Output factsheet: Strategies and action plans

Project index number and acronym	CE1125 CIRCE2020
Lead partner	ARPA VENETO - Agenzia Regionale per la Prevenzione e Protezione Ambientale del Veneto
Output number and title	OT1.3 Local plans for the prioritization of interventions
Responsible partner (PP name and number)	ATM PP6
Project website	https://www.interreg-central.eu/Content.Node/CIRCE2020.html
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Summary description of the strategy/action plan (developed and/or implemented)

The present document OT1.3 Local plan for the prioritization of interventions represents a summary of DT1.4.2 Local plans to prioritize interventions for the pilot region Tyrol. DT1.4.2 is based on the data collections and analysis built in DT1.3.2 (Report of the quantity of industrial waste in the CIRCE2020 industrial areas), DT1.3.3 (Report of the present destinations of industrial waste) and DT1.3.4 (M-scale analysis of the physical flows at local industrial system level). In a short way, this document summarizes the **process that leads to pilot cases identification**, from the recognition of waste production & destination to the physical flows maps. The present process to prioritize the interventions is also supported by a permanent consultation with local stakeholders (administrations located in the pilot regions, trade and industrial associations, environmental authorities etc.) to come to a shared hierarchy of waste flows to optimize and/or to close (in DT1.1.3 and DT1.4.1).

In order to select waste flows which are relevant for Tyrolean businesses in total 27 stakeholder interviews were conducted. The stakeholders represented regional administration, private companies, business support associations and universities. The interviews were carried out on a one-to-one basis, between December 2017 and May 2018. In addition to this feedback, the willingness of companies to cooperate and potential ideas for a circular solution were relevant criteria for the selection of in total 10 waste streams (**Errore. L'origine riferimento non è stata trovata.**).

For these 10 waste streams a material flow analysis (MFA) was carried out. For each of the ten waste streams several indicators and criteria were developed and evaluated in order to compare the current situation with a future alternative when the circular solution is implemented. As a result 5 waste streams were prioritized and 2 of them (Organic wastes; waste wood) will be subject to Life Cycle Assessments, Life Cycle Cost Analyses and Technology Readiness Scouting.

NUTS region(s) concerned by the strategy/action plan (relevant NUTS level)

The Austrian pilot region is the administrative province of Tyrol (NUTS 2 AT33, Figure 1), which has a population density of 59 inhabitants/km² (746,153 inhabitants; 12,640 km²). The strongest economic sector in respect to the economic output (gross value added) is the tertiary sector (services), with 70.5%, followed by the secondary sector (manufacturing), with 28.7%, and the primary sector (forestry and agriculture) with 0.8%.

Expected impact and benefits of the strategy/action plan for the concerned territories and target groups

Expected impact/benefit:

- Awareness raising for the topic of Circular Economy through mailings and personal interviews with 27 stakeholders

- Boosting Circular economy in the region by implementing pilot actions and thereby fostering competitiveness and innovation in the region

- Feasibility by committed company partners for the 2 pilot actions:

Waste wood: Only waste wood of the highest quality (clean and untreated) can be shredded and used to produce chip boards. All other waste wood is incinerated. The circular solution idea plans to use also waste wood of lesser quality in a wood gas power plant and to produce three products: heat, energy and activated bio-charcoal.

Organic waste from residual waste: The residual waste from households and similar establishments has 20% of organic content due to miss-placements. The circular solution plans to separate this organic content from the low calorific fraction in several steps and to use it for bio gas production in co-digestation in WWTPs.

Sustainability of the developed or implemented strategy/action plan and its transferability to other territories and stakeholders

Sustainability of the local plan to prioritize interventions will be provided with the transformation of the business as usual solutions for the 2 prioritized waste streams into circular solutions via the pilot actions (T.3).

Transferability is provided by the approach (Figure 2) and indicators (Table 2) applied, which can be easily replicated in different regions: In order to select waste flows which are relevant for Tyrolean businesses in total 27 stakeholder interviews were conducted. In addition, the willingness of companies to cooperate and potential ideas for a circular solution were relevant criteria for the selection of in total 10 waste streams. In a next step a material flow analysis (MFA) was carried out for the defined 10 waste streams. For each waste stream several indicators and criteria were developed and evaluated in order to compare the current situation with the circular solution.

Lessons learned from the development/implementation process of the strategy/action plan and added value of transnational cooperation

Data collection and availability

- Although all data regarding waste origin and destination is annually collected and managed within EDM, very strict data protection laws make it impossible to extract and analyse any of this information.
- For Austria and the Tyrol, available data are fragmented, have various different origins, sources, scales, reference bases, reference years, etc. The most recent and most complete overview is provided by the Austrian Waste Management Inventory (2017).
- In order to select waste flows which are relevant for Tyrolean businesses in total 27 stakeholder interviews (regional administration, private companies, business support associations and universities) were conducted. This approach was regarded as the most feasible method to approach stakeholders, in particular busy CEOs, high ranking officials from business support associations and from administrations.
- To approach relevant stakeholders, ATM was supported by the Tyrolean Economic Chamber.

