ZERO
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How to collect, sort, and reuse textile waste locally?

An overview of policy options for municipalities
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Contents

Executive summary

This paper provides an overview of good practices and lessons learned from the separate collection of textile waste across Europe. In view of the EU-wide mandatory separate collection of textile waste as of 2025, municipalities have the chance to align textile collection with the waste hierarchy and support a system of local reuse, particularly for clothing.

This process preempts the EU-wide introduction of the Extended Producer Responsibility (EPR) scheme for textiles, which is currently being negotiated at the EU level and is likely to become mandatory in all Member States after 2027. The examples here stem from a review of relevant literature as well as interviews with a range of actors managing the collection, sorting, and reuse of textile waste.

An optimised collection system can support the implementation of local zero waste solutions. While there is no one-size-fits-all solution, we have identified the following key success factors:

- *Good governance* is crucial for the success of the collection system. Municipalities have many levers at their disposal, but the implementation also depends on national laws and the wider policy framework, such as social policies that are linked to circular economy objectives, such as social economy support schemes. Municipalities should, however, require any collector to generate and report data as well as set performance indicators in line with the waste hierarchy and define public tenders accordingly (e.g. by granting privileged access to collection to social economy actors). Finally, the system must anticipate the introduction of EPR and the subsequent cost-coverage by producers.

- *The collection* must take into account local specificities such as urban or rural environments. Branded containers, collection in dry and supervised environments, as well as convenience for citizens can boost collection rates. Communication with citizens is key before introducing the separate collection.

- *Sorting for reuse* should be mandated and requires professionally trained personnel. To boost *local reuse,* actors must promote a culture of local reuse by, for example, providing space for more reuse stores and integrating repair and upcycling activities in the system.

Recommendations for municipalities

Whilst effective collection and reuse of textiles locally depends on the specific context, best practices are rare since this topic is just emerging for municipalities, and proper data and evidence are lacking, we can still define some key activities that will improve the quality of any policies introduced locally.

Therefore, this checklist should act as a guide for municipalities while further generation of local data remains crucial for the implementation.

- ☐ Increase the data captured on local textile waste flows by:

    - ☐ Gathering data from textile collectors on the volumes (kg and units) that are collected, sorted, and reused (locally and elsewhere, including exports) on a monthly and/or quarterly basis;

    - ☐ Making use of residual waste analysis to identify how much textile waste remains in the non-recyclable (residual) bin and also where within a city the biggest hotspots for textile waste generation are;

- ☐ Research and analyse the current collection system to identify who is collecting which waste stream and where. Which contracts exist already? How much is collected per collection point by weight and unit? Engage all relevant actors in this process to ensure they are properly embedded within any new textile waste prevention and collection strategy;

- ☐ Use the data collected from undertaking the previous two actions to define Key Performance Indicators (KPIs) for the new system; these can include targets for collection, preparation for reuse, and reuse, as well as objectives to inform citizens about the new system; the indicators should be aligned with the waste hierarchy and local sustainability strategy;

- ☐ Anticipate the introduction of a national Extended Producer Responsibility (EPR) scheme for textiles, to engage with the relevant national and regional authorities about what this may look like and the impact it would have locally. There might be an ongoing consultation or government guidance that could be considered in setting up the local system;

- ☐ Test the options for social economy support and integration of social enterprises in the system; e.g., is there a social inclusion policy that could be linked to circular activities? How to make sure public tenders use the possibility of including social criteria or reserving contracts to create a level playing

field for social economy actors? How to engage relevant social economy stakeholders in preliminary market consultations to ensure public procurement opportunities are accessible?;

☐ Clarify relevant definitions under national law such as 'textile waste', 'waste manager', and 'social enterprise' and ensure they are understood by all actors;

☐ Accredit suitable textile waste collectors, sorters, and reuse operators and draw up contracts that embed this accreditation as a requirement for any public service in these relevant fields;

☐ Create a communication strategy for promoting the system within the community that aligns with the waste hierarchy, prioritising refuse, then reuse and only then recycling, as well as social goals to improve livelihoods for community members;

☐ Consider playing a coordinating role in the collection system, liaising between different actors to make the system as transparent and accessible as possible;

☐ Set criteria for collection, such as supervised 'bring banks' (collection containers) to reduce contamination, and evaluate the use of alternative collection models (e.g. door-to-door collection) to target citizens who are difficult to engage (e.g. in rural areas);

☐ Mandate sorting for reuse and ensure that non-reusable textiles are recycled. Set targets for local reuse;

☐ Create a strategy for local reuse to flourish, which includes providing space for reuse centres and sorting, and encouraging the opening of new shops for reuse to ramp up capacity and integrate repair, refurbishment, and upcycling businesses within local strategies;

☐ Investigate how non-reusable textiles could be recycled and the material reprocessed with local or regional producers by engaging with relevant stakeholders like recyclers and textile producers;

☐ Check opportunities for partnership with other municipalities or regions to scale up the system;

☐ Provide feedback about the local experiences to the national authorities to facilitate the exchange of best practices and support a harmonised national system.

