Main results from the Circwaste project

Boosting Circular Economy

– Circular economy advancements from Finland and around the World

30th September 2021

Kati Pitkänen, Tiina Karppinen, Hanna Salmenperä, Jaakko Karvonen

- What is Circwaste? (Kati)
- Monitoring of the impact of the project and transition to Circular Economy (Tiina)
- Measuring the environmental impacts of the project (Jaakko)
- Regional and municipal CE roadmaps (Hanna)

CIRCWASTE – Towards circular economy

a project designed to achieve the waste targets and assist in making the system level change into circular economy in Finland

CIRCWASTE objectives and scope

Funding: EU LIFE, Integrated Projects, 2016 – 2023

- Implement the **targets of the National Waste Plan (NWP)** by concrete pilots, research and development actions and effective dissemination
- Mobilize new **projects** supporting circular economy and waste management and launch continuous **processes**
- Create **cooperation** and enhance **networking** to disseminate best practices and project results in Finland and internationally
- Support the **systemic change** towards circular economy in Finland

22 partners, 4 regions, 10 forerunner municipalities

Research institutes and universities

- Finnish Environment Institute (SYKE)
- Natural Resources Institute (Luke)
- Lappeenranta-Lahti University of Technology (LUT)
- Karelia University of Applied Sciences (KUAS)
- Turku University of Applied Sciences (TUAS)

Waste management companies and enterprises

- GS1 Finland Ltd
- Business Joensuu Ltd
- Kiertomaa Ltd
- Wimao Ltd
- Motiva Ltd
- Pikes Ltd
- Puhas Ltd
- Ramboll Ltd
- Digipolis Ltd

Municipalities and regions

- Central Finland Health Care District
- City of Jyväskylä
- City of Lappeenranta
- City of Pori
- Regional Council of Central Finland
- Regional Council of North Karelia
- Regional Council of Southwest Finland
- Council of Tampere Region

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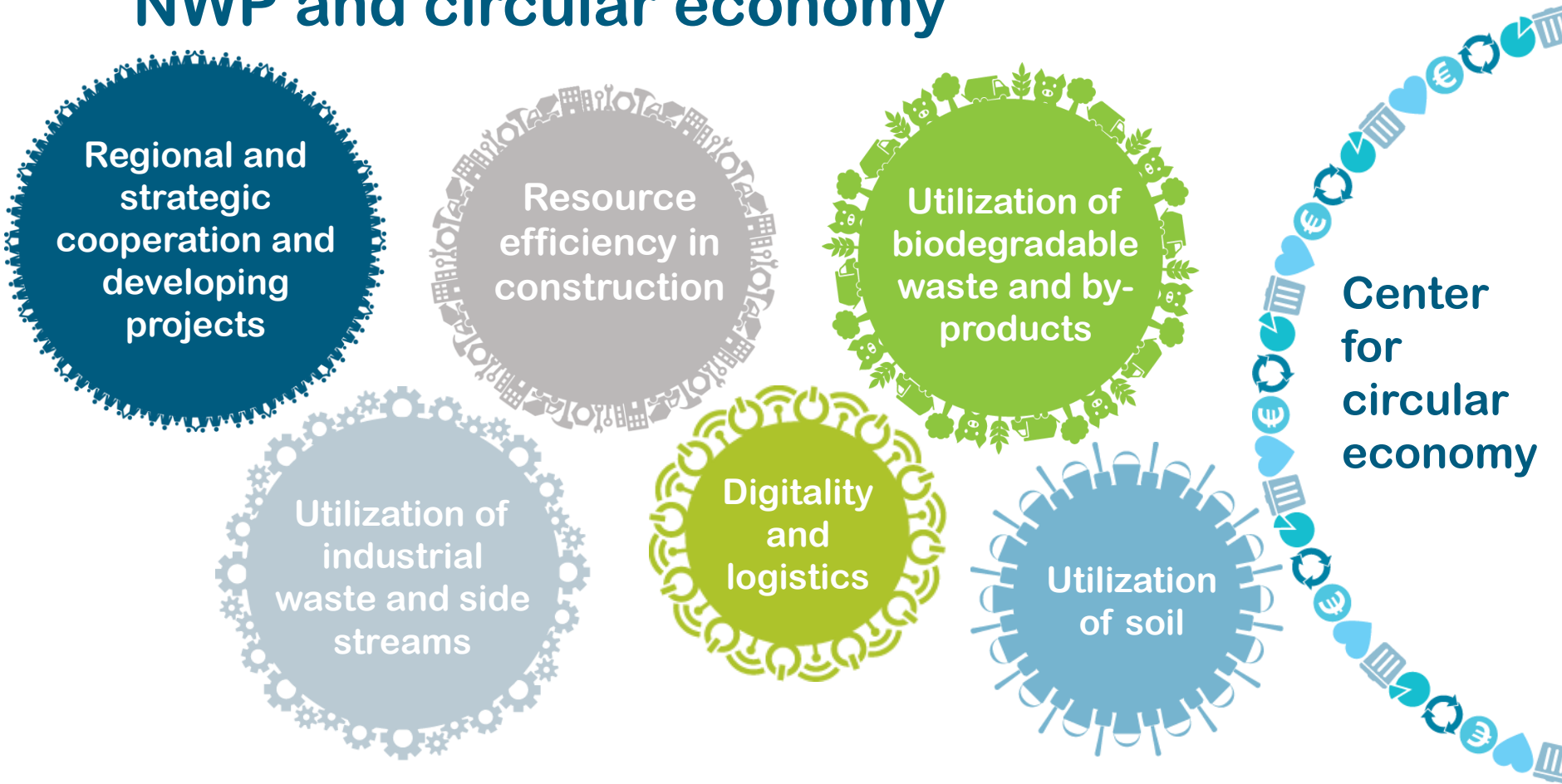
20 actions, in six themes for implementing NWP and circular economy



