESLA LAB Repair Café was held on 9 October 2021, when the Community Garden located in the Liepāja city was turned into an improvised exchange and repair centre, where an event took place – a discussion “TESLA LAB REPAIR CAFÉ – EXCHANGE AND REPAIR OF THE GOODS”. During the event, the RTU in cooperation with the Waste Management Association of Latvia, Ltd. “Liepājas RAS”, and NGO “Radi Vidi Pats” explained and tried to implement the 3R (Reuse, Reduce, Recycle) principles through various activities. All together 60 people attended the Repair Café event, which was a great success considering the Covid-19 restrictions.

¹⁶ The TESLA LAB Pilot action was initially agreed between the OptiWaMag project partners – Riga Technical University (Latvia) and the Municipality of Casalgrande (Italy). However, after the project started the Italian partner was changed and it was fully implemented in cooperation with the Italian partner SERN (Sweden Emilia Romagna Network), which is also supporting the Casalgrande Municipality with the OptiWaMag project implementation.

Along with the exchange point and repair workshops, the presentation of the project OptiWaMag and the pilot project TESLA LAB took place, as well as a public discussion was held with the aim to reveal the possibilities for reuse of things, benefits and challenges of exchange and repair centres, and the need for such a centre in Liepāja. The public discussion was streamed online. There was also the Press conference organized during the event, where local media representatives from the Kurzeme TV¹⁷ and local newspaper "Kurzemes Vārds"¹⁸ were presented.

During the organized public discussion following conclusions were made:

- ✓ Reuse centres can offer important solutions by improving the quality of life for several groups of the society and well-being of the city;
- ✓ The operation of the reuse centres requires the support of the municipality, such as providing premises for their operation;
- ✓ Awareness-raising activities are important for increasing the awareness about principles and benefits of the circular economy, thus, motivating citizens to find ways to prolong lives of goods by repairing and reusing them;
- ✓ The repair masters were also involved in the discussion, acknowledging that there is a large number of goods on the market that are technically manufactured not to be repaired;
- ✓ The repair masters acknowledged that the repair service can often be more expensive than the purchase of a new product. Therefore, goods that are expensive or impossible to repair generate more and more waste;
- ✓ There is a need for greater producers' responsibility for the quality and reparability of the goods produced.

Following the TESLA LAB Repair Café awareness rising event, the feedback questionnaire or survey was conducted in involving 45 respondents filling in questionnaires in person, as well as through a specially created online link. The survey results confirm that the society is interested in the reuse process and ready to support it. Respondents also agreed that this is important for a local community to have a Reuse centre in Liepāja.

The main conclusions of the survey are:

- ✓ The promotion of the re-use process of important for the society;
- ✓ The most frequently repaired items – electrical goods, footwear, clothing and furniture, instruments and construction related accessories;
- ✓ The most frequently used goods – clothing, footwear, furniture, electronics, decorative objects, children's articles, building materials;
- ✓ There is a necessity for Liepāja to establish its own reuse and renovation centre;
- ✓ Most of respondents would be willing to visit reuse and renovation centres even if there was symbolic payment for it;
- ✓ A part of the respondents would also be prepared to acquire the skills related to repairing the goods for their repeated use.

The next activity of the Pilot action was the Study visit of Latvian experts to Italy. The experts Ms. Liene Jākobsone and Dr. Rūta Bendere from the Riga Technical University (RTU), and representative from the Latvian Waste Management Association Dr. Dace Āriņa visited Italy from 28 November to 4 December 2021 to learn about the principles of life cycle promotion for the reuse and recovery of goods. The Study visit in Italy was organized by the Pilot action partner – SERN.

During the visit experts got acquainted with the Good practice "Change the Ending", which is being successfully implemented in the Emilia-Romagna Region of Italy. This project is intended for the return of used household goods, including furniture by ensuring door-to-door collection, or providing a special container at sorting areas for the household waste.

Experience from the "Change the Ending" project, which is being implemented in the Italian waste sorting sites, will be taken over in Latvia with the improvement of the "Liepājas RAS" Reuse Centre by:

- ✓ Providing a specially equipped workplace for a craftsman who will be engaged in minor repairs of electrical equipment and other goods. The Italian experience has confirmed that only minor repairs are recommended. Major repairs can be performed in workshops or specialized factories;

¹⁷ Regional TV located in the Kurzeme region of Latvia

¹⁸ Regional newspaper located in the Kurzeme region of Latvia

- ✓ Starting the cooperation with charities for the reuse of large-scale goods such as furniture and electrical equipment;
- ✓ Ensuring a strict inspection by staff of brought items to select high quality and in-demand items;
- ✓ Starting the cooperation with technical schools and specialized universities for the provision of electrical equipment for repair studies;
- ✓ Setting specific limits on the goods that will be accepted at the Reuse centre. Due to the limited size of the Reuse Centre container, bulk goods (as furniture, construction elements) are not permitted.

Thanks to the OptiWaMag project TESLA LAB Pilot action, the Reuse Centre was implemented and promoted in the South Kurzeme Region and Liepāja city. This is the first such centre in Latvia, which is managed by the waste management company and provides free exchange of household goods. The introduction of the “Liepājas RAS” Reuse Centre is important to promote principles of the circular economy and reduce the amount of waste to be disposed at the landfill “Ķīvītes” in accordance with the targets set by the European Commission. During the past 4 months (September – December 2021) 400 items were saved from disposing at the landfill “Ķīvītes”.

Thanks to the implementation of the TESLA LAB Pilot action measurable results were achieved by the “Liepājas RAS” Reuse centre “Ķīvītes”, where the Pilot action was tested and main reuse activities took place from September 2021 until January 2022. The results were measured in January 2022 against indicators defined in September 2021 – before the awareness rising activity TESLA LAB Repair Café took place in the Liepāja city and can be estimated as successful.

RESULTS:

- ✓ The number of interested persons increased by 15%;
- ✓ The number of visitors increased by 48%;
- ✓ 400 different goods exchanged (October, 2020 – January, 2022);
- ✓ Repair works planned to be started from April, 2022.

The achieved results indicate that reuse activities are useful and supported by the society. This must be taken into account that Covid-19 related restrictions were strengthened from the 10 October 2021 and the extraordinary situation was announced on 15 November 2021 until 28 February 2022, which has limited the activity of the Reuse centre. Also, normally the activity of the Reuse centre slows down during the winter months (November – March) and increases again afterwards.

The next TESLA LAB Pilot action activity – the Latvian - Italian online policy webinar “Reuse of Goods for Sustainable Consumption Following the European Green Course” was organized by RTU in cooperation with SERN on 13 December 2021. The webinar was attended by 49 participants from all Latvia, as well as Italy. Therefore, one of the main objectives of the TESLA LAB Pilot action – to transfer the experience of one of regions of Latvia (South Kurzeme Region) on organizing the reuse process was transferred also to other parts of Latvia.

The final TESLA LAB event – concluding online Evaluation workshop took place on 19 January 2022.

Please, also see the Table 3 about the achieved results of the TESLA LAB Pilot action. The information about the TESLA LAB activities and outputs is also available here: <https://buni.rtu.lv/interreg-eu-optiwamag/>

Table 3. Achieved results of the TESLA LAB Pilot action.

No	Achieved results
1.	One study visit of to Italy involving 3 representatives from Latvia took place onsite from 29 November to 3 December 2021.
2.	The TESLA LAB, Repair Cafe was organized in Liepāja on 9 October 2021 involving 60 participants (because of the Covid-19 restrictions there were less participants as initially planned).

3.	The survey or feedback questionnaire gathering the opinion of visitors of the Reuse centre and TESLA LAB repair cafe on the reuse process in Liepāja and South Kurzeme Region was conducted. 45 respondents took part in the survey.
4.	The Latvian - Italian online policy webinar “Reuse of Goods for Sustainable Consumption Following the European Green Course” was organized by RTU in cooperation with SERN on 13 December 2021. The webinar was attended by 49 participants .
5.	The concluding online evaluation workshop took place on 19 January 2022.
6.	One press conference was held during the TESLA LAB Repair Café on 9 October 2021.
7.	<p>Information and dissemination activities. There were 4 press releases published on the RTU BUNĪ website resulting in 20 publications on different organizational websites and internet media platforms in Latvia reaching out to more than 3 000 people. There were also 2 publications on the website of the Italian partner (SERN) resulting in more than 150 views.</p> <p>In addition, there were social media publications: Facebook, which also included streamlining of a public discussion during the TESLA LAB Repair Café event (09/10/2021) and Latvian - Italian TESLA LAB webinar “Reuse of Goods for Sustainable Consumption Following the European Green Course” (13/12/2021) (13 700 views), Twitter (371 views), Instagram (544 views), LinkedIn (238 views) and Draugiem.lv (n/a).</p> <p>The radio interview was listened by more than 14 000 listeners and TV news broadcast by 1488 people.</p> <p>The live streaming of the Latvian - Italian TESLA LAB webinar reached 60 000 people audience and attracted 400 views.</p> <p>The TESLA LAB Press conference was organized during the Repair Café event attracting regional Kurzeme TV, radio journalists and several media representatives.</p> <p>Photos and one professional video (TESLA LAB Repair Café) from events were used for advertising and promotional purposes of the TESLA LAB Pilot action and OptiWaMag project.</p> <p>(Please, see the full TESLA LAB Pilot action Information and Dissemination Report).</p>
8.	The Evaluation Report and the Information and Dissemination Report has been conducted and discussed during the concluding online evaluation workshop .

3.2.2. The impact of the TESLA LAB Pilot action on other policy instruments

The municipality owned company Ltd. “Liepājas RAS” in January, 2022 has started the process of developing the **Regional Waste Management Plan of the South Kurzeme Region**. The regional stakeholders – municipalities of the Liepāja city and the South Kurzeme Region – at the end of 2022 shall approve a new regional plan for 5 years (2023 – 2027). Thanks to the experience acquired during the implementation of the TESLA LAB Pilot action and particularly taking over the “Change the Ending” – Good practice from Italy, the following learning for implementing the 3R principles will be taken over by the South Kurzeme Regional authorities for improving the system of waste collection and reuse, as well as for developing the Regional Waste Management Plan of the South Kurzeme Region 2023-2027:

- ✓ To promote reusing of goods by developing shops/markets managed by NGOs.
- ✓ Municipalities should support NGO by offering possibilities to rent appropriate large area premises. For wide profile markets, it is important to provide premises with an area of 1000 m² or more. The area may be smaller if the organization specializes in the sale of certain goods (such as dishes, textiles, or children’s toys).

- ✓ The logistics for collection could be provided by NGOs in cooperation with waste management companies.
- ✓ The NGOs that managing markets should focus on social or charitable functions, promoting additional benefits from reuse markets. A great example in Italy is the NGO “Officina 68”, which employs people with mental illness.
- ✓ By applying the price of the goods sold in the market, the NGO generates revenue that can be used to ensure economic activity and pay employees.
- ✓ Detailed information on recyclable waste containers is necessary to facilitate the recycling of waste and the diversion of waste to reuse. There is an information on the type of waste and the management company, but no information on the purposes of the waste collected and the end users on the waste containers in Latvia. In Italy, there was a good example of a textile container, which also contains information on the purpose of collecting textiles - charity and sale on the markets.
- ✓ To promote all 3R, the Italian experience has shown that it is well coordinated by a single call centre that manages the whole region. Now, each municipality has 1 or more waste management companies that have their own call centres providing different information. In the next planning period, the central information dissemination functions could be assigned to one company, such as the regional waste management centre, which provides a highly qualified call centre.
- ✓ Regional waste management centres and municipalities should provide education and awareness-raising activities by providing the necessary funding for these activities.

The RTU will actively continue to cooperate with regional stakeholders – municipalities of the Liepāja city and the South Kurzeme Region, as well as the “Liepājas RAS” in the process of developing the Regional Waste Management Plan of the South Kurzeme Region, 2023 – 2027.

3.2.3. Players involved

One of important stakeholders, which has been involved in the implementation of this Pilot action was the Waste Management Association of Latvia. This unprofitable NGO has more than 60 members - WMC, local municipalities, waste management companies and specialists, which will learn from this Pilot action and its results, as well help to disseminate the information all over Latvia.

Considering that the Pilot action has taken place on the grounds of Municipality of Liepāja and the South Kurzeme Region, the main players directly involved in the implementation of the TESLA LAB were regional stakeholders – Liepāja city, South Kurzeme Regional authorities and the regional waste management company (Ltd. “Liepājas RAS”). Also, local NGOs, media and society have been involved in the TESLA LAB public activities. Especially important are local NGOs, which are actively involved in the promotion of the reuse process. Nationwide activities, such as The Latvian - Italian online policy webinar “Reuse of Goods for Sustainable Consumption Following the European Green Course” involved the Managing Authority – Ministry, as well as waste management companies and municipalities from all over Latvia.

3.2.4. Timeframe

Table 4. Timeframe of implementing and follow-up the TESLA LAB Pilot action.

Date	Activity
January-May, 2021	Developing proposal for the Pilot action.
June, 2021	Submission of the Pilot action proposal to JS.
September, 2021	Approval of the Pilot action.
September, 2021 – January, 2022	Implementation of the Pilot action.
January, 2022 – December, 2022	Monitoring the development of the Regional Waste Management Plan of the South Kurzeme Region (using lessons from interregional learning obtained

	from the OptiWaMag project and Pilot action TESLA LAB).
January, 2022 – January 2023	Monitoring and evaluating territorial results of the Pilot action, transferring interregional learning from the TESLA LAB pilot action to the South Kurzeme Region, monitoring the implementation of the Regional Waste Management Plan of the South Kurzeme Region.

3.2.5. Performance indicator

The implementation of the TESLA LAB Pilot action resulted in achieving a new performance indicator – number of Good practices transferred with a value – 1.

3.2.6. Costs

Not relevant

3.2.7. Funding sources

Not relevant

3.2.8. Monitoring and evaluation

The monitoring and evaluation of the territorial results of the Pilot action TESLA LAB will take place during the 2nd Phase of the project working in a close cooperation with the regional stakeholder – Regional Waste Management Company of Liepaja, which will be developing the Regional Waste Management Plan of the South Kurzeme Region 2023-2027 following the guidelines provided by the NWMP 2021-2028.

The South Kurzeme Region has actively participated in the OptiWaMag learning process and the TESLA LAB Pilot action was implemented on its territory during the 1st Phase of the project. Thus, this is planned that during the 2nd Phase the South Kurzeme Region will continue to mainstream the TESLA LAB Pilot action results by implementing the main 3R principles on its territory following the learning from the Pilot action, as well as reflect it in a new Regional Waste Management Plan of the South Kurzeme Region 2023-2027.

The monitoring and evaluation of the Action Plan will be done in close cooperation with the regional stakeholder - Regional Waste Management Company of Liepāja, as well as other stakeholders of the South Kurzeme Region.

Professor, Dr.sc.ing.
TĀLIS JUHNA
Vice-Rector for Research

Date: 06.07.2022.

Signature: _____

Stamp of the organisation (if available): _____