Figure 1: Example of how a collection and sorting system for textiles can be set up by municipalities

Example of a textile collection and sorting system setup
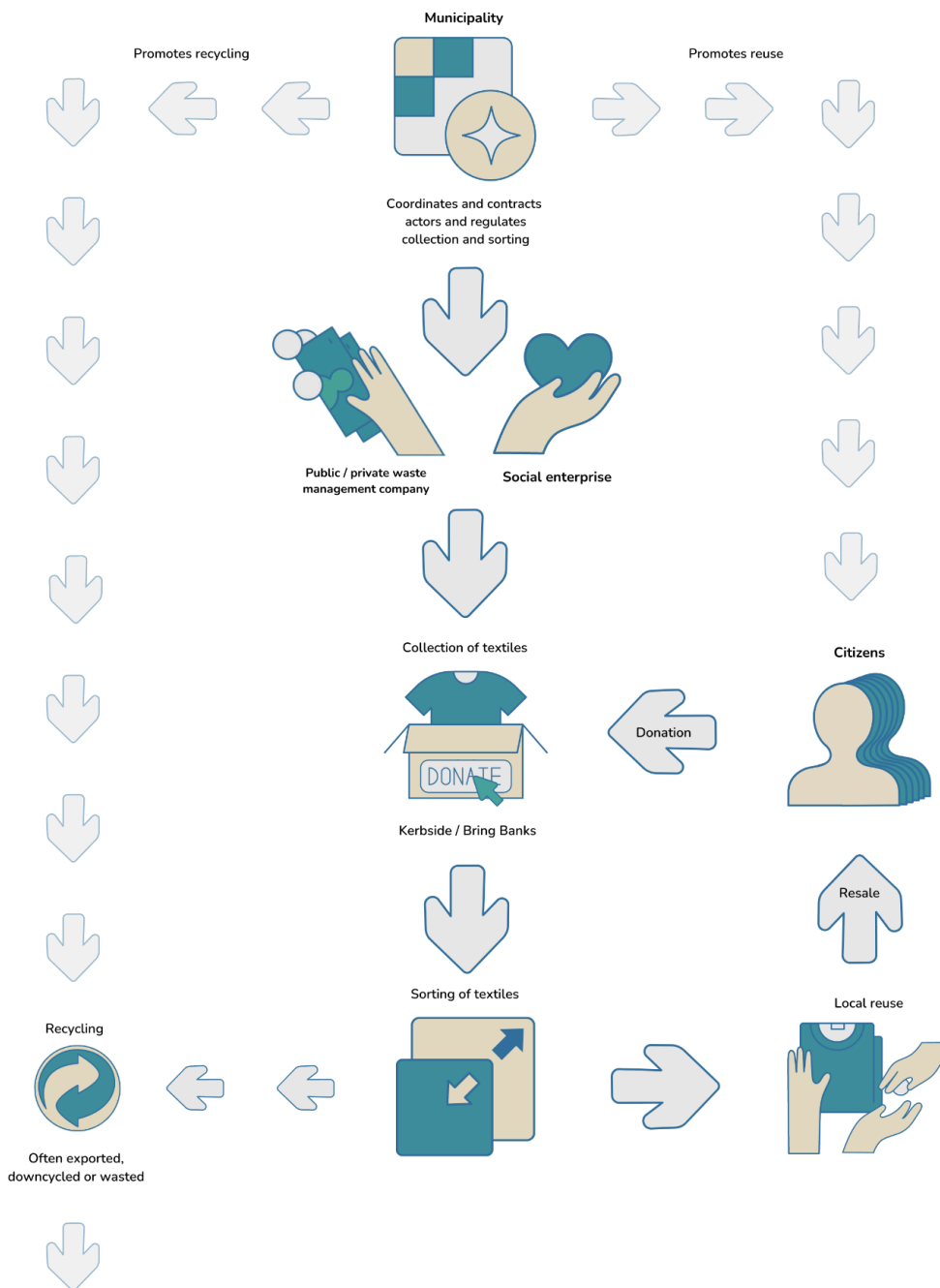
Description: This infographic gives an overview of the key steps and actors involved in setting up a local structure for the collection, sorting, and reuse of textiles. While municipalities play a central role in setting up the structure when contracting the partners and promoting local reuse, there are also factors that lie outside of their influence, such as what happens to textiles not fit for reuse; these should be recycled, but often end up downcycled, exported, landfilled, or incinerated.

Introduction

The separate collection of textile waste will become mandatory in the EU as of 1 January 2025[1] to enable better reuse and recycling. Many municipalities will be required to ramp up their collection capacity, while others already have systems in place that redirect used clothes, household textiles and other textile 'waste' away from incineration and landfilling and towards reuse and recycling.

This paper compares different case studies across Europe and reviews existing literature on textile collection, sorting, and reuse. It aims to showcase good practices, highlighting do's and don'ts for cities and municipalities. While this list is not exhaustive, we hope it can guide decision-makers towards making the most out of the resources available locally, helping to create systems that prioritise reuse. For the making of this report, ZWE ventured out to investigate the existing collection, sorting, and reuse systems across the EU. We are highlighting examples from Finland, Spain, and Belgium below, as well as a variety of actors involved in operating successful systems for collection. Evidence shows that there is no single optimised system in place that we would like to promote exclusively. Instead, it very much depends on the local context which system or actor delivers the best outcome.