Monitoring the Impacts of the Project and the Transition to a Circular Economy

Tiina Karppinen, SYKE

Monitoring circular economy in Finland

Monitoring in Circwaste

- Development of sub-national waste indicators
- Towards the inner circles of circularity monitoring
- Contributing to the international dialogue on monitoring CE

Monitoring Circular Economy in Finland

European CE Monitoring

Focus on waste and material streams,
based on existing data

- → **Need for development and new data acquisition**
- → **A number of development projects (e.g. in EEA)**

Table:
Myllymaa et al. 2021, link

Theme	Indicator Type	Indicator	Results for Finland (most recent value, if data available)
Production and consumption	1. EU self-sufficiency for raw materials		N/A
	2. Green public procurement		N/A
	3. Waste generation	Generation of municipal waste per capita	551 kg, annual data 2014–2018
		Generation of waste excluding major mineral waste per GDP unit	73kg/EUR 1,000, semi-annual data 2008–2016
		Generation of waste excluding major mineral wastes per domestic material consumption	8.2%, semi-annual data 2008–2016
	4. Food waste		N/A
Waste management	5. Recycling rates	Recycling rate of municipal waste	42.3%, annual data 2014–2018
		Recycling rate of all waste excluding major mineral waste	37%, semi-annual data 2010–2016
	6. Recycling / recovery for specific waste streams	Recycling rate of overall packaging	65.2%, annual data 2013–2017
		Recycling rate of plastic packaging	26.5%, annual data 2013–2017
		Recycling rate of wooden packaging	14.5%, annual data 2013–2017
		Recycling rate of e-waste	48.2%, annual data 2013–2017
		Recycling rate of biowaste	72%, annual data 2013–2017
		Recovery rate of construction and demolition waste	87%, semi-annual data, 2010–2016
Secondary raw materials	7. Contribution of recycled materials to raw materials demand	End-of-Life recycling input rates (EOL-RIR)	N/A
		Circular material use rate (CMU)	2.2%, annual data 2013–2017 7%, Finnish data on 2018 (Lesonen & Pirtonen 2020)
	8. Trade in recyclable raw materials	Imports from non-EU countries	28,449, annual data 2015–2019
		Exports to non-EU countries	304,599, annual data 2015–2019
		Intra EU trade	139,656, annual data 2015–2019
Competitive-ness and innovation	9. Private investments, jobs and gross value added	Gross investment in tangible goods	0.08% of GDP at current prices, annual data 2014–2017
		Persons employed	1.58% of total employment, annual data 2014–2017
		Value added at factor cost	0.88% of GDP at current prices, annual data 2014–2017
	10. Patents	Number of patents related to recy-cling and secondary raw materials	16.46, annual data 2011–2015

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Strategic Programme to Promote a Circular Economy in Finland

The first national set of circularity indicators and targets

Indicator
Domestic material consumption (DMC)
Material input required for domestic end-use material-specifically (RMC)
Resource profitability (GDP/RMC)
Circular material use rate (CMU)
Turnover of circular economy sectors and number of enterprises
Eco-innocations
Innovative public procurements
Amount and recycling rate of municipal, packaging, and construction waste
Circular economy barometer for companies and consumers

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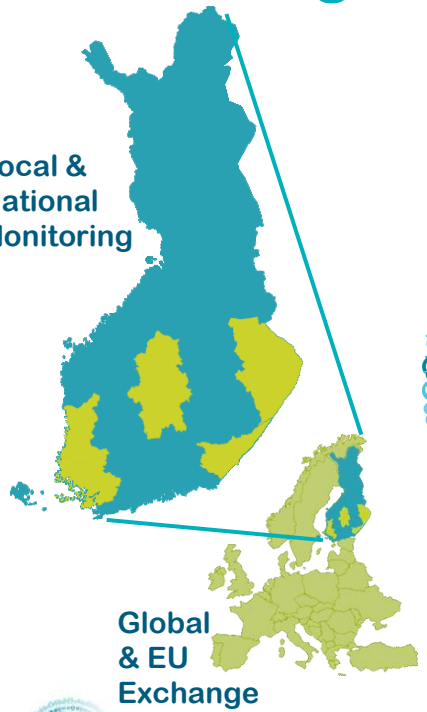
Link

How does Circwaste Contribute to the Development of Circularity Monitoring?

Indicators in Circwaste Project

Monitoring to support decision-making



Sharing best practices

Support for regions

Roadmaps

Impacts

Open data

Communication

Waste legislation

Strategic planning

National waste plan

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Local Actions – Local Data

Circularity monitoring for municipalities and regions

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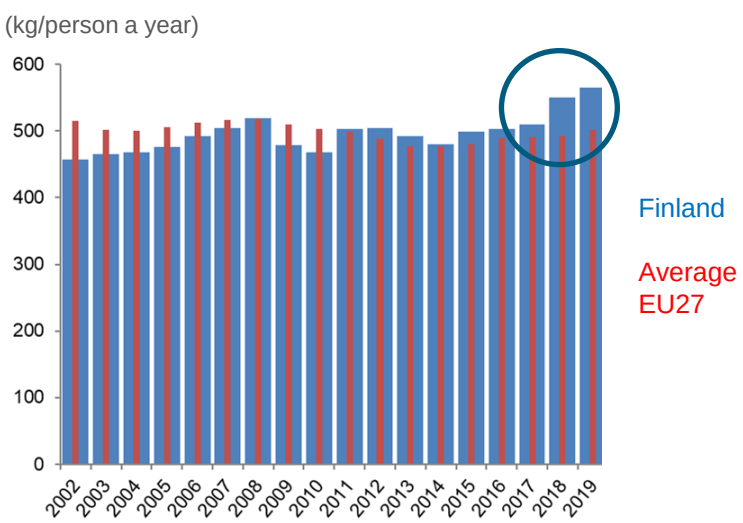
Municipal Solid Waste Still in Increase

The national monitoring of waste poorly represents the impact of local actions promoting sustainable waste management.

