



Citizen Engagement: Driving consumer awareness & involvement in the circular textile economy in the EU

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Aalto University

 **t-rex**

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About the project

The T-REX (Textile Recycling Excellence) Project was a three-year initiative funded by the EU's Horizon Europe program. It brought together 13 leading industry partners and research institutions from across the textile value chain to develop a harmonized blueprint for closed-loop sorting and recycling of household textile waste in Europe.

Focusing on polyester, polyamide 6, and cellulosic fibres, the project aims to demonstrate textile-to-textile recycling at scale—transforming discarded textiles into valuable feedstock for new garments. In addition to showcasing the full recycling process, T-REX explored sustainable business models, integrated digital tools to support traceability and circularity, and engaged citizens through educational and participatory initiatives. By advancing circular design guidelines and systemic solutions, T-REX supports the transition towards a more sustainable and circular European textile industry. The learnings from the project can be found at [the website](#) hosted by Aalto University.

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The authors also thank the T-REX Project consortium members for their feedback on the events and help in coordinating several activities.

Finally, the authors also acknowledge the citizens who participated in these activities because we cannot hope to create a circular textile economy without their contribution.



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Executive Summary

This white paper presents a collection of citizen engagement activities developed through the T-REX (Textile Recycling Excellence) Project to support more sustainable approaches to clothing use and disposal. It is intended as a practical guide for individuals, community groups, and NGOs interested in organising events that promote the circular textile economy—particularly the importance of extending product life through repair, reuse, and responsible end-of-life management.

Across Europe, the T-REX Project piloted various activities, from hands-on workshops and school programs to public campaigns and redesign initiatives. These events encouraged citizens to learn how to repair their garments, make thoughtful disposal decisions, and consider the environmental impact of their clothing choices. Examples include the “Spring Cleaning” repair workshops in Finland, youth engagement programs like the Textile Race in the Netherlands, social media campaigns in France, and creative reuse projects that gave old garments new life.

Rather than offering a single model, this white paper highlights diverse formats and approaches that can be adapted to local contexts. Each chapter includes key learnings, tools, and tips for implementation. Whether you are looking to host a small repair workshop or launch a larger community initiative, this resource will help you get started and scale your impact. working toward a more circular and sustainable textile system.

How to use this White Paper

This white paper provides a structured overview of citizen engagement activities to promote sustainable textile consumption and disposal. It includes case studies, descriptions of public events, insights into the tools and methods used, and their impacts.

The document first outlines the background and motivation for citizen engagement and the role of consumers within a circular economy. Each chapter then focuses on one specific initiative implemented within the project in various European locations and contexts.

To explore the **workshops**, see:

<u>"What makes clothes meaningful to you?"</u>	Pg 5
<u>Post-it Shirt workshop</u>	Pg 8
<u>Multi-workshop Spring Cleaning event</u>	Pg 11
<u>"Actionable Stories – Why do I Upcycle/Recycle?"</u>	Pg 17
<u>"Fashion Forward: Reimagine, Reuse, Recycle"</u>	Pg 36

To explore the **educational campaigns**, see:

<u>Textile Race by Race Against Waste</u>	Pg 30
<u>"Fashion Forward: Reimagine, Reuse, Recycle"</u>	Pg 36
<u>Chosen for Redesign Initiative</u>	Pg 43

Additional citizen-engagement events include:

<u>Clothing Swap at Fashion for Good</u>	Pg 14
<u>Inspirational Talks and Events</u>	Pg 48

This White Paper concludes with a summary of key lessons and recommendations for those looking to organize or build upon similar initiatives in their own communities. Each section provides useful insights for promoting circular textile practices at the local level.