References to relevant deliverables and web-links
If applicable, pictures or images to be provided as annex

DT1.3.2 (Report of the quantity of industrial waste in the CIRCE2020 industrial areas, ATM),
DT1.3.3 (Report of the present destinations of industrial waste, ATM)
DT1.3.4 (M-scale analysis of the physical flows at local industrial system level, ATM)
DT1.4.2 (Local plans to prioritize interventions, ATM)

Annex

	Waste streams	Waste producing enterprises	Economic sector	Circular solution idea
1	Waste wood	Several companies	Several	Wood gas power plant
2	Sheep wool, minor quality	Sheep Breeding Association	Primary production	Fertilizing pellets
3	Non-saleable vegetables (rejects)	Farmers	Primary production	Rejects retail / convenience food
4	Old bread	Bakery	Food production	Animal feed
5	Organic waste	Supermarkets, restaurants, hotels	Food production, gastronomy, tourism, retail	Production of regional soil
6	Grease trap waste	Restaurants, hotels	Gastronomy and tourism	Biodiesel
7	Sewage sludge	Wastewater treatment plants	Sewerage	Phosphate recycling
8	Filter cake	Paint producer	Chemical industry	
9	Sifted limestone (0-25mm)	Chemical producer	Chemical industry	Soil-pH neutralizer
10	Calcium carbide production residue	Chemical producer	Chemical industry	

Table 1: Selected waste streams for material flow analysis

Social/Moral	Is the newly created output product of moral and ethical relevance?
	Does the process of valorization create jobs?
Environmental	Waste hierarchy indicator as priority for waste management, with a potential waste hierarchy score of: 5 for prevention; 4 for preparing for re-use ; 3 for recycling ; 2 for other recovery; 1 for disposal
Economic/Companies	Is a partner structur existing / established across the entire process chain (producer, collector / processor, distributor / consumer)?
	Is there a market/demand for the new output product, preferably regionally?
Technical	Is the concept/idea technically feasible within the project duration?

Table 2: Indicators and criteria for the comparison of the current utilization solutions of the 10 prioritized waste streams with the circular solutions
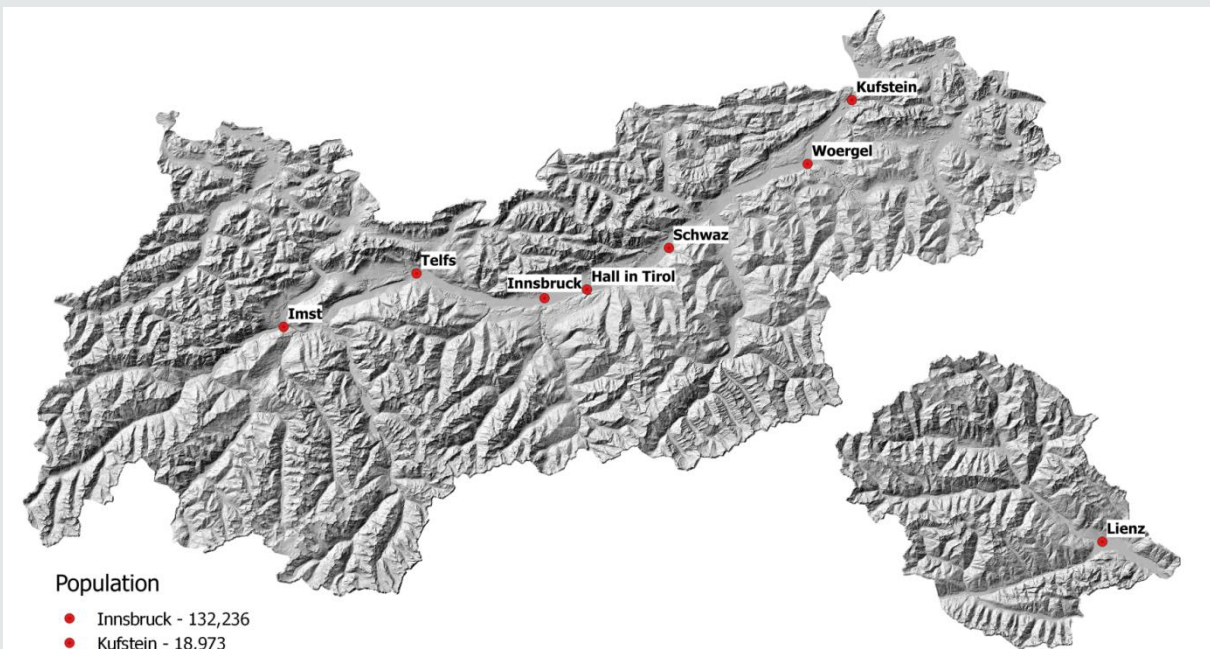

Figure 1: The pilot region Tyrol with the major cities and towns.

Figure 2: Work flow of the project steps. Indicated in red are the steps which were considered for the selection of the 10 waste streams