Sub-national monitoring is needed to support municipalities and regions.

The amounts of MSW in Finland and EU27 annually
Source: Statistics Finland & Eurostat, graph: SYKE



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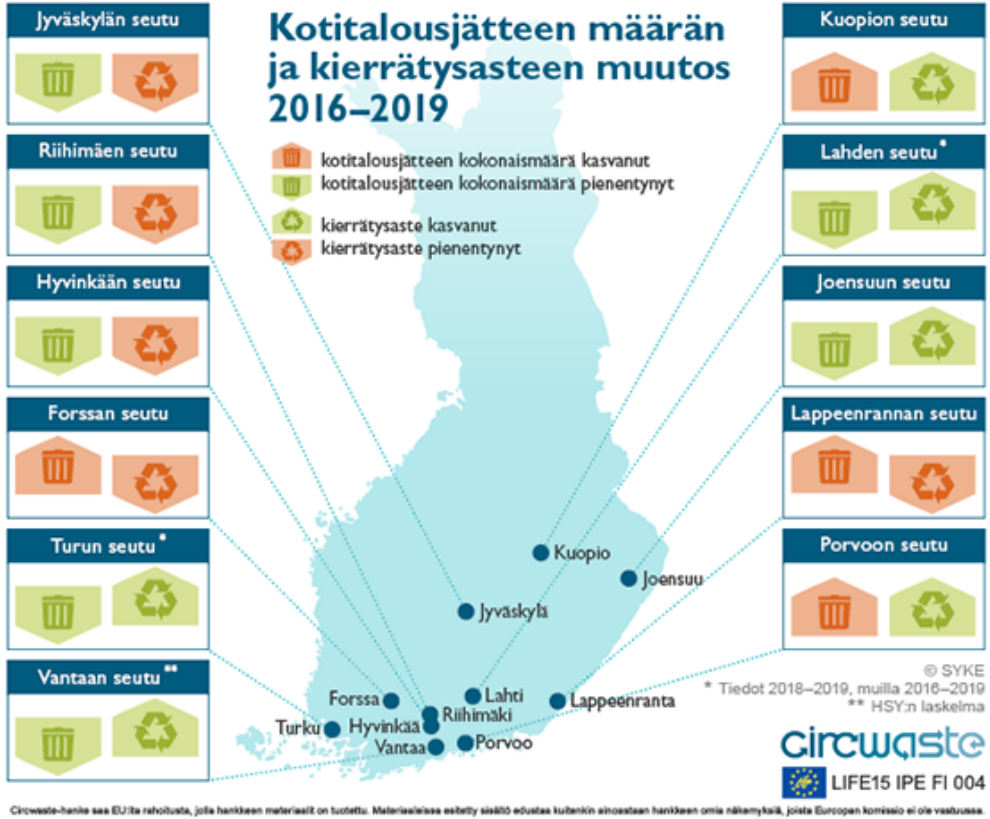
Household Waste

The changes in amounts and recycling rates in municipality regions



The amount of household waste decreased in most regions

Recycling did not increase fast enough

National targets:

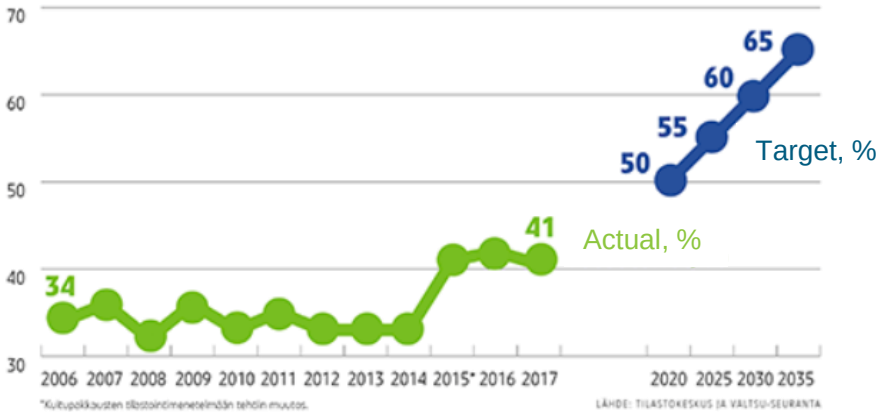
- Decrease in MSW amounts
- Increase in recycling rate

Link

Recycling not increasing fast enough

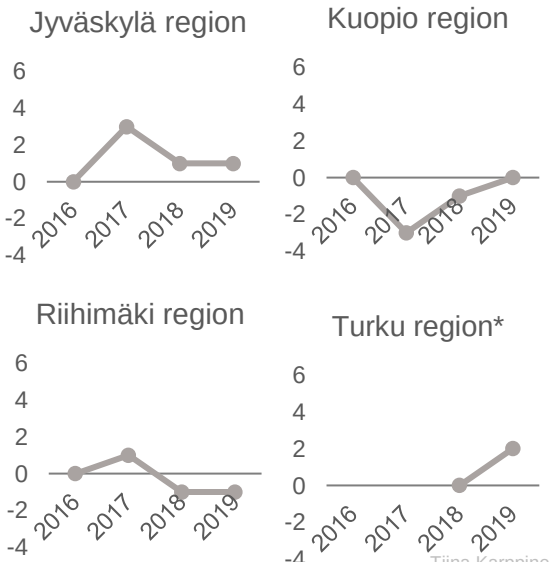
The increase in recycling rates for households is not fast enough in comparison to the EU targets.