Data on textile collection is scarce. For 2020, the JRC estimates that between 1.7 and 2.1 million tonnes of textile waste was collected in the EU-27. **However, there are significant differences between regions, from 0.3 kg per capita in Latvia to 8.3 kg per capita in the Flanders region of Belgium.**

Currently, the EU plans to mandate the introduction of a harmonised Extended Producer Responsibility (EPR) scheme for textiles. While the details are still being negotiated by the time this report is published, some cornerstones seem already clear: producers will have to pay for the costs of collection for preparation for reuse and recycling; transport; sorting for reuse; disposal; carrying out compositional surveys; providing information on sustainable consumption, waste prevention, reuse, preparing for reuse, recycling, other recovery and disposal; data gathering and reporting to the competent authorities; and research and development to improve the sorting and recycling processes.[2] While the exact timeline is still uncertain, the scheme will likely become mandatory several years after the introduction of mandatory separate collection of textiles in 2025. Unless a member state has already adopted an EPR scheme nationally, like France or the Netherlands, there will be a significant gap in which municipalities will have to step in to cover the costs of collection.

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[1]: DIRECTIVE 2008/98/E defines in Article 3(11) 'separate collection' means the collection where a waste stream is kept separately by type and nature so as to facilitate a specific treatment; Article 3(16) 'preparing for re-use' means checking, cleaning or repairing recovery operations, by which products or components of products that have become waste are prepared so that they can be re-used without any other pre-processing; see Article 11 (1) and Recital 42 on separate collection of textiles.

[2] European Commission (2023) Proposal for a targeted revision of the Waste Framework Directive, Article 22a, paragraph 4.

The European Environmental Agency notes that increasing separate collections does not always result in an increase in reuse. Good-quality textiles are already being reused, while lower-quality textiles often end up being discarded or exported. As a result, increasing collection rates would result in more textiles ending up being recycled, incinerated, or exported and potentially mismanaged.[3] ZWE identified the key drivers of the textile waste crisis as fast-changing fashion trends (fast fashion) and business models depending on the overproduction and overconsumption of clothing, driving sales by aggressive marketing.[4] The European reuse market is saturated to such a degree that many garments are exported, causing pollution of air, land, and water in recipient countries.[5][6] **Introducing measures that improve the design, prolong the use of clothing, and address physical as well as emotional durability, are therefore paramount.**

For most European municipalities, adopting waste prevention policies would be beneficial and can save costs within the wider waste management budget. Several examples of Zero Waste Cities from across the continent already prove this.[7] People in cities own more pieces of clothing than people in rural areas,[8] hence, cities play a central role in awareness-raising for waste prevention and a reuse and repair culture.

Overview of policies
Governance

The first step in setting up a successful system for the separate collection of textile waste is to establish a local governance structure that supports the goals of zero waste. The official EU guidance on separate collection of municipal waste[9] already provides a good overview of some key factors. The guide suggests that municipalities should require the accreditation of material collectors in their city to prevent theft and mistreatment. Moreover, public tenders for collection should include minimum requirements for reuse, traceability and reporting of data as well as minimum density requirements of bring banks. As second-hand stores are currently the main collectors, sorters, and selling points of pre-owned textiles, the established infrastructure must be taken into account when administering the collection system. Today, collection is mainly funded by the revenues from reusable textiles, which is becoming increasingly less viable due to the huge supply of cheap, low-quality, new textiles, meaning second-hand stores can only charge low prices. The collection of non-reusable textiles is currently not economically viable due to the lack of textile recycling capacity and

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[3] European Environmental Agency (2021) Progressing towards waste prevention in Europe – the case of textile waste prevention.
[4] Zero Waste Europe (2023) T(h)reading a path: Towards textiles waste prevention targets.
[5] European Environmental Agency (2023) EU exports of used textiles in Europe's circular economy.
[6] Changing Market Foundation (2023) Trashion.
[7] Zero Waste Cities.
[8] Maldini, Iran, Laitala, Vitterso, Jestratijevic, Amaral, Vladimirova (2021) Dress and the city: a comparative study on clothing and textiles environment policy in five European cities, published in 20th European Roundtable on Sustainable Consumption and Production.
[9] European Commission (2020) Guidance for separate collection of municipal waste.

demand for recycled fibres.[10] However, some municipalities have been able to turn textile collection into a source of revenue by charging fees to collectors for the setting up of collection containers in the municipality.

A recent study by ACR+, which showcases good practices of locally used textiles management based on evidence from the Brussels region, highlights the general lack of data on textile waste and reuse given the variety of actors involved and the absence of EPR schemes in most European territories. This lack of comparable data poses a challenge to identifying the best-performing systems.[11] Municipalities must therefore first gather data on how much collection capacity is required, based on the combined volume of textile waste currently being collected and found in the residual waste stream. Once EPR for textiles is introduced, national authorities must ensure Producer Responsibility Organisations (PROs) are meeting the reporting requirements. In the meantime, local authorities should create guidelines for all actors on measuring textile waste by weight and unit (tracking shoes and accessories separately). Data should be collected monthly and quarterly and include information on the final destination of textiles, i.e. how much is reused locally, recycled, or exported, as concluded by TEXroad, a project between several municipalities in Estonia and Humana.[12] Another study on post-consumer textile circularity in the Baltic countries showcases how data on textile waste flows can be collected at national and local levels. The authors used questionnaires targeted at municipalities and waste collectors to determine material flows (examples can be found in the annexe).[13] To further improve the availability of data and monitoring, waste compositional analysis should be carried out annually. This helps to target interventions on textile items most likely to end up in residual waste. Slovenia already mandated an annual compositional analysis in 2018.[14] The composition of residual waste is a valuable source of information to assist with comparing and combining percentages in residual waste with tonnages of separately collected materials. It can inform decision-making and facilitate redesigning materials that cannot be recycled.[15]

Since social enterprises already play a huge role in the collection, sorting, and reuse of textiles, they must, therefore, be consulted in the process. To include several existing social enterprises and prevent competition, municipalities could coordinate the collection for social enterprises through a central collection system and introduce requirements to access this system in public tenders; requirements could include local reuse targets and social employment. The development of local quality labels for collection, e.g. underlining the charitable cause for collection, could also assist in improving public trust and transparency.[16] Moreover, the role of

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[10] European Commission (2020) Guidance for separate collection of municipal waste.