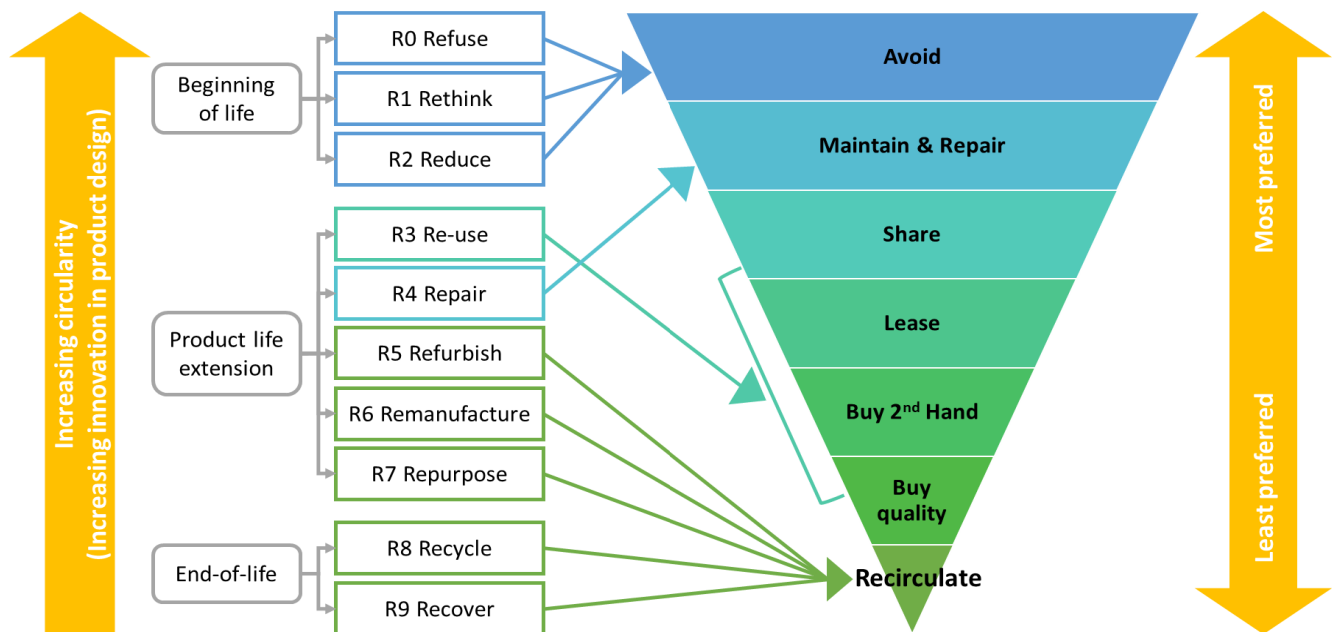
Background and motivation

Role of Consumers in the Circular Economy

The European Commission's latest report on *"Sustainable and Circular Textiles by 2030"* reveals that approximately 5.8 million tons of textiles and clothes are discarded annually, amounting to 11.3 kg per person ^[1]. This places immense strain on the environment, as textile consumption in the EU now ranks as the fourth highest contributor to environmental and climate impact ^[2]. Currently, clothing production and consumption remain largely linear: clothes are produced, sold, bought, worn, and then discarded without systematic reuse, thereby breaking the material cycle and filling landfills with garments that go unused.

However, a sustainable future requires both proactive and reactive approaches to transition from linear to circular systems. Proactive approaches include measures implemented before clothing reaches consumers, focusing on sustainable design techniques and supply chain strategies that extend the material's lifespan ^[3]. Reactive approaches, on the other hand, encompass sustainability initiatives available to consumers, such as options for reusing garments and accessible clothing disposal programs for garment recycling. Furthermore, consumers are recognized as key stakeholders in the transition towards a sustainable textile-clothing industry, given their influence over the longevity and end-of-life of garments. A consumer base committed to adopting sustainable practices can, in turn, drive policy development toward stronger sustainability regulations across all stages of the garment supply chain. To maximize the adoption of consumer-oriented sustainable practices, it is crucial to disseminate knowledge on clothing sustainability, as well as local, state and industry initiatives, across all age groups in an engaging, accessible, and practical manner.

The 9R-framework for CE ^[4], in conjunction with the consumption behaviour hierarchy ^[5], outlines a pathway for influencing consumer actions to reduce waste and promote reuse strategies (shown in Figure 1). Effective engagement can empower consumers to adopt sustainable practices, such as extending garment lifetimes and responsibly managing disposal.



Relation between 9R-framework ^[4] and consumption behaviour hierarchy for promoting CE ^[5].

Consumer Engagement Activities within the T-REX Project

In the context of the T-REX project, several initiatives were undertaken to engage consumers and enhance their participation in circular practices, amplifying the role of consumers in advancing CE within the textile industry. This involved collaborating with NGOs and CSOs to enhance outreach and organizing workshops, awareness campaigns, and surveys. Workshops such as the 'Spring Cleaning' organized at Aalto University focused on extending textile lifetimes through repair and remake activities. Awareness campaigns at Heureka Science Centre, Finland, and with the Circular Fashion Federation, France, promoted repair, reuse, and recycling practices through both digital media and hands-on activities. Additionally, Race Against Waste, an organization from the Netherlands, conducted competitive textile collection drives in schools, combining awareness building with direct action on textile waste prevention.

The findings from these activities were instrumental in shaping strategies to influence consumer behaviours positively and can foster an understanding of CE principles and encourage the adoption of circular consumption behaviours.

The following chapters will delve deeper into the individual activities undertaken as part of the T-REX project. By exploring these activities in detail, this white paper aims to provide a comprehensive toolbox for anyone interested in implementing similar citizen engagement efforts in the context of circular economy practices.

I. What makes clothes meaningful to you?

Event type: Workshop

Aim and Purpose

The workshop series 'What makes clothes meaningful to you?' took place in conferences, universities, a contemporary arts centre, and a clothing swap event across five different European cities from January to May 2024. The main facilitator was designer-researcher Kasia Gorniak with co-facilitation in one iteration by artist Saija Kangasniemi. The aim of the workshops was to generate intimate, candid and critical insights around clothing's design, production, acquisition, use and disposal, based on participants' hand-written contributions on the surfaces of some second-hand shirts. Inviting participants to write and draw directly on a garment surface was a way to record their input in a dynamic and tangible way, simultaneously preserving the meaning from the social experience. The approach explored if the emotional weight of a conversation can be transferred into a garment, instilling a new kind of meaning or purpose, as well as generating dialogue-based wearer insights which could be utilised in the fashion design process to enhance garment-wearer attachment and longevity.

Event Format and Flow

Participants were asked to respond to some pre-formed prompts through writing and drawing on the shirts. Towards the end of each workshop, the newly generated content was shared in a group reading session. New layers of meaning accumulated with each workshop. Each workshop iteration differed based on the location and context. Questions or prompts were formulated beforehand based on the area of interest in the research, which in this case was meaningfulness of clothes. Here are some examples of the prompts used:

- Describe or draw a garment you own which you would never throw away.
- Describe or draw a garment you have given away or thrown away.
- Describe a garment you have recently repaired or had repaired for you. Describe the repair.
- Imagine you are the only human left on earth. How would you dress?
- If you were a piece of clothing, describe what you would be like.