Recycling Rate and Targets for MSW



Source: Statistics Finland and monitoring for National Waste Plan
Graph: Ministry of the Environment 2019

Change in the recycling rate of household waste (%-units compared to 2016 or *2018)



Note
Results represent only part of the sub-national monitoring, For more info, see: link.

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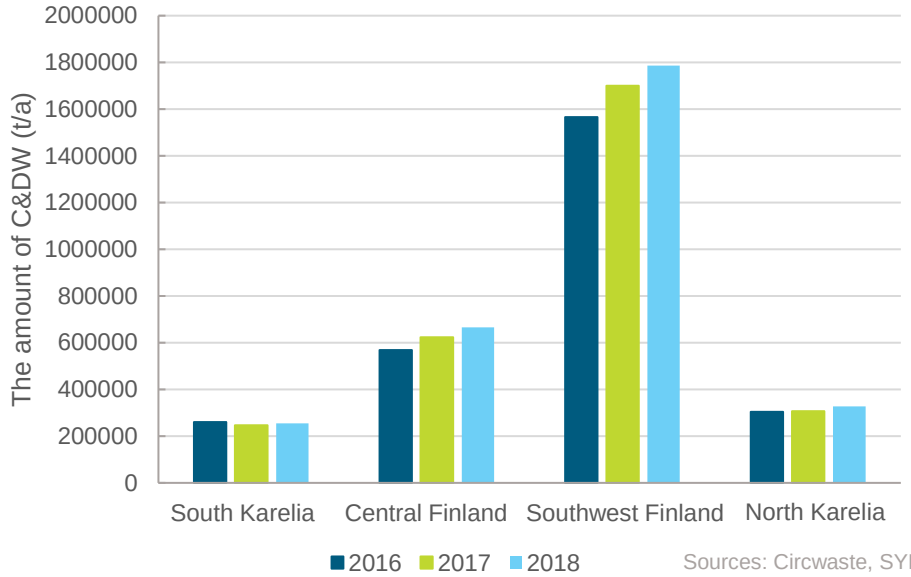
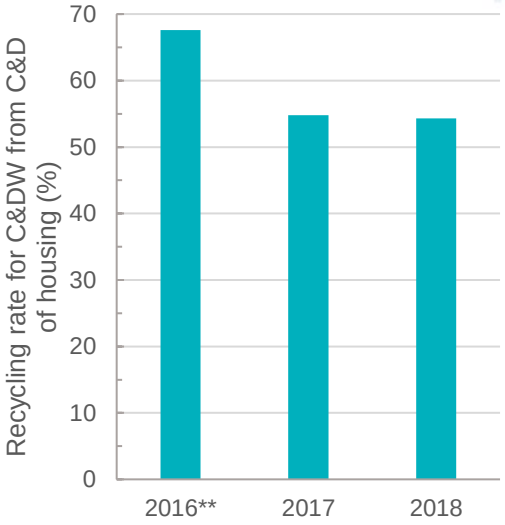
Construction and Demolition Waste

Room to improve in decreasing the amounts, increasing recycling, and monitoring





National Targets:

- Decrease in amount
- Recycling rate 70%
- Risk management
- Better monitoring

Sources: Circwaste, SYKE, Statistics Finland, monitoring of National Waste Plan

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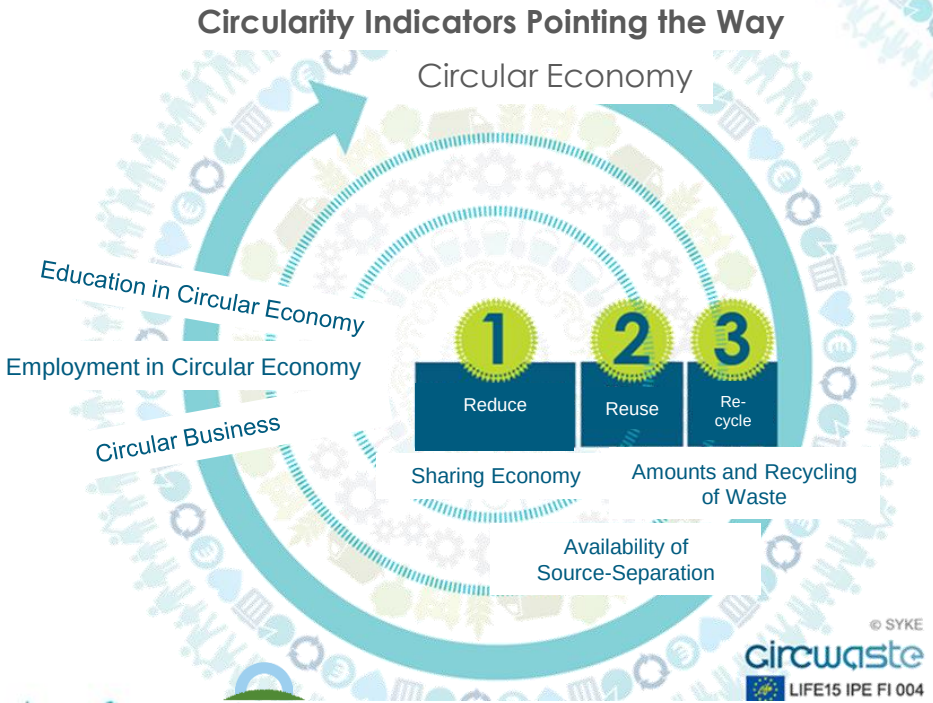
Towards the Inner Circles
of Circular Economy

New Data to Capture the Inner Circles of Circular Economy

Monitoring the small changes to capture the beginning of a systemic change.



Social Aspects of Circular Economy

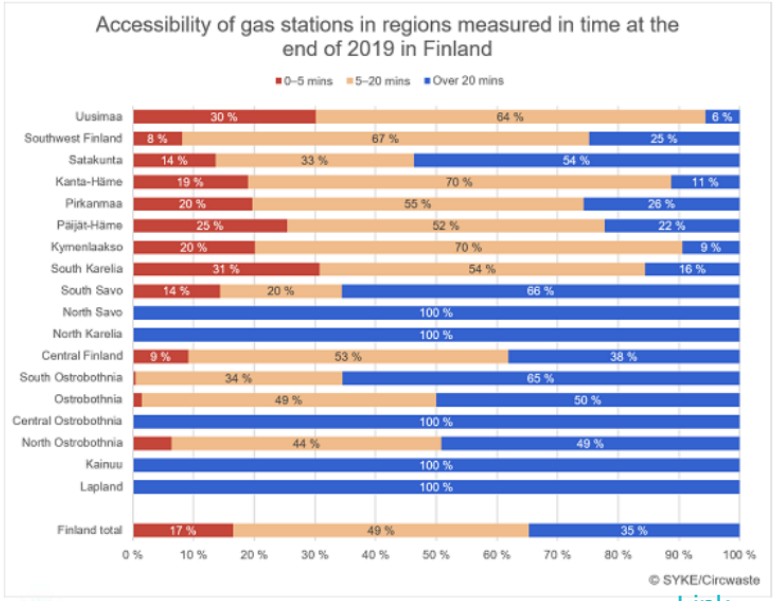
How does the transition to circular economy affect well-being?

How do people adjust to the changes of lifestyle?

How easy is the circular everyday life in different regions in Finland?

Accessibility of Circular Everyday Life

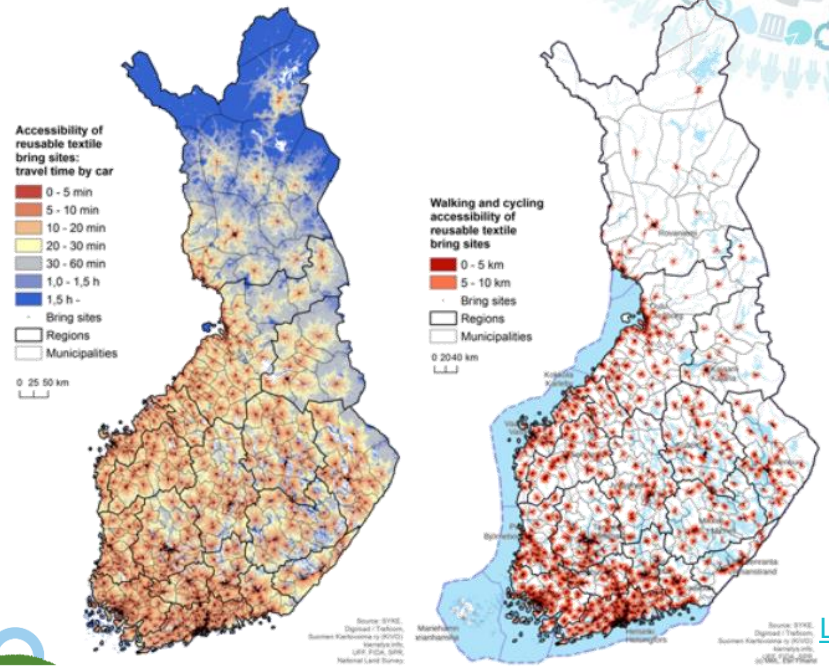
The accessibility of the nearest fuel station for gas vehicles as time distance from home with a car



Link

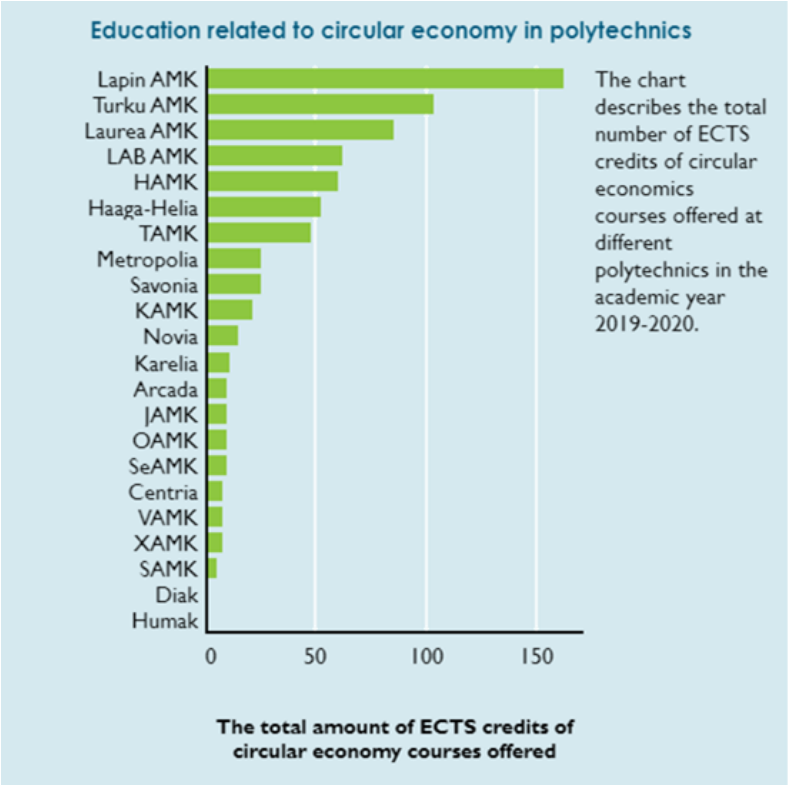
Reusable textile bring sites

Accessibility of textile bring sites: length of driving distance and accessibility on foot or bike in 2019