[11] ACR+ (2023) Recommendations and good practices for local used textile management.

[12] Municipalities Saku and Lääne-Harju in collaboration with Humana and TEXroad (2023) Post-Consumer Textiles: Lessons Learned and Guidelines for Municipalities.

[13] i: see the Appendix of Nordic Council of Ministers (2020) Post-consumer textile circularity in the Baltic countries Current status and recommendations for the future.

[14] Official Gazette of the Republic of Slovenia, no. 33/17 , 60/18 and 44/22 – ZVO-2 Uredba o obvezni občinski gospodarski javni službi zbiranja komunalnih odpadkov.

[15] Zero Waste Europe (2020) Building a bridge strategy for residual waste: Material Recovery and Biological Treatment to manage residual waste within a circular economy.

[16] RREUSE (2023) Valorising used textiles locally through re-use and recycling activities: The contribution of social enterprises.

economic incentives like VAT reductions on donations and resale to offset the costs of collection and transport, as well as the inclusion of disadvantaged groups via wage support schemes should be considered.[17]

Lastly, one study identified some other barriers for local authorities, such as the lack of sorting capacity, and the lack of strategies and coordination between actors. The authors recommend monitoring of all actors; including maintenance services in the system; clarifying the role and responsibility of all actors; setting up measures to prevent illegal activities.[18]

Collection

Available literature today provides ample suggestions on how to improve collection of textiles, albeit with the reservation that data is not comparable and success depends highly on local circumstances. Sometimes the conclusions of different authors are even contradictory, hence, municipalities are best advised to investigate their local needs before implementing a new system.

One of the highest rates of textile separate collection without EPR is found in Germany: 75% of what is placed on the market is separately collected according to EU data. This success can be put down to a longstanding tradition and, therefore, embedded behaviour towards donating clothes to charity via street containers, an infrastructure which is well-developed in German cities by now.[19] The collection of used clothes is mostly free-of-charge in Germany for the operators since the costs of collection and sorting are covered by sales revenues of second-hand clothing.[20] The clothes take different routes depending on who collects them – actors can be charitable or commercial as well as local authorities. In Germany, the 'FairWertung' sign was developed to indicate to citizens that the clothes collected would go towards charitable collections.[21]

The EU guidance on separate collection notes that a combination of door-to-door collection several times per year on top of public collection points, mobile units, collection in public buildings, clothing shops, and reuse centres should be implemented according to the local specificity and urban typology. To engage citizens, collection points must be placed in a safe environment that is convenient and easily accessible. To reduce contamination to a minimum, door-to-door collection or supervised collection points deliver the best results. While operating these collection systems incurs higher costs, this could be offset by a higher value of reusable clothing and having far less mixed waste to dispose of. However, evidence shows that combining door-to-door collection of textiles with other dry recyclables, such as paper, can lead to theft from the kerbside collection containers and is more difficult to monitor. To avoid contamination in bring banks, they should be placed away from containers for waste, and donations should be encouraged only in sealed bags. To improve public

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[17] European Commission (2020) Guidance for separate collection of municipal waste.

[18] ACR+ (2023) Recommendations and good practices for local used textile management.

[19] European Commission (2020) Guidance for separate collection of municipal waste.

[20] FairWertung (2023) Second Hand – Second Thoughts?

[21] FairWertung (2022) Sammlungen.

awareness, the authors recommend running a survey prior to implementation to capture citizens' needs. The use of a common 'branding' for all collection points can further boost awareness and transparency.[22]

ACR+ highlights that limited space in urban areas is an issue for collection and recommends coordinating a network of textile banks but also investigating the use of alternative collection methods, particularly when targeting underperforming areas. Other success factors are transparency regarding the destination of the donations, the density of collection points, their visibility and accessibility. Increasingly, some actors are beginning to introduce modern technology to help optimise collection, such as the use of sensors to measure when a container is full. Also, cleanliness of the surrounding area and safety (e.g. lighting at night) were mentioned as important issues. Mobile collections or door-to-door could help engage more challenging populations and there is also some weak evidence suggesting that door-to-door collection in bags has increased overall capture rates in the cities where it was implemented. The city of Graz in Austria distributes "Re-use Boxes" or "Re-use Bags" in second-hand stores to encourage residents to donate their reusable products in the shops. However, differentiating between reusable and non-reusable for collection does not generate better results, as sorting mistakes are common and make it more complicated for citizens to engage.[23] Any tender should, therefore, keep it simple and sort collected textiles afterwards.

WRAP UK published a textiles collection guide highlighting success factors for different collection systems. If kerbside collection is used, awareness-raising and convenience are key. Therefore, information on which items are accepted, e.g., clothes, shoes, and household linen, must be provided and collections are best done with transparent containers to identify and reject non-compliant items from households. To prevent theft, placing donations on the day of collection as well as awareness raising about licenced collectors to households is key.[24]

Sorting

Once an appropriate collection system has been put in place, the next big challenge is the sorting process. **The sorting of textiles is incredibly important as it defines the quality and volume of the end output of textiles, whether for reuse, repurpose, or recycling**. Therefore, a high-quality sorting process must seek to prepare the collected post-consumer textile waste for reuse or, if reuse is not possible, for recycling. Sorting textile waste can be a complex procedure that usually comprises numerous phases and was summarised in a recent Euric study as follows, with the following requirements having to be met in order to achieve high-quality sorting:

1. Firstly, during the sorting process, higher-quality fractions (reusable textiles) must be thoroughly separated from lower-quality recycling fractions and any foreign materials such as plastics, metals, and so on;

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[22] European Commission (2020) Guidance for separate collection of municipal waste.

[23] ACR+ (2023) Recommendations and good practices for local used textile management.

[24] WRAP UK (2016) Textiles Collections Procurement Guide.

2. Secondly, the appropriateness for reuse or recycling should be manually examined by a qualified professional who has received task-specific training. In compliance with the Waste Framework Directive's waste hierarchy, the trained expert must manually evaluate the suitability for reuse or recycling of each individual piece put into the sorting process;

3. Thirdly, it is necessary to ensure the sorted and bundled textiles are correctly tagged (due to a lack of consistent criteria, plant-specific codes may be used).[25]

This process requires trained sorters who know how to sort into many different categories, a capacity that is lacking in many regions.[26] The sorting of collected textiles is time-intensive and thus increasingly moved to jurisdictions with lower labour costs[27], making local reuse more challenging. For example, due to a lack of capacity in Germany, clothes are exported to Poland. It is, therefore, worthwhile to include and boost local reuse and recycling initiatives that generate revenues and/or include social economy actors that may benefit from government social support schemes to finance local sorting. As soon as EPR schemes are implemented EU-wide, the sorting costs will have to be covered by textile producers, bringing down the costs for municipalities in the long term.

There is a distinction between 'negative sorting' - a superficial sorting process during which obviously foreign bodies and impurities are removed; 'partial sorting' - which comprises of a 'manual removal of valuable, wearable and saleable products' and 'full sorting' - a process in which all clothing is screened carefully. Full sorting being the most expensive, this process is often undertaken in countries with lower wages. Full sorting requires specific knowledge about brands and trends. In a Dutch sorting plant, for example, an average of 2,775 kg are sorted per employee per day, with the employee only having a few seconds to decide in which category (of up to 200) an item belongs. Depending on demand, clothes sorted in the highest or second highest categories will go on sale. The waste status[28] ends after sorting according to EU law, and different sorting plants currently apply different categories.[29]

This section has provided an overview of the sorting process and the considerations European municipalities must have when deciding on who and how textile sorting should be managedlocally. The role of a local authority should focus on setting the right procurement procedures and criteria in place for external companies to apply for rather than centralising the sorting process in-house. If done right, whilst it may involve upfront costs, sorting textiles is an economically beneficial procedure for municipalities to monitor - investing in getting quality textiles out of the waste stream and instead prepared for reuse or repurposing can both save costs by having fewerdisposal fees and by increasing potential revenues from selling these higher-value

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[25] Euric (2023) LCA-based assessment of the management of European used textiles.

[26] ACR+ (2023) Recommendations and good practices for local used textile management.

[27] FairWertung (2022) Sammlungen.

[28] i: this means the waste becomes a product after 'preparing for re-use', as defined in Article 6 of the WFD, however, this is subject to the transposition into national law.

[29] FairWertung (2023) Second Hand – Second Thoughts?

materials. With a view of EPR fees covering the sorting costs in the future, the cost will decrease in the long term.

Reuse

Just because an item is put on sale, it does not mean that it is actually resold, as the sector struggles with steep competition from cheap and trendy fast fashion clothing. Reuse actors have nonetheless developed many creative ways to better market their second-hand products, like outlet stores, swapping and upcycling initiatives, and e-commerce platforms.[30] To boost local reuse, some collection and sorting actors have teamed up with private companies to sell their sorted second-hand clothes in their stores. Zeeman and the social enterprise Het Goed, for example, cooperate on that level in the Netherlands.[31]

Supporting these outlets should be part of a local strategy for textile reuse, particularly supporting low-income areas but also integrating existing social community spaces in circular initiatives like clothes swapping, resale, upcycling and repair activities. Specific repair activities could be organised for work clothes but also public procurement plays a role.[32] For example, it is important to note that the reuse of household and professional textiles are very different. While professional textiles such as bed linen, uniforms, and protective equipment (PPE), only make up a small amount of overall textile waste, they require certain technical and safety standards which limit the options for reuse. A local strategy and public tenders for circular procurement could support the reuse of these items.[33]. Furthermore, municipalities should seek to create a local reuse culture to increase demand for second-hand goods, for example by distributing subsidies or vouchers to encourage citizens and businesses to reuse and repair textile items more.[34] RREUSE highlights the benefits that the inclusion of social enterprises can bring to the system like delivering circular skills to vulnerable individuals and building local communities by local textile valorisation.[35]

Recycling

While reuse should always trump recycling, local recycling of non-reusable items should still be considered as a means of redirecting textiles, often made from fossil fuels, away from incineration or landfilling. Recycling fibre-to-fibre remains challenging and while scaling recycling capacity, innovation and better design are necessary, in the meantime, waste managers deal with large volumes of low-quality garments - material that should be recovered. There are a few examples of local textile recycling activities, one is Hilaturas Arnau Barcelona who in collaboration with the Waste Agency of Catalonia developed the recycling of high-quality

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[30] RREUSE (2023) Valorising used textiles locally through re-use and recycling activities: The contribution of social enterprises.
[31] Zeeman (2023) Resale.
[32] RREUSE (2023) Valorising used textiles locally through re-use and recycling activities: The contribution of social enterprises.
[33] ACR+ (2023) Recommendations and good practices for local used textile management.
[34] ZWE and RREUSE (2021) Putting second-hand first to create local jobs.
[35] RREUSE (2023) Valorising used textiles locally through re-use and recycling activities: The contribution of social enterprises.

yarn based on post-consumer recycled wool to be incorporated into local production.[36] [37] ACR+ highlighted that monitoring the development of new recycling routes and collaboration with industrial textile recyclers is necessary to move away from incineration. To this date, it remains economically viable to set up recycling systems transnationally across the EU.[38] Yet, this poses tough challenges to creating an optimised system where materials are kept locally or even nationally for recycling or upcycling activities.

Case studies

We are showcasing here some examples of successful local systems for collection and sorting of textile waste without EPR schemes in place. Information is mainly derived from personal interviews with representatives of the organisations presented here. Please note, that there is no single optimised system in place that we would like to promote exclusively. It very much depends on the local context which system or actor delivers the best outcome. Municipalities should, however, consider the social benefits for the local community alongside circular outcomes. We showcase here a variety of actors involved in textile collection and sorting in different geographical areas.

Helsinki region, Finland

Who operates the system?
In Finland, separate collection of textile waste has been mandatory since 2023.[39] The environmental service of the greater Helsinki region (HSY)[40] began implementing pilots for the collection and sorting of textiles in 2019.

How does this actor work with municipalities?
HSY itself is a municipal body providing water and waste management services as well as information on the environment in the Helsinki Metropolitan Area, including the cities of Espoo, Helsinki, Kauniainen, and Vantaa.

How does the textile collection and sorting system work?
Clothing and textiles have been collected for reuse and recycling at outdoor Sortti Stations since 2019, subject to a charge, and at free-of-charge collection points in ten shopping centres.[41] However, the output of collection from the outdoor Sortti services was significantly lower than that of the free-of-charge indoor shopping centre collection due to contamination with dirt and moisture. The outdoor collection of textiles was therefore recently terminated. The HSY sorting guide instructs citizens to only donate dry clothes and household textiles like jackets, trousers, shirts, sheets, towels, and tablecloths; all must be tightly packed in plastic bags or sacks

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[36] RREUSE (2023) Valorising used textiles locally through re-use and recycling activities: The contribution of social enterprises.

[37] Hilaturas Arnau.

[38] ACR+ (2023) Recommendations and good practices for local used textile management.

[39] 978/2021 Waste Decree, pursuant to the decision of the Government, under the Waste Act (646/2011).

[40] Helsinki Region Environmental Services HSY.

[41] HSY (2023) Clothes and textiles.

to prevent contamination. Socks and underwear are not accepted.[42] In addition, the housing company of the city of Vantaa, VAV Group, teamed up with a textile recycler to start a trial of door-to-door collection on their own properties. Collection containers were installed next to the collection points for other waste streams in the buildings and collection rounds take place at least once a month. The containers are also equipped with sensors that alert the collection company, Suomen Tekstiilikirättin, when containers need emptying.[43 44]

The first round of sorting for reuse of the textiles collected in Helsinki takes place in the Kivikko waste service centre, a service provided by a company based on public tender. Next, the textiles are sorted according to quality, fibre, and recyclable material with the use of scanning technology, and non-reusable items are sent to the Lounais-Suomen Jätehuolto Oy (LSJH) recycling plant in Turku for further sorting and processing. The plant mechanically processes end-of-life textiles into recycled fibre and is part of a Telaketju public-private partnership project.[45] While the recycling of textile waste receives huge support under this regional setup, the Finnish waste law clearly prioritises reuse over recycling, bringing additional benefits to local charities and vintage markets.

What are the challenges according to the actor?

The project is currently in limbo due to the expected but delayed EU-wide mandatory and harmonised EPR for textiles. HSY is hesitant to expand the infrastructure because of the high costs it incurs for the municipality, while hoping the costs will be covered by producers soon while simultaneously raising concerns that municipal interests could be sidelined when producers organise the collection.[46] Moreover, as sorting companies are charged for sorting mistakes, there could be an incentive to classify fewer items as reusable or recyclable. Finally, while this is a great initial step, the recycling capacity of Finland still has to be ramped up to better match the amount of textiles sorted for recycling, a project that is currently on hold until the rules for EPR become clear. Recyclers underline that as long as there is a market for recycled fibres, there is an interest to boost collection rates.[47]

Humana in Spain

Who operates the system?

Humana is an important actor for textile collection and reuse in Spain.[48] Humana, Fundación Pueblo para Pueblo, has been active for over 30 years in the reuse and resale of clothing, and on top of this, has carried out

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[42] HSY (2023) Clothing (damaged).

[43] VAVGroup (2023) Textiles for circulation! We are testing textile collection in our properties.

[44] i: Another interesting pilot for an incentive-based clothing collection system in Finland is underway in the city of Lahti, outside Helsinki region. In this project, citizens are incentivised to bring their used clothes to collection points in return for vouchers for local services. Find more information here: Lahti.

[45] telaketju (2023) Business from circular economy of textiles.

[46] Uusiouutiset magazine (2023) Harmonized producer responsibility coming to textiles - "I'm 99 percent sure".

[47] Uusiouutiset magazine (2023) Information about textile producer responsibility renewed LSJH's plans - "This autumn it will be decided whether the Topinpuisto processing plant will be realized".

[48] HUMANA Spain.

international cooperation programmes for development, awareness-raising, and urban agriculture projects in Spain. Humana is a private company and, therefore, does not benefit from any government subsidy scheme for social enterprises that would, for example, provide wage support for the employment of underprivileged groups.

How does this actor work with municipalities?

Humana is certified by many Spanish municipalities for the collection of textiles. In Spain, any actor operating collection points, such as street containers, must first reach an agreement with municipalities. The implementation of systems for separate collection is at around 95% of municipalities, as the collection generates revenue for the municipality.

How does the textile collection and sorting system work?

Humana mainly collects via public containers in the streets; however, in Catalonia, they also run a door-to-door system, which is more expensive. Humana observed that the collection output of the door-to-door system is not significantly higher than that of containers. According to their experiences, to ensure high quantity and quality it is best to operate collection points in shops. The location of containers varies from public to private spaces, such as malls, parking lots, or supermarkets, that provide an accessible service to consumers. Moreover, it is key to engage citizens and raise awareness; therefore, Humana uses branded containers to underline the social purpose of donating clothes. For the subsequent sorting, Humana runs its own sorting centre in Ametlla del Vallès in Barcelona.[49] While technological advancements for textile sorting are emerging rapidly in the sector, Humana still puts a lot of emphasis on manual sorting by their own employees, qualified professionals who receive six months of training, especially to fulfil Humana's own complex sorting criteria. When it comes to reselling the sorted garments, it highly depends on trends in the different counties if items are sellable. Products are offered online and offline in Humana shops. In 2021, 17% of the collection in Spain was operated by Humana. 75% were sorted in Humana's two sorting facilities in Barcelona and Madrid, while 25% were sorted outside the EU. Overall, 17.2% of textiles prepared for reuse were given a second life in Europe, while the rest were exported, posing questions about the traceability of reuse happening in recipient countries. Humana estimates that for every 30 tonnes of clothes collected, one green job is created in Spain.

What are the challenges according to the actor?

The new Spanish waste law requires municipalities to tender at least 50% of the collection capacity to 'social economy enterprises',[50] which is a good example of strengthening social economy actors. According to Humana, a potential issue arises here for businesses when municipalities tender 100% of collection at once. This excludes organisations not falling under the definition of 'social economy enterprise'. Moreover, while the waste law established targets for reuse, the regions only have weak systems to monitor it.

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[49] HUMANA (2022) Barcelona Metropolitan Area visits the Humana sorting center in Ametlla del Vallès.

[50] Spanish 'Law on Waste and Contaminated Soil for the Circular Economy' - Ley 7/2022, de 8 de abril, de residuos y suelos contaminados para una economía circular (Available here).

Kringwinkel, Flanders region, Belgium

Who operates the system?

Kringwinkel in Flanders is a non-profit organisation; all profits from sales are invested in maintaining the operation and providing employment. Kringwinkel's main mission is to create job opportunities for disadvantaged groups, and the social enterprise currently employs more than 6000 people. Flanders is quite experienced when it comes to the separate collection of textiles and regulating social enterprises. The Flemish government's scheme to support social enterprises covers 48% of the resources Kingwinkel requires to maintain its operation, primarily in the form of wage support, while 52% of the resources come from profits from sales. In Flanders, supporting social economy actors leads to long-term savings on social benefits for the government.[51][52] Kringwinkel represents the biggest actor among social enterprises in the region, and the sale of reused textiles generates the largest share of revenue among all second-hand goods sold at Kringwinkel.

How does this actor work with municipalities?

Flanders' institutional framework recognises one reuse centre per region by the waste agency OVAM to avoid competition between reuse centres. Every 'operational area' (27 in total) recognises one centre under specific criteria, such as 50% reuse, non-commercial operations, and social employment goals. Moreover, every local authority must have a formal cooperation agreement with at least one reuse centre. Flanders also has a reuse target of 8 kg/capita that must be realised through reuse centres. Reuse centres receive their funding mainly from the Flemish social economy initiative in the form of wage support for disadvantaged groups.

How does the textile collection and sorting work?

Kringwinkel Antwerp cooperates with 'De Collectie',[53] a branded collection system for second-hand clothes run by five social enterprises in Antwerp. Clothing, shoes, accessories, and home textiles are collected via the drop-off points, explicitly accepting damaged items that are no longer suitable for reuse, as well as reusable goods. In addition, Kringwinkel Antwerp offers collections from residents' homes. While De Collectie uses the typical street containers, they are only set up in monitored public and private spaces that offer a certain degree of social control, like shops, container parks, and private parking spaces, to prevent contamination. While this kind of bin still lends to a lower quality, it proved more practical.

To sort the collected textiles, Kringwinkel operates a central plant in Antwerp and employs professional sorters. While there is room for technical innovation, like scanners to identify fibre composition and size, manual sorting cannot be replaced to assess the quality of a garment and spot stains or holes. The textiles are sorted into different categories, while only the items labelled 'good quality' are placed in local reuse shops. The other items are destined for export, and non-saleable textiles are recycled. They work with a local private sorter

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[51] De Kringwinkel (2023) FAQ.

[52] i: More information on the Flemish social economy is available here: sociaal.net/achtergrond/job-sociale-economie-brengt-op/

[53] DeCollectie (2023) Aan huis je textiel laten ophalen.

actor, which allows Kingwinkel little oversight over exports, a setup they aim to reach greater control over in the future.

Finally, products are marketed via Kringwinkel shops and online platforms. New deliveries to shops from the sorting plant are commissioned as soon as a category of items is sold out; however, the capacity to stock items in the sorting centre is limited. In total, Kringwinkel runs 21 autonomous reuse centres and more than 130 second-hand outlets.

What are the challenges according to the actor?

One challenge of the system is that there is too much reusable women's clothing that does not actually sell. A potential future challenge may arise when the EPR for textiles is introduced: the social sector could be sidelined in the new system, while recycling could take precedence over reuse in case it can provide higher value generation.

Conclusion

This report has presented some of the existing best practices for collecting and sorting textile waste that prioritise reuse. It should serve as an informative guide for municipalities who will be in the process of deciding how to best set up their own separate collection schemes for textiles, which will become mandatory across the EU as of 2025. Only with optimised collection systems can textile waste be diverted from landfill and incineration and prepared for reuse and recycling. If municipalities regard textiles as a resource creating revenues for social enterprises, reuse businesses, or recyclers and providing local jobs, it becomes obvious that setting up an optimised collection system is worthwhile.

Some of the key findings derived from the non-exhaustive list of case studies presented here include:

- ***Governance:*** Successful systems depend very much on a smooth relationship between the local governance structure, national laws, and the wider policy framework. For example, it can make sense to run the system by a public waste agency, social enterprise or private company - depending on the local context. Social policies can be linked to circular economy objectives to create employment opportunities and boost local reuse. Municipalities can decide to support social economy actors by tendering a significant amount of the collection to social enterprises. Any system should take into account the introduction of EPR and subsequent cost-coverage by producers. Municipalities must certify specific actors for collection to prevent mismanagement and mandate data reporting requirements. The management of actors involved should consider whether a monopoly in the collection would be beneficial or harmful. Coordinating the collection of several actors can have significant benefits for the transparency and simplicity of the system and for engaging more citizens. Finally, setting (local) reuse targets can steer the system in the right direction and should be embedded within a wider strategy for waste prevention.

- **Collection:** While there are many local specificities to consider, the overall takeaway of this study is that collection should happen in branded containers, preferable in dry, clean, safe, and supervised environments that are convenient for citizens and provide clear information on what to donate. Bring banks and other alternatives should be adjusted to the needs of the population. Different reuse actors could share one branded collection system while pointing out the environmental and social benefits of reuse, which can help increase citizen engagement.

- **Sorting:** Professionally trained personnel to sort for reuse are still necessary despite technological advancements. Clear sorting guidelines should be established and best harmonised across the state or region. This labour-intensive process can be supported by social economy support for enterprises employing workers with difficulties accessing the regular job market. Sorting for local reuse is preferable, while including textile recyclers in the process can have benefits for scaling this technology.

- **Reuse:** Most reuse actors are charities and social enterprises; municipalities should therefore seek to increase the capacity of the existing system, while also looking for ways to further promote a culture of local reuse by, for example, by setting a minimum threshold in the public tender for collection to be granted to social enterprises; providing space for more reuse stores, repair, and upcycling activities and bringing textile reuse to existing social spaces. As reuse competes with cheap fast fashion clothes, communication campaigns should be utilised to raise awareness of the benefits to the local community.

Further research and pilots in this field should seek to produce reliable and comparable data as well as consider the effects of different systems on the social economy sector. The introduction of EPR systems should be encouraged but has to take into account already established local ecosystems for textile collection and reuse. EPR for textiles, therefore, bears many opportunities but also potential challenges: on the upside, the increased financial means to collect and sort will alleviate the burden from municipalities and, therefore, the public coffers. A harmonised EU-wide system that holds producers accountable for the management of the waste their products eventually produce can help establish a more circular system. On the downside, the power of PROs and the possibility of recycling taking precedence over reuse pose a threat to local reuse systems. The governance of PROs often sidelines civil society, social economy, and reuse actors, as outlined in this recent paper.[54] The introduction of EPR can work alongside other policy tools, such as targets for reuse, local reuse and a fund for reuse and repair that earmarks a certain amount of fees from the EPR scheme for reuse.[55] Further research must determine how EPR can best support local reuse and investigate what a holistic textile waste management system should look like, including defining the roles of recycling, disposal, and exports of second-hand clothes to the Global South.

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[54] RNB (2023) EPR Position Paper.

[55] i: please find more information on this in this paper: ZWE (2023) Joint statement on Extended Producer Responsibility for Textiles.

Authors: Theresa Mörsen

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