Ahead of each workshop, a selection of prompts is written on different parts of the shirts and once these go through one or more workshops, new prompts can be added, or the dialogue can continue around the original set of prompts (or both). The spatial set up includes a large table covered in a plastic sheet so that the fabric markers do not leave marks beneath, some fabric markers and chairs. The garments are laid out flat on the table, either one at a time

or all at once. In this series, plain-surfaced, light-coloured button-up shirts were used, as they are easy to write on. Woven surfaces are more stable to write on than knitted ones, but in theory any garment type could be used. The side seams, sleeves and curved parts of the shirt armholes were unpicked beforehand, so that the full surface of the garment could be laid flat, maximizing the writing area. The participants then slowly rotate from shirt to shirt or different parts of the shirt if there is only one, adding their responses.

Although it is not obligatory, the workshops usually take place in silence, as any dialogue should be captured through writing or drawing on the garment surfaces. One iteration took place on the floor, with a plastic sheet covering a pre-determined zone upon which the activity would take place. This resulted in a more physically dynamic interaction between participants and the shirts, as they could sit, lie down or walk around while adding to the dialogue. Irrespective of the workshop set up, the shirts can also be tried on. At the end of each workshop, the reading session allows participants to share some of the new dialogue that has been created, out loud. To maintain engagement, a newsletter series is being sent out to all participants, keeping them informed about how their contributions are being utilized and how the research unfolds.

Documentation and Data Collection

Data was collected through participant observation, with field notes, audio recordings of discussions, photo and video documentation and the accumulated content on the surface of the shirts themselves. Longer-durational workshops with a fixed set of participants generate more in-depth responses and conversations, whereas a 'pop-in' style set-up results in a higher quantity of faster, shorter responses; both were considered equally valuable as data. The data can then be thematically analysed by the researcher from both a design lens and an experiential lens.

Learnings

The experience of the workshop offers participants a chance to reflect on their relationship to their clothes and their feelings about fashion, in a collective setting. The workshop series is still actively ongoing as part of the researcher's doctoral dissertation, so it is too early to articulate findings on impact creation. However, based on the initial thematic analysis, workshops gave participants pause to reflect critically on their clothing habits and the fashion system as well as on the positive aspects. Some described it as a liberating or meditative experience. For some participants, carrying out the activity in silence came naturally, whilst for others the prompts provoked more of a vocalised discussion (rather than writing on the shirts). For the designer-researcher who was also the workshop facilitator, the workshops generated valuable consumer insights and design inspiration for future analysis and application. The impact could be greater and data more diverse if the workshops were

carried out with a wider range of participant demographics and in a wider range of contexts, for example, in a space where fast fashion is actively and frequently consumed.



What makes clothes meaningful for you? workshops at the Limit/No limit Art and Design Research Conference, Paris, POUH Art Centre, Aubervilliers, National Institute for Consumer Research, Oslo and the Dialogical Bodies Conference, Borås, Sweden. Photos: Kasia Gorniak.

II. Post-It Shirt Workshop

Event type: Workshop

Aim and Purpose

The workshop was a collaboration between Helsinki-based NPO Softislab and designer-researcher Kasia Gorniak. The aim was to give participants the opportunity to uncover meanings and feelings around materials and clothes, through a reflective multi-sensory and writing exercise using tacit knowledge. Playing with a textile version of a post-it note brainstorm, a selection of fragments from the texts generated were embroidered onto small swatches of fabric and compiled on one communal shirt. This could help gather insights for designing for emotional durability based on consumers' perceptions and connotations of different material types.

Event Format and Flow

A diverse range of second-hand fabric swatches were collected – natural and synthetic, course and smooth, heavy and sheer, stiff and flexible, woven and knitted – to act as triggers for physical and emotional responses from participants. A series of questions were formed beforehand, including:

- What would wearing this fabric feel like?
- Can you imagine what it looks like, based on what it feels/ smells/ sounds like?
- What kind of emotions does it trigger?
- Does it trigger any memories – about an experience, a person, a garment?

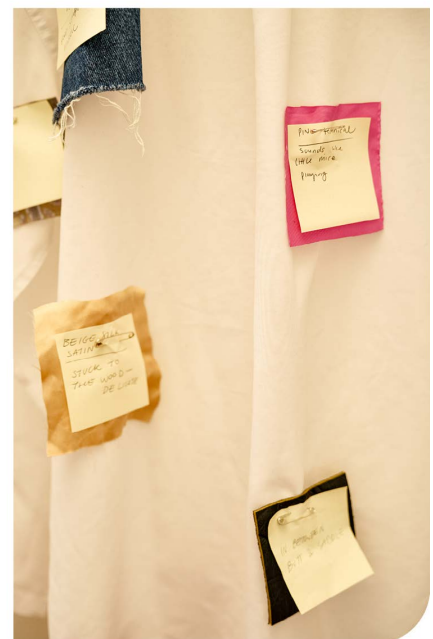
Participants worked in pairs. For the first part of the workshop, the swatches were kept out of sight and participants alternated wearing blindfolds while their partner noted down their response when feeling, smelling and listening to each swatch. For the second part, the blindfolds were removed, and participants could select some fragments from their text-based responses to machine embroider on swatches of the correlating fabrics. They could make one swatch to take home with them and the rest were added to the communal shirt, creating a wearable brainstorm.

Documentation and Data collection

Participants' text-based responses, photo documentation, field notes, an informal feedback session at the end of the workshop and the communal brainstorm shirt.