Link

Higher Education in Circular Economy

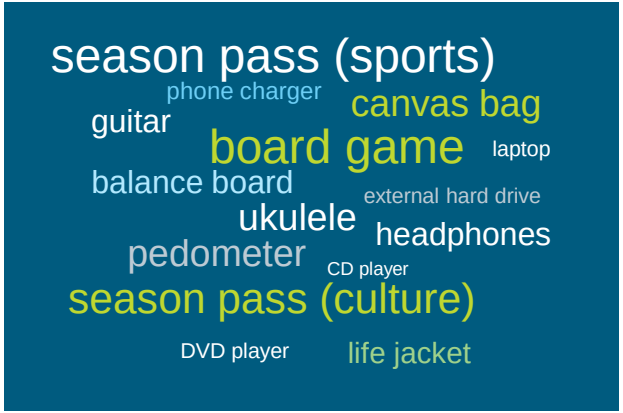


- Number of course credits in courses with ”circular economy” in their name or course description
- Universities of applied sciences in Finland
- Annually updated

Sharing Economy

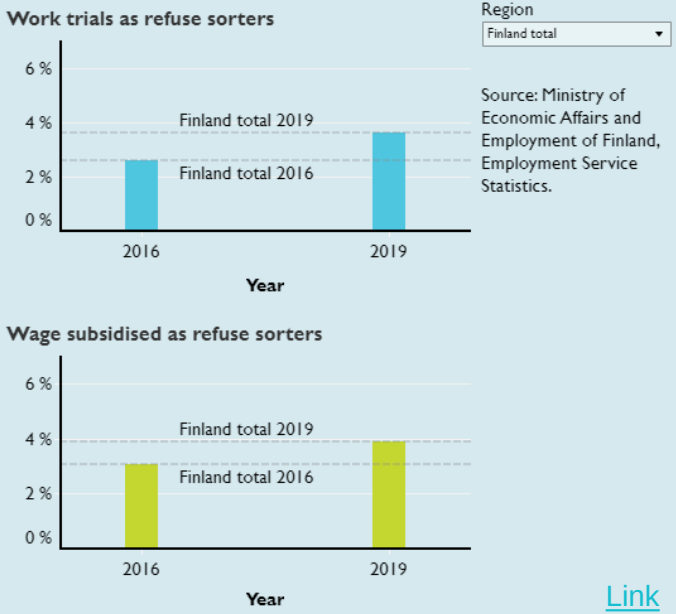
City bikes
– sharing economy to support sustainable city traffic

Library items in public libraries
– making sharing economy familiar and accessible to all



Employment in Circular Economy

Supportive employment in the circular economy

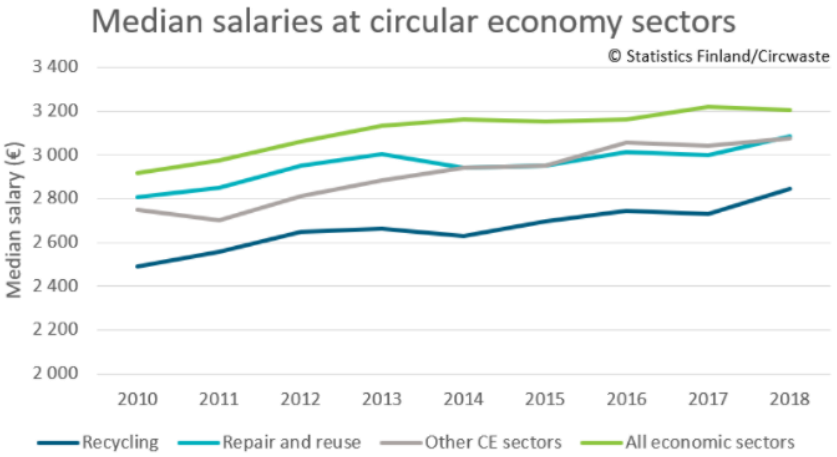


Link

Indicators for the circular economy business

Link

Statistics Finland



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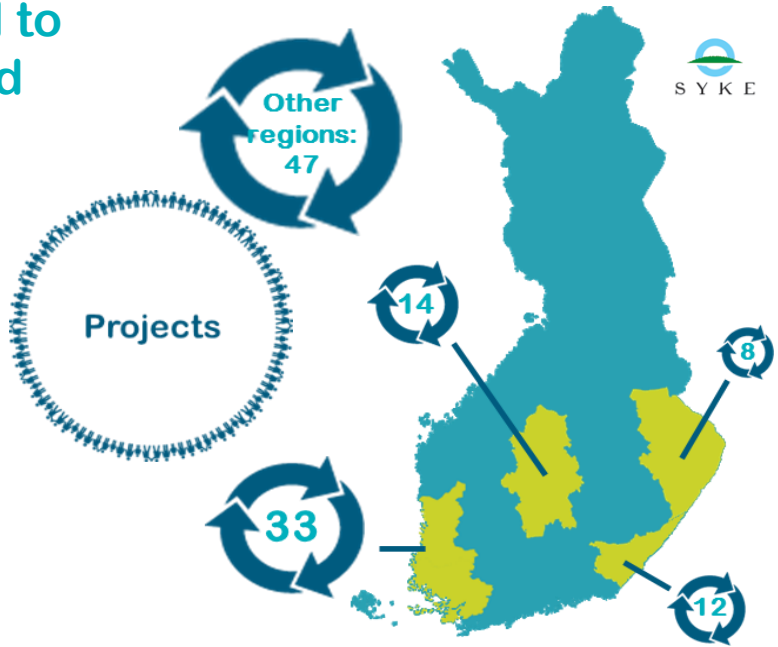
Research and Development Activity

R&D projects related to circular economy and waste management



2019

Contributing to the Dialogue on Circularity Monitoring

International Cooperation in Circularity Monitoring

Bellagio declaration on the principles of circularity monitoring (EEA)

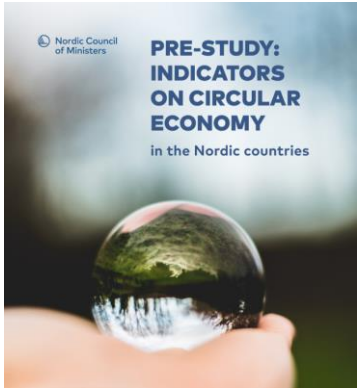
- Work continues ”The Bellagio Partnership”, Link

Nordic cooperation

- Circwaste contributed as Finnish best practices: Link

European cooperation in development of circularity monitoring

- EPA Network (Network of the Heads of Environmental Protection Agencies)



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What would you monitor?

Building regional and municipal circular economy road maps

Boosting the circular economy

30.9.2021

Hanna Salmenperä, Finnish Environment Institute

Circwaste-project receives financial support from EU for the production of its materials. The views reflected within the contents are entirely the project's own and the EU commission is not responsible for any use of them.

Strong national commitment

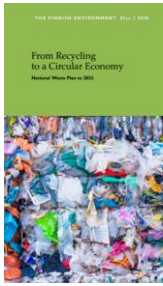
The program of Prime Minister Sanna Marin's government

Finland, a forerunner of the circular economy.

Government resolution on the Strategic Programme for Circular Economy 8.4.2021

Vision in 2035: Our economic success is founded on a carbon-neutral circular economy society

From Recycling to a Circular Economy – National Waste Plan to 2023



The Plastics Roadmap for Finland

Plastics road map in brief

Finnish road map to a circular economy 2016-2025

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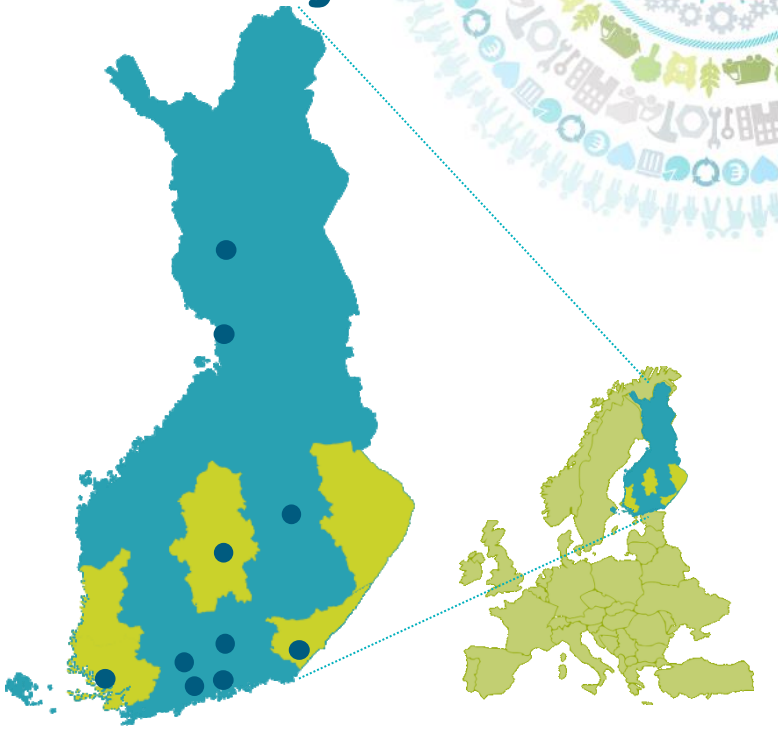
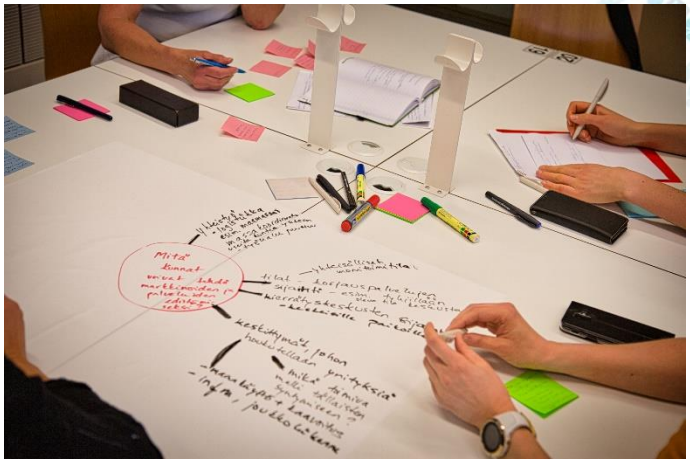
Regions and municipalities can act as accelerators of the circular economy!

- With strategic commitments, 4 regions and 10 municipalities have engaged in ambitious and concrete efforts to regionally achieve the goals of the NWP and CE
- CE Road maps > Varying time frame, target setting, focus areas and process



Road maps aim at launching processes for networking, activation and committing into common targets

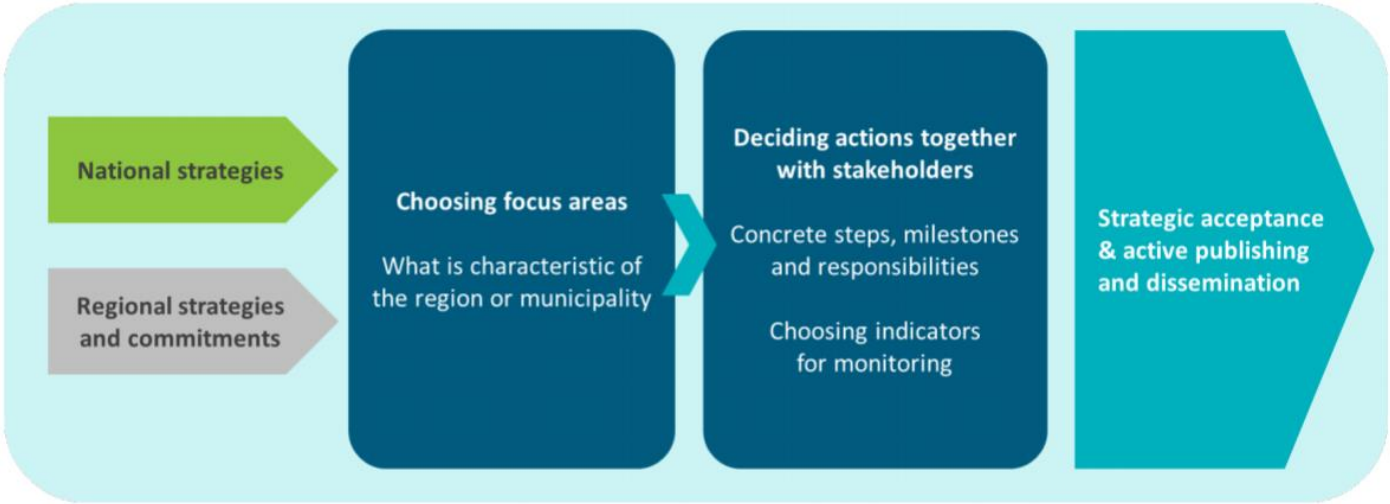
The starting point for roadmap work has been the identification of local strengths and special features.



Picture: Ville Jäppinen 2019

The road map itself isn´t the most powerful product but the discussions, cooperation and new activity – the whole process!

CE Road map – a tool for strategic commitments



The expert network of Circwaste has provided the facilitation for the work of compiling the CE road maps.

Road map work continues…

Follow-up of implementation and the impacts are evaluated.

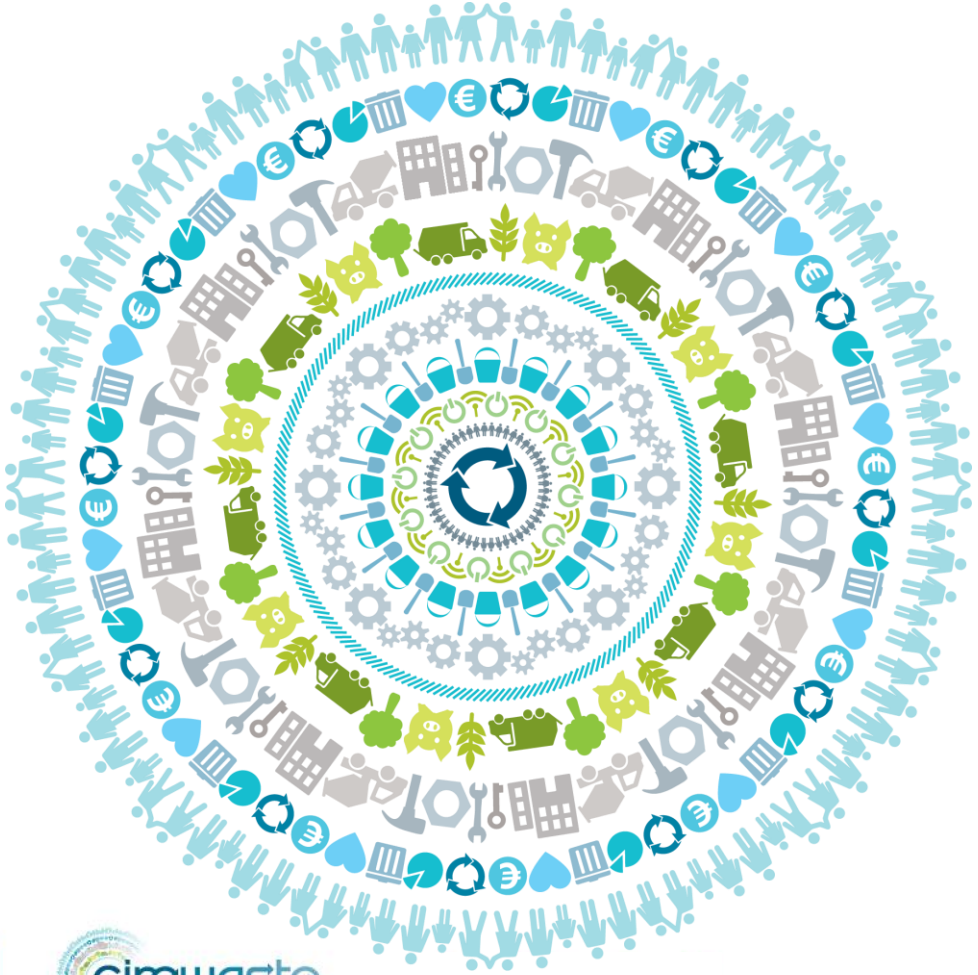
The road maps of the regions have been updated during the project with new priorities and concrete measures.

Replicability is easy and learnings will make it possible to create even better and more effective plans in the future.

Read more about road maps:

https://www.materiaalitkiertoon.fi/en-US/Goals_and_measures/Goals_of_municipalities_regions_and_businesses

https://www.materiaalitkiertoon.fi/fi-FI/Tyokalut/Kiertotalouden_tiekartat/Alueiden_tiekartat



Thank you for your attention!

More information:

www.circwaste.fi

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