



Stakeholder Engagement Plan Organic Waste

Deliverable 3.1

South-Eastern Finland University of Applied
Sciences (XAMK)



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Abstract	This is a stakeholder engagement plan for the City of Mikkeli, supporting the implementation of the CityLoops activities in the organic and biowaste (OW) stream. The goal of stakeholder engagement is to develop a process, which inspires individuals, groups, businesses, institutions and others to improve their interaction and to cooperate effectively to accomplish goals.
Keywords	Stakeholder Engagement, Organic Waste

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1. Executive Summary

This is a stakeholder engagement plan for the City of Mikkeli, supporting the implementation of the CityLoops activities in the organic and biowaste (OW) stream. The goal of stakeholder engagement is to develop a process, which inspires individuals, groups, businesses, institutions and others to improve their interaction and to cooperate effectively to accomplish goals. The stakeholder plan is our tool to organize stakeholder processes in the implementation of our main and sub-activities of the CityLoops project. The stakeholder plan and the stakeholder analysis we provide in this document will act as an informative platform to carry out stakeholder activities and achieve our goals. This plan represents an initial idea of how stakeholder engagement may work with the tools and demonstration actions in our city, but it is important to highlight that stakeholder engagement processes are reflexive and repetitive, and that the plan will be updated.

2. Introduction to the Organic Waste demonstration process

In the CityLoops project, the focus of activities in Mikkeli will be on improving the recovery of nutrients from organic waste (OW) streams into recycled products, creating business opportunities for local companies. Based on a thorough analysis of OW streams and potential valorisation pathways, a series of innovative collection, treatment and product optimisation processes and techniques will be demonstrated. New collection and sorting processes will be implemented city-wide in collaboration with local citizens to upgrade the quality of OW collected.

Tools:

1. OW quality assesment and business cases
2. Procurement quidelines for OW products
3. OW collection and shorting processes
4. Treatment and final product optimization

Inception and preparation phase (M1-18)

Building on the stakeholder mapping, sector-wide circularity assessments, and circular procurement assessments a series of additional preparatory actions are carried out:

1. Business case development, including OW quality assessment (together with Apeldoorn) – Business cases for reuse, recycling and valorisation of OW will be developed for application in the demonstration actions. This includes an analysis of current collection and sorting systems and volumes, together with an assessment of nutrient recovery potential, and economic exploitation opportunities, in collaboration with local businesses, and of relevant non-economic barriers. This assessment is used to determine the appropriate processes and techniques to be implemented in the demonstration phase.

Lead partner: XAM, Other partners involved: MIK

2. Procurement guidelines for OW products (together with Apeldoorn and Porto) – Procurement guidelines are prepared, drawing on the circular procurement assessment (task 3.4), designed to exploit the Municipality of Mikkeli's procurement actions as a supporting launch market for new techniques and products.

Lead partner: MIK, Other partners involved: Xamk

3. New collection and sorting processes for OW – Based on the analysis above, the local stakeholder group, involving different stakeholders (e.g. citizens, authorities, waste companies) identify appropriate new collection and sorting processes aimed at improving nutrient recovery and allowing the creation of new products by local businesses. Analysis also draws on the databanks of SITRA (The Finnish Innovation Fund) and Suomen Kiertovoima ry, KIVO (Association of Finnish public waste management and municipal organisations) concerning e.g. sorting reports and information of municipal solid waste management. This analysis is developed into an implementation plan for nutrient recovery. Amongst other measures, this will include developing instructions and organising citizens actions for local residents aimed at upgrading the quality of biowaste collected.

Lead partner: Xamk, Other partners involved: MIK

4. New treatment and final product optimisation techniques –In addition to new collection and sorting processes, a series of new treatment techniques is developed and planned in cooperation with local companies, to allow the development of new products. A number of innovative processes and technologies is incorporated, including mechanical preliminary treatment (to optimise material flows prior to treatment - e.g. sieving, crushing and mixing), waste treatment (e.g. optimised dry fermentation, treating organic and garden waste jointly using a dry anaerobic digestion process) and final product optimisation (fractioning, pelletizing, drying, using biochar as an additive component (which enables more complex functional properties of the productized fertilizer - e.g. water and nutrient storage) and using electrochemical methods for the recovery of nutrients from rejection waters of dry digestion process). These will be incorporated into the implementation plan developed by the end of **phase 1**.

Lead partner: Xamk, Other partners involved: MIK

Demonstration phase (M18-44)

The new collection and sorting processes identified in phase 1 will be established across the City. Mikkeli will pursue the development of the treatment and product optimisation techniques identified in Phase 1 in collaboration with local companies. At least 5 methods/technologies will be tested, with the aim of permanently establishing at least two innovative nutrition extraction and product creation technology and business opportunities. One of the tested new methods/technologies will certainly be using biochar as an additive for organic material, which enables more complex functional properties of the produced fertilizer (e.g. water and nutrient storage). Another will be using electrochemical methods for the recovery of nutrients from rejection waters of dry digestion process“. The other methods/technologies to be are currently being identified.

Demo action lead partner: Xamk. Other partners involved: MIK

Replication phase (M36-48)

The results of the demo actions will be used to update the organic waste management instructions of Mikkeli City. The results will be spread through the OW groups established (see

next section). In addition, the results will be replicated in South Savo region and other regions in Finland. Results will also be published in circular economy seminars in Finland and in Europe.

Stakeholders: The key stakeholders to be involved in the planning, implementation and evaluation of the demonstration actions are City of Mikkeli and Mikkeli Development Miksei Ltd, waste management company (Metsäsairila Ltd), university (South-Eastern Finland University of Applied Sciences), and the sector authorities of South-Savo region and companies within the waste sector. These stakeholders will be part of a 'Green Deal' network so provide expertise, infrastructure and organic materials for the implementation of the project. Furthermore, an 'OW group' is being established between citizens, waste management companies and public authorities. In this group, local authorities and waste companies cooperate around waste collection and sorting, and citizens develop and implement citizen engagement actions around recycling. This will be accompanied with workshops around the project demonstration actions.

3. Stakeholders and stakeholder groups in OW demonstration process

3.1. Stakeholder groups

In Mikkeli, there are three primary stakeholder groups regarding actions on organic waste:

1. Collection and sorting
2. Treatment and final products
3. OW Group

Stakeholder groups represent stakeholders involved in the actions and operations included in the tools in WP3 in Mikkeli. Most of these stakeholders have been already engaged and involved in the planning phase of CityLoops project. The stakeholder representatives have been appointed by the stakeholder organizations, mainly the same people already contributed in the planning phase of CityLoops project. Below stakeholder groups described with more details.

Stakeholders in the group 1. “Collection and sorting” have an operative role in collecting and sorting the organic waste in the Mikkeli region. The group 1 helps and gives practical guidance to coordinate and facilitate the tools “OW collection and sorting processes”, procurement guidelines for OW products” and “OW quality assesment and business cases” to be put into action.

Stakeholders in the group 2. “Treatment and final products” have an operative role in managing and treating the organic waste in the Mikkeli region. The group 2. helps and gives practical guidance to coordinate and facilitate the tool ”4.Treatment and final product optimization” to be put into action.

The group 3. ‘OW group’ will be established between citizens, waste management companies and public authorities. In this group, local authorities and waste companies will cooperate around waste collection and sorting, and citizens will develop and implement citizen engagement actions around recycling. This will be accompanied with workshops around the project demonstration actions. This serves to promote the introduction of tools developed in the project and the circular economy in Mikkeli.

Stakeholders and groups:

Group 1. Collection and sorting

- Metsäsairila Ltd - municipal waste management company
- Mikalo - municipal housing company
- City of Mikkeli - procurements

Group 2. New treatment and final product/stakeholder group

- Metsäsairila Ltd - municipal waste management company
- BioSairila Ltd - municipal company owning and operating a biogas plant
- Etelä-Savon Energia Ltd (ESE) - municipal energy company distributing biomethane

Group 3. OW Group

- City of Mikkeli, Municipal authority in waste management and environmental issues
- Metsäsairila Ltd - municipal waste management company
- Mikalo - municipal housing company
- Citizens - Mikalo residents (1 - 2 person)
- The Centre for Economic Development, Transport and the Environment for South-Savo (ELY Centre) - Environmental authority
- L&T - waste transport company

Additional stakeholders

The project will also work together with additional stakeholders for sharing and exchanging information research and methods: R&D organizations, landscaping companies and other companies and Universities. These stakeholders will be identified over the course of the project, an update of this stakeholder engagement plan will be provided.

3.2. Stakeholder information

The roles and responsibilities of stakeholder groups in developing the tools and demonstration actions during project implementation are presented in Table 1,



STAKEHOLDERS	GROUP 1 COLLECTION AND SORTING	GROUP 2 TREATMENT AND FINAL PRODUCTS	GROUP 3: OW GROUP
<p>Metsäsairila Ltd - municipal waste management company</p> <p>Contacts: Jonne Gråsten Anne Laitinen</p>	<p>Responsible for collection and treatment of municipal organic waste in City of Mikkeli. In CityLoops, Metsäsairila Ltd provides statistics and other information regarding volumes, quality, collection and treatment of organic waste.</p> <p>Participates in OW collection demonstrations and communications and dissemination.</p>	<p>Responsible for collection and treatment of organic waste in City of Mikkeli. In the CityLoops project Metsäsairila Ltd provides information on treatment process regarding OW treatment and final products. Participates in the design of laboratory scale tests. Co-operates in business case development.</p>	<p>Responsible for collection and treatment of municipal solid waste in City of Mikkeli. For the CityLoops project Metsäsairila gives feedback on project activities and utilizes the project results.</p>
<p>Mikkeli, waste and environmental authorities</p> <p>Contact: Nina Hurri</p>	<p>-</p>	<p>-</p>	<p>City authorities regulate and guide how waste management regulations is organised in City of Mikkeli. In CityLoops, the city authorities comment and give feedback on project activities and utilise the project results.</p>
<p>Mikalo - municipal housing company</p>	<p>Mikalo owns and governs the apartments that are targeted</p>	<p>-</p>	<p>In CityLoops project Mikalo Ltd comment and give feedback on</p>



Contact: Tommi Kuvaja and Pia Sutela	for the demonstration actions. In CityLoops, Mikalo helps with the practical arrangements and provides information.		project activities and utilize the project results.
L&T - waste transport company Contact: Vesa-Matti Aaltonen	-	-	L&T is a waste transportation service provider in city of Mikkeli. In CityLoops, L&T comments and gives feedback on project activities and utilises the project results.
BioSairila Ltd – biogas plant Contacts: Ville Kakkonen Aki Heinonen	-	Municipal company owning and operating a biogas plant in city of Mikkeli. In the CityLoops project, BioSairila Ltd provides information on biogas process regarding OW treatment and final products, participates in the design of laboratory scale tests, and co-operates in business case development.	-



<p>Etelä-Savon Energia Ltd ESE Energy company</p> <p>Contact: Mikko Liukkonen Jukka Eestilä</p>	-	<p>Municipal energy company distributing biomethane in the City of Mikkeli. In the CityLoops project ESE provides information on biogas process regarding final products (biomethane) and co-operates in business case development.</p>	-
<p>Environmental authority, ELY Centre</p> <p>Contacts: Pirjo Angervuori Jyrki Hämäläinen</p>	-	-	<p>Regulates and guides in issues regarding the environmental sector and operate as environmental authority in South-Savo Region. ELY Centre also carries out a regional waste management plan. In CityLoops, ELY centre gives feedback on project activities and utilises the project results.</p>
<p>City of Mikkeli, procurement department</p> <p>Contact: Jarmo Autere</p>	<p>City of Mikkeli develops procurement processes to enable and enhance the viability of new business models. In CityLoops, they give feedback on project activities and utilise the project results.</p>	-	-



Citizens from Mikalo residents Contact: Names are not public	-	-	Residents in targeted Mikalo apartments. In CityLoops, citizens give feedback on project activities in the apartment houses and utilise the project results.
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Table 1- Stakeholder Groups - overview and responsibilities

4. Stakeholder engagement methods

Close collaboration with stakeholders will strengthen the influence of CityLoops project, but it will also help project team to succeed in getting the targets of the project.

Personal contacts take place in meetings, seminars, field visits and excursions. Personal contacts enable smooth local collaboration in CityLoops project, enabling discussion, interaction and emerging new ideas. These engagements are arranged online in the current pandemic situation. Digital tools are utilized when needed. E-mails, press releases, newsletter, articles, web pages and social media are used to contact and engage stakeholders. Further citizen engagement methods will need to be developed during the testing and implementation phase.

5. Plan for Stakeholder engagement

5.1. Stakeholder meetings and workshops

In the preparation phase, the operative group meets 6-10 times per year (Group 1 has already been meeting every month in March-June 2020). Stakeholders provide input data, participate in the planning of demonstrations and help in practical arrangements.

In the preparation phase, the operative Group 2 have meetings 5 times per year. Stakeholders provide input data, participate in the planning of demonstrations and help in practical arrangements. The first meeting will be held in Autumn 2020.

Group 3 will have the first meeting/workshop in autumn 2020. The aim is to have a wider discussion with authorities and citizens on the project activities and plans. In the later phase, 2-3 meetings will be arranged per year where the progress of the project will be discussed and the results will be presented. The replication of the project results will be discussed and planned in the group 3 meetings.

5.2. Activities for tool development

5.2.1. OW quality assessment and business cases

Building on the stakeholder mapping, sector-wide circularity assessments, and circular procurement assessments which all cities will carry out during this phase, a series of additional preparatory actions will be carried out to develop the tools to implemented during the demonstration phase. The overview below details the activities and which stakeholders are involved in them.

Preparation phase:

- An analysis of current collection and sorting systems, volumes of both Municipal Solid Waste (MSW) and quality OW (i.e. separate collection biowaste, and other organic matter) collected, together with an assessment of nutrient recovery potential.
- Analysing waste statistic from Metsäsairila and City of Mikkeli year 2019
 - Information received from Metsäsairila Ltd
 - Business cases for reuse, recycling and valorisation of OW will be developed in the demonstration actions in collaboration with local businesses.

- Sub-working-group with Apeldoorn
- The methodology will be tested in Mikkeli (private and public OW producers) together with Metsäsairila Ltd (waste company)

DEMO Phase: The new collection and sorting processes will be tested in Mikalo apartment houses, there will be contact with interested entrepreneurs.

Stakeholders: Group 1.

5.2.2. Procurement guidelines for OW products

Procurement guidelines are prepared, drawing on the circular procurement assessment, designed to exploit the Municipality of Mikkeli's procurement actions as a supporting launch market for new techniques and products.

Preparation phase:

- Procurement guidelines are prepared and the methodology will be tested in Mikkeli together with Metsäsairila Ltd and Mikalo and the City of Mikkeli
- Planning meetings: Information collection on the current procurement practices in city of Mikkeli in progress.

DEMO phase: Guidelines focusing on developing the following acquisitions for OW: More efficient use of the end product of the biogas plant in landscaping in the city of Mikkeli

- Utilization of produced digestion in urban landscaping case study.
- Mikalo apartment house sites (2 yards in progress) and several yards coming.
- Utilization of biomethane from biogas plants in urban transport: buses and city-owned cars
- Utilisation of biomethane case study: in waste transportation, use will begin this year (one car).
- Case study local transport: 4 biogas buses, market dialogue has started

Stakeholders: Group 1

5.2.3. OW collection and sorting processes

Analysis about new collection and sorting process and implementation plan for nutrient recovery together with local stakeholder group. OW group will be established between citizens, waste management companies and public authorities.

Preparation phase:

Preparation Xamk and Miksei: communications strategy together with Metsäsairila Ltd and Mikalo: first article has been published in Mikalo news paper in June (number 1/2020)

- Preparation and data collection (partly collected) from demo area:
 - The demo area of the sorting test is Peitsari area in Mikkeli city
 - Statistic information has been collected from Mikalo and Metsäsairila (number of inhabitants and number of households, housing structure, sorting options, age structure of the population and number of Mikalo apartments and inhabitants)
 - Prepare implementation plan for nutrient recovery together with local stakeholder group
- Gathering information from demo area/Mikkeli and national level information (Sitra, Kivo, other projects/literature and legislation)
- Analysing the sorting process and new biowaste collection system (paper bags). Purchase and deliver paper bags to Mikalo apartments (autumn 2020) together with Metsäsairila and Mikalo.
- Prepare sorting instructions and information for demo area citizens to improve the sorting of their biowaste
- Preparation, clarification and testing:
 - Mapping of the current situation together with Metsäsairila and Mikalo
 - Waste amount in demo area: biowaste and municipal solid waste
 - Number of containers, interval for emptying containers and waste amount
 - Waste transport company weighs out the waste amount in the demo area June and July 2020
 - Sorting test/quality of waste in laboratory scale: delayed because of Corona (later 2020 or 2021)
 - Later in demo phase: repeat weighing of the amount of waste and sorting test/quality of waste
- Delivering information about demo and sorting biowaste: communication events, residential meetings

DEMO Phase:

- OW group will be established between citizens, waste management companies and public authorities.

- Workshops to local “OW group”. Mikkeli will pursue the development of the treatment and product optimisation techniques identified in collaboration with local companies.
- The new collection and sorting processes (biowaste collection -> paper bags) will be established in Mikalo apartment houses.

Stakeholders: Group 1. and 3.

5.2.4. Treatment and final product optimization

Preparation and testing of new treatment techniques and process: mechanical preliminary treatment, waste treatment (e.g. dry fermentation) and final product optimisation pelletizing, using biochar and other methods). These will be incorporated into the implementation plan developed by the end of phase.

Preparation phase:

- Planning of laboratory experiments is in process
- Preliminary tests will start in Autumn in Xamk environmental laboratory
- Biogas group 2 has been established (Metsäsairila, BioSairila and Ese) and first meeting will be in Autumn 2020.

DEMO phase

- At least 5 methods will be tested (M18-44), with the aim of permanently establishing at least two innovative nutrition extraction and product creation technology and business opportunities.
- One of the tested new methods/technologies will certainly be using biochar as an additive for organic material, which enables more complex functional properties of the productized fertilizer (e.g. water and nutrient storage).
- Another will be using electrochemical methods for the recovery of nutrients from rejection waters of dry digestion process.

Stakeholders: Group 2.

5.3. Responsibilities and risks

Responsible for engaging the stakeholders:

- Xamk is responsible of collaboration with groups 1, 2 and 3. Miksei is a team partner in each group.

Key risks and risk mitigation measures:

- Personnel changes: there are many people at work in organisations/stakeholders. Specialists working in their organisations as a stakeholder role with CityLoops may change their employee. This will be mitigated through a deputy procedure
- Pandemic situation: online meetings will be organised.



5.4. Appendix 1: Timetable

Year	2019				2020								2021								2022								2023																			
Project month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Calendar month	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
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7. OW collection and sorting processes																																																
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8. Treatment and final product optimization																																																
Stakeholder engagement (group 2): Metsäsairila Ltd: MSA, Biosairila Ltd (BS), Eteleä-Savon Energia Ltd (ESE)																																																
OW Group																																																
Stakeholder engagement (group 3): OW Group: <ul style="list-style-type: none"> • City of Mikkelin, Municipal authority in waste management and environmental issues • Metsäsairila Ltd - municipal waste management company • Mikalo - municipal housing company • Citizens - Mikalo residents (1 - 2 person) • The Centre for Economic Development, Transport and the Environment for South-Savo (ELY Centre) - Environmental authority • L&T - waste transport company 																																																
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CityLoops is an EU-funded project focusing on construction and demolition waste (CDW), including soil, and organic waste (OW), where seven European cities are piloting solutions to be more circular.

Høje-Taastrup and Roskilde (Denmark), Mikkeli (Finland), Apeldoorn (the Netherlands), Bodø (Norway), Porto (Portugal) and Seville (Spain) are the seven cities implementing a series of demonstration actions on CDW and OW, and developing and testing over 30 new tools and processes.

Alongside these, a sector-wide circularity assessment and an urban circularity assessment are to be carried out in each of the cities. The former, to optimise the demonstration activities, whereas the latter to enable cities to effectively integrate circularity into planning and decision making. Another two key aspect of CityLoops are stakeholder engagement and circular procurement.

CityLoops runs from October 2019 until September 2023.



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