Key Learnings and Outcomes

As an experimental concept, this workshop would require further iterations to measure the impact on participants. The communal shirt would also benefit from further iterations so that the layers of swatches could accumulate, and it grows into a collective commentary on intimate, intuitive associations with materials. One of the main learnings for facilitators was that the length of responses given by participants for each material swatch was much bigger than anticipated. The timing of each exercise had been structured to be quite fast, with responses based on gut reactions, but participants seemed to enjoy dwelling on each question and going deep with their trains of thought. This would indicate that a multi-sensory approach with fabrics as a trigger can be an effective way to generate emotional insights. It also means that for any future iterations, there could be fewer questions and fewer fabric types. The participants enjoyed being able to create and take home an embroidered swatch of their own. Having a physical memento from the workshop was a way to extend the experience into the future lifeworld of the participant, increasing the level of engagement with the concept. The social aspect was also appreciated. There was a point made that especially for foreigners or non-local residents, events where one can meet new people whilst learning a new skill or exploring something more abstract, are highly sought after and valued.



Post-It Shirt Workshop, Softislab Studio, Helsinki. Photos: Jere J. Aalto.

III. Spring Cleaning

Event type: Multi-workshop event

Aim and Purpose

“Spring Cleaning” was a multi-workshop clothing and textile repair event held at the School of Arts, Design and Architecture in Aalto University, Finland from April 23 to May 3, 2024, during the 10th Fashion Revolution Week. All the workshops were free and open to the public. The aim of the event was to facilitate a communal platform for skill-sharing in the clothing and textile fields, promoting product longevity in a co-learning environment. It brought together those who had skills to share and those who wanted to learn. It included nine different workshops, curated through an open call on the university’s internal and external channels. Workshops were selected based on their practical feasibility and on diversity of the approaches.

Event Format and Flow

Located in the main lobby of the Väre building of Aalto University—home to the Department of Design—the temporary workspace enabled high visibility, encouraging drop-in participants and projecting the energy of the event throughout the building. Two domestic sewing machines, an ironing board and a fabric scrap box were included in the set-up. The facilitators had varied levels of experience in running workshops, from hobbyist to professional. Topics included upcycling old or unwanted trousers into bags, hand-quilting with fabric scraps, darning for knitwear, a hands-on learning exercise about differentiating garments’ suitability for upcycling vs. recycling and the assembly of a communal soft sculpture, with re-purposed garments and materials. Two large-scale patchwork curtains were made and hung in the space to give some sense of privacy and boundaries to the workshop space. Alongside this space, a durational clothing swap area was also included, with items being left and taken freely from some assigned benches and rails, throughout the event.

Documentation and Data collection

Observation of participants was conducted using field notes and photography to capture both interactions and key moments. An online survey about the participants’ experience was taken directly afterwards, containing mostly multiple-choice questions, about motivation for attending, satisfaction level and skill competence level after the workshop. Follow-up email questionnaires with three or four open ended questions were sent out four months later to both participants and facilitators. The participant questionnaire focused on the continued impact on behaviours or attitudes around the skills learnt or repairing and upcycling habits.

The facilitator questionnaire focused on the motivations for running the workshops and reflections on how they went.

Key learnings and Outcomes

Approximately ninety participants attended the event, ranging from 5 to 20 people per workshop. Most of the feedback indicated the experience positively impacted participants. While 60% of the respondents attended only one workshop, 40% attended several. This indicated an interest in learning a variety of skills and repeating the experience. Most of the respondents had some previous experience in clothing repair, with the main motivator for attending being to learn a new skill. All stated they felt more able to repair or upcycle their clothing and textiles after attending. Freeform feedback included remarks about the event's 'cozy' and 'convivial' atmosphere, lots of interest to join in future if the event was ever reorganized, the joy of meeting new people whilst learning a new skill, and even the convenience of some workshops being scheduled after office hours. The discovery of new potential in damaged or unused garments was also noted by participants. Hence, the ability to influence consumers' perception and identification of what can still be revived, paired with the skills on how to action it, can potentially lead to the extension of product use-times.

Feedback from facilitators on their motivation for applying confirmed a demand for this kind of platform, to test and launch new ideas. A feeling of fulfilment and surprise at how quickly their participants can learn new skills, was felt amongst facilitators. Both participants and facilitators were inspired and activated to continue with the activities, beyond the event. A sense of wellbeing and appreciation for the social aspect of the workshop was noted by all involved, affirming the event's positive impact on feelings of social connectedness.



Spring Cleaning workshops and event poster. Photos: Jere J. Aalto.

IV. Clothing Swap at Fashion for Good

Event type: Second-hand clothes market and workshops

Aim and Purpose

T-REX consortium partner, Fashion for Good, organised a 'Clothing Swap' event at the Fashion for Good Museum in Amsterdam on May 7, 2024. Along with the swap event, two interactive workshops were organized to invite participants to reflect on personal meaning and challenges through experiences of their own clothes, as well as to explore upcycling and recycling opportunities of used garments. The event was marketed through FFG and T-REX social media channels. As part of the event, a #CircularConsumptionRules poster series was developed and displayed at the event. The poster series was later made available to download for free on the T-REX website, to be used at other events.



Workshop 1: "Actionable Stories – Why do I Upcycle/Recycle?" as part of the FFG clothing swap. Photo: Fashion For Good/Elzo Bonam.



Workshop 2: "What makes clothes meaningful to you?" as part of the FFG clothing swap. Photo: Fashion For Good/Elzo Bonam.

Event Format and Flow

The Clothing Swap event took place at the Fashion for Good Museum exhibition space in Amsterdam, where participants registered online in advance. To ensure a smooth and organized swap, attendees were asked to drop off their pre-loved clothing already the week before the event. This allowed time for the event organizers to check and categorize each item before the swap officially began. Only clean and well-maintained clothing was accepted, while items such as swimwear, company workwear, fur, and heavily worn shoes were excluded.

Once collected, the clothing was sorted into three categories based on quality and desirability, each assigned a token value: yellow (1 token), red (2 tokens), and blue (3 tokens). Participants received tokens corresponding to the value of the items they handed in, which they could then use to select new pieces during the swap. For example, someone who contributed two yellow, two red, and one blue item would receive a total of nine tokens, which could be exchanged for any combination of items with matching token values. This system

ensured fairness and encouraged thoughtful exchanges, making the swap both an enjoyable and sustainable way to refresh wardrobes.

During the event, participants could also take part in two interactive pop-in workshops, and 30 people participated in these workshops, explored in more detail in the following sections:

- *What Makes Clothes Meaningful to You?*
- *Actionable Stories – Why Do I Upcycle/Recycle?*

#CircularConsumptionRules Poster series

The poster series was displayed as part of the clothing swap event and developed based on the hierarchy of circular consumption behaviour ^[5].

#CircularConsumptionRules



*The Hierarchy of circular consumption behaviour, Mölle-Biem & Dahlmann, 2019



#CircularConsumptionRules

AVOID

Currently, most garments are **worn only 7-10 times before being discarded**

*Ellen MacArthur Foundation

Save unnecessary purchases that will end up in landfill by taking a couple of days to consider if you REALLY need that new item.



#CircularConsumptionRules

MAINTAIN AND REPAIR

By extending a garment's life by just an extra 9 months (for example, through repair) you can help **reduce its environmental impact by 20-30%**.

*WRAP report



#CircularConsumptionRules

SHARE

Clothing swaps are great for giving pre-loved fashion a new life.

Less shopping, more swapping!



#CircularConsumptionRules

LEASE

Renting one piece of clothing can **save up to 24% water, 6% energy, and 3% CO2 emissions**, when compared to buying a new item.

*Rent the Runway



#CircularConsumptionRules

BUY SECOND-HAND

If everyone bought one used item instead of new, we'd save CO2 emissions **equivalent to taking up to half a million cars off the road for a year**.

*ThreadUp



#CircularConsumptionRules

BUY QUALITY

When it comes to buying new, less is more. Buy less, but better quality pieces from brands that focus on producing **ethically** and **with care for the environment**.



#CircularConsumptionRules

RECIRCULATE

Have clothes that can't be re-used? Drop them into the **textile collection bins** where they can be recycled.



V. Actionable Stories – Why do I Upcycle/Recycle?

Event type: Workshop

Co-designed by: Elina Lewe & Jamila Juzer Siamwalla

Written by: Jamila Juzer Siamwalla, Designer/Research Associate



The workshop – Actionable Stories: Why do I Upcycle/Recycle?” at the Fashion for Good Museum, Amsterdam; 07.05.2024. Photo: Fashion for Good/Elzo Bonam

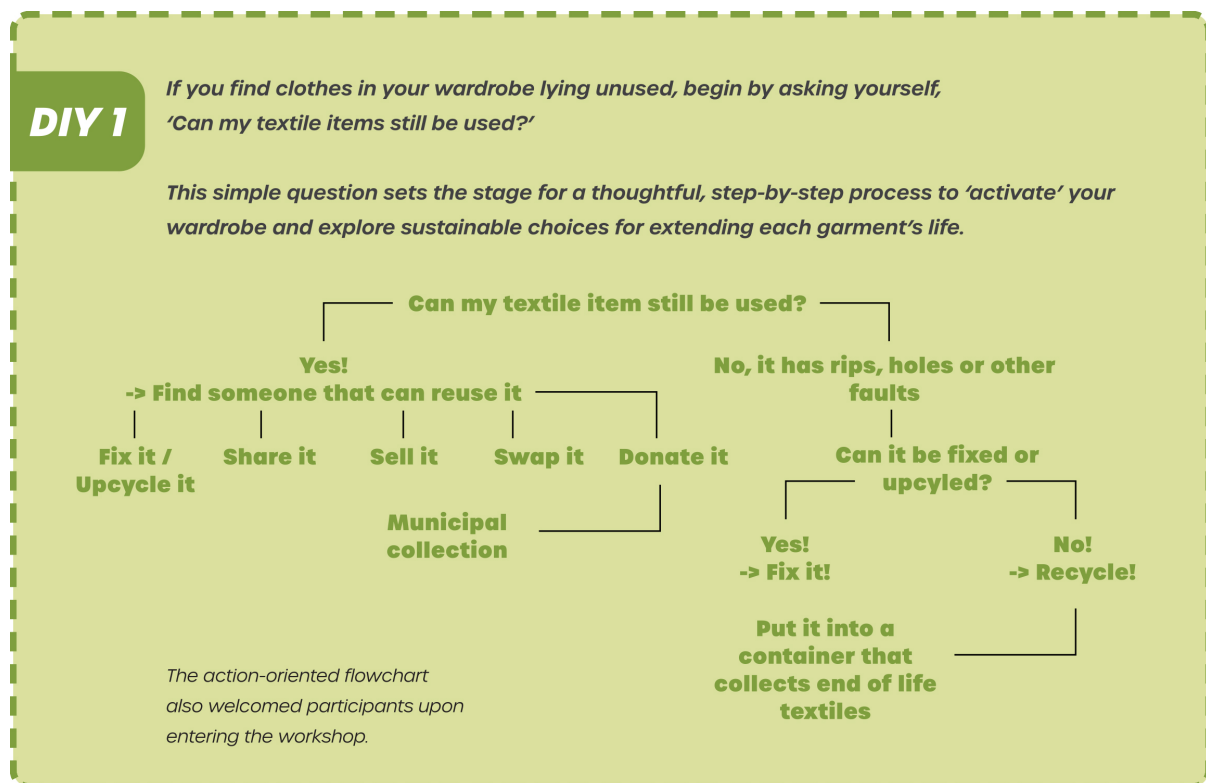
Aim and Purpose

The citizen engagement workshop titled ‘Actionable Stories: Why Do I Upcycle/Recycle?’, was co-designed and conducted by Aalto University through the T-REX project at Heureka, The Finnish Science Center, at Vantaa, Finland from June to August 2024.

The workshop’s title was created to prompt participants to reflect on their own practices and motivations concerning textile consumption. While the focus on “upcycling” and “recycling” of clothing was integral to the workshop activities, the overarching objective was to equip

consumers with knowledge about sustainable clothing consumption practices. These strategies also encompassed reusing, repairing and swapping clothes to extend the lifespan of textile materials and keep them actively circulating within the production-consumption loop.

By presenting actionable strategies, the workshop aimed to empower participants, giving them a sense of control over how they use, care for and eventually make responsible choices about their clothing. This empowerment may lead to positive reinforcement of behaviours that contribute to environmental sustainability and societal well-being.



Spatial Organization of the workshop

Since the workshop was part of Heureka's larger interactive exhibit "Dress Code: Sustainable – Goodbye Fast Fashion!" [6], it was designed as a pop-in session, where participants could enter at any time and engage with the activities at their own pace, allowing for flexible and nearly self-guided involvement. While a pop-in workshop format offers flexibility, it also presents the challenge of designing a space that effectively attracts and maintains participant interest, facilitating maximum engagement. To address this, the workshop environment was deliberately structured to spark curiosity from the outside, ensuring that once participants entered, they would be immersed in a diverse array of sensual-engaging activities. This setup facilitated learning and engagement, encouraging participants to deepen their understanding of the subject through interactive exploration.

The workshop consisted of six key stations—Introduction and Initial Survey, Survey Station, Upcycle Station, Recycle Station, Tagging and Display and Final Survey and Follow-Up—each designed to guide participants through a reflective process on clothing disposal, upcycling and recycling practices.

Conducting pilot sessions was essential for ensuring the effectiveness and smooth flow of the workshop activities, with two successful pilot workshops organized as follows:

1. Pilot Workshop I took place at Aalto University during the “Clothing Exchange and Workshops” event on April 30, 2024 (see image below). The Aalto University workshop featured a linear layout, directing participants through each station in sequence for focused engagement and smooth transitions.



Workshop setup at Aalto University; 30.04.2024. Photo: Aalto University/Jere J. Aalto.

2. Pilot Workshop II was conducted as part of a workshop series at the Fashion for Good Museum in Amsterdam on May 7, 2024 (see image below). The open layout at the Fashion for Good Museum allowed flexible engagement, with facilitators guiding participants to ensure a cohesive experience across stations.



Workshop setup at the Fashion for Good Museum, Amsterdam. 07.05.2024. Photo: Fashion for Good/Elzo Bonam.

The pilot workshops were crucial for understanding the impact of spatial organization on participant interaction and engagement. Real-time observations allowed for the assessment of responses and the gathering of essential feedback, which informed refinements to enhance efficiency and engagement for the larger-scale workshop at Heureka. These sessions established a foundational framework for scaling the citizen engagement workshop, which was conducted in both English and Finnish, while the pilot workshops were held solely in English.

Visual map of the pop-in workshop at Heureka

The workshop used a U-shaped format to create an open and collaborative space, enhancing engagement and visibility for idea exchange and collective problem-solving.

VISUAL MAP OF THE POP-IN WORKSHOP AT HEUREKA

The workshop used a U-shaped format to create an open and collaborative space, enhancing engagement and visibility for idea exchange and collective problem-solving.



The workshop – Actionable Stories: Why do I Upcycle/Recycle? at Heureka, June – August 2024. Photo: Aalto University/Jere J. Aalto.

Surveying citizens' clothing behaviours

The workshop incorporated a detailed survey across multiple stages to capture data on participants' awareness and behaviours regarding textile disposal and recycling practices. This survey was divided into three parts:

1. Pre-Activity Survey (STATION 1): Administered before the workshop, this section aimed to establish a baseline understanding of participants' existing knowledge and habits related to textile recycling and disposal. Questions focused on demographics and awareness of environmental impacts within the textile industry, using a mix of rating statements, multiple-choice options and open-ended inquiries about current disposal behaviours and attitudes toward sustainability.
2. Immediate Post-Activity Survey (STATION 6): Conducted right after the workshop, this segment evaluated the immediate impact of the workshop on participants' understanding of activating the use of their clothes. Participants were asked whether they learned anything new, how they planned to dispose of textile waste in the future and if the activity inspired them to consider upcycling or repairing items. This feedback was essential for assessing the workshop's effectiveness in shifting perceptions and encouraging proactive behaviours.
3. Follow-Up Survey (STATION 6): Offered three to six months later, this optional survey aimed to track any behavioural changes over time. Participants reflected on their textile disposal practices since the workshop, helping to reveal the long-term impact on sustainable habits. This section included questions about recycling and disposal behaviours, encouraging participants to reconnect with the concepts introduced during the workshop.



This data collection effort forms part of a larger doctoral research study at Aalto University, supported by the T-REX project.

Reading and Learning to Act

The **information storyboard** was strategically placed between Station 1 (*Initial Survey*) and Station 2 (*Choosing Clothes for Upcycling/Recycling*). It provided clear and accessible content, offering consumers actionable insights for sustainable clothing practices. Key topics covered included practical tips for repair and upcycling, guidance on local repair shops and workshops and information on online courses and nearby recycling drop-off points. This content was presented through visuals, text and QR codes that provided access to important links.

The storyboard comprised individual sheets, each centred on a theme that could function independently or be combined for a comprehensive guide. This design provided flexibility in presentation and natural breakpoints for participants. Collectively, the sheets outlined a complete framework for responsible clothing care, highlighting actions to maintain materials within the circular economy and prevent irresponsible disposal.



*Information Storyboard at the workshop for the Fashion for Good Museum, 07.05.2024.
by Fashion for Good/Elzo Bonam.*

Further, a **video presentation** showcasing a previous clothing repair project by Aalto University was displayed to enhance the workshop space's appeal. This initiative aimed to attract the public, encouraging them to pause and reflect on the importance of caring for their clothing.



Presentation at the workshop at Heureka, June – August 2024. Photo: Aalto University/Jere J. Aalto.

Engaging

After learning about textile and clothing sustainability initiatives, participants took part in a reflective activity aimed at deepening their understanding of sustainable practices. This activity commenced at STATION 2, where they encountered and engaged with clothing and textile accessories that were no longer usable. Sourced from UFF¹, these items had been washed prior to the workshop to ensure cleanliness and readiness for engagement.

Presented as opportunities for transformation for unusable clothing, each participant was encouraged to select two items: **one that they believed could be creatively upcycled in various ways; and another they deemed suitable for recycling.** In this way, participants could interact with textile materials deemed no longer usable while having the reflective space to choose two garments for potential upcycling or recycling.

¹ “UFF’s clothing collection service allows individuals in Finland to take meaningful action by donating unwanted clothing, footwear, and textiles for responsible reuse. This workshop was also vital for UFF to communicate its core values, highlighting the importance of clothing collection services and the climate benefits of reusing garments.” - UFF Annual Report (2023). Available at: https://uff.fi/wp-content/uploads/2024/08/Vuosikertomus-23_engl_netiti.pdf



Engaging with clothes from UFF and writing on storytags at the Workshop at Heureka, June – August 2024. Photo: Aalto University/Jere J. Aalto.

Activating the unusable clothes



Questions below. Whether you're engaged with the previous activity or not, this is your opportunity to give new life to your unused clothing. Grab a pen and paper and get started!

CHOSEN FOR UPCYCLING	CHOSEN FOR RECYCLING	MOTIVATION AND POTENTIAL OUTCOMES
What fascinates you about upcycling this garment?	Why did you choose this particular garment for recycling?	Reflective Questions: Prompts designed to clarify reasoning behind classifying garments for upcycling or recycling, offering insights into sustainability awareness and prioritization.
What new you could make of this garment?	If you were to drop this garment off for recycling, where would it be?	Definite Questions: Designed to prompt quick thinking, this set of questions encourages consideration of new uses for garments or identification of recycling locations, highlighting practical sustainability options available.
What are your thoughts on upcycling garments to reflect your personal style?	What do you first think of when you hear 'recycling contributing to sustainability'?	Further Reflective Questions: Aimed at capturing personal perspectives on upcycling and recycling, this set of questions encourages diverse viewpoints to enrich the discussion on sustainable clothing.

In the workshop at STATION 3 and 4, participants selected a GREEN story tag for the textile item chosen for upcycling and answered the accompanying questions. For items designated for recycling, they picked an ORANGE story tag and responded to the given questions.

At STATION 5, participants used color-coded story tags—green for upcycling and orange for recycling—to mark textile items for their respective purposes, threading yarn through each tag.



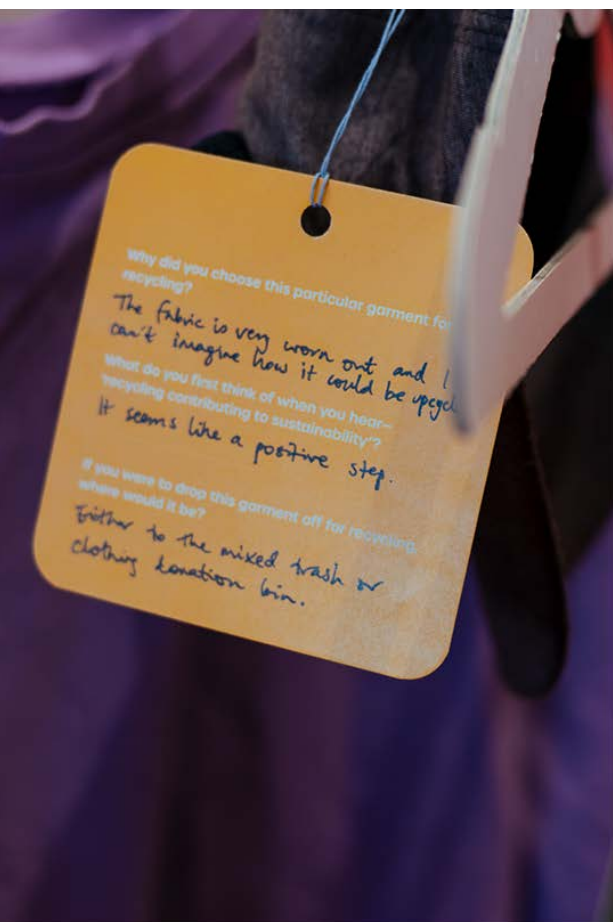
The tag was then securely attached to a visible part of the garment, such as a sleeve, button, or belt loop, or looped around the hanger itself. Participants were also encouraged to explore other items on display, engaging with the diverse stories attached to the clothes.



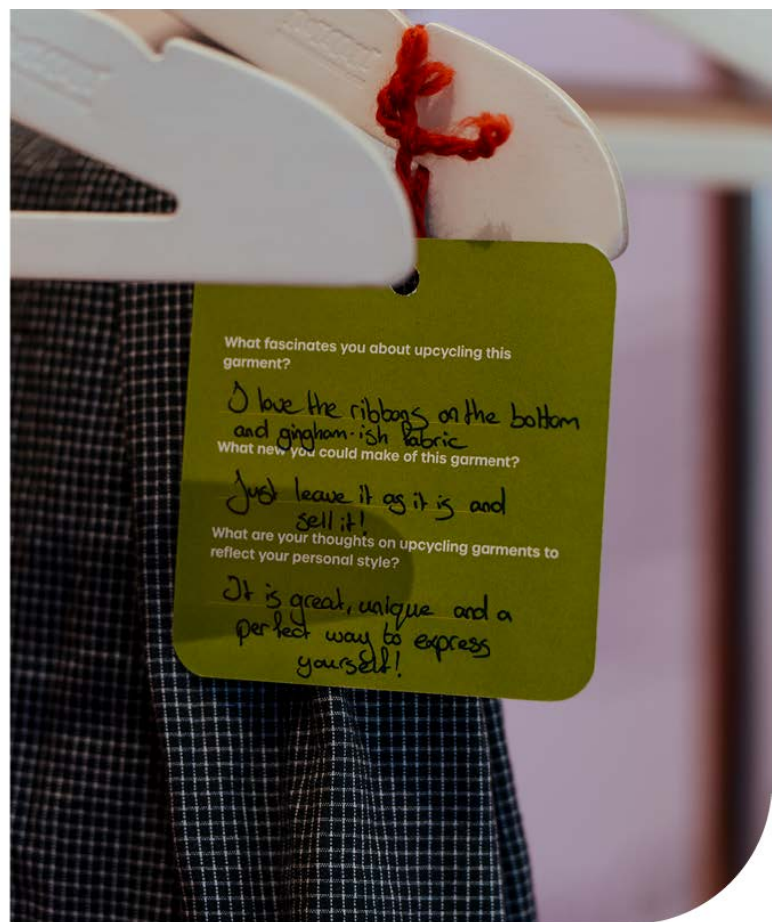
A participant going through other clothes and their attached story tags by other participants on display at the workshop at Aalto University, 30.04.2024. Photo: Aalto University/Jere J. Aalto.

Through these workshops, participants engaged with concepts of upcycling, recycling, and sustainable garment care, building a heightened awareness and commitment to practical, sustainability-oriented choices in textile use.

These insights highlight the value of citizen engagement in driving a more informed and conscious approach to textile sustainability.



(L): Recycling story tag on display at the Fashion for Good Museum, 07.05.2024. Photo: Fashion for Good/Elzo Bonam.



(R): Upcycling story tag on display at the Fashion for Good Museum, 07.05.2024. Photo: Fashion for Good/Elzo Bonam.

VI. Textile Race by Race Against Waste

Event type: Educational Campaign for schools



Aims and Purpose: T-REX x Race Against Waste

Race Against Waste (RAW) is a Dutch social enterprise with the aim of empowering the next generation to act on sustainability through hands-on educational campaigns. Each year, more than 600 elementary schools across the Netherlands, Germany, and France participate in initiatives that teach children about the circular economy and energy

conservation. The organization runs four key programs: the E-waste Race, Textile Race, Energy Race, and Water Race, all designed to highlight the environmental and social impact of consumption and resource use—while equipping students with practical solutions for change.^[7]

In collaboration with RAW, T-REX funded and planned a textile race in five schools (with seven classes) in Westland, Netherlands from September 16 to October 10, 2024. During the race, the school classes compete by collecting old and broken textiles.

The initiative engaged 150 students, challenging them to collect as much end-of-use textile as possible for recycling. To ensure the effective execution of the initiative, RAW worked closely with logistics partners to manage the collection process and document the quality and quantity of the textiles. The organization also coordinated media outreach, engaging local press through a press release, and organized both the opening and closing events for the race.

Event Format and Flow

Opening ceremony: The opening ceremony of the Textile Race served as the official launch of the event, taking place at one selected school. This brought together key stakeholders, including a representative from the local municipality and project partners such as waste management logistics providers. It also provided an opportunity for media coverage, highlighting the importance of circular textile practices. The event began with a welcome to the attending officials, followed by a short motivational speech, encouraging the students in their participation and emphasizing the impact of their efforts. The project manager then transitioned into delivering the guest lecture, setting the stage for the learning and action to follow.

Guest lecture: As an essential part of the Textile Race, students received an engaging and interactive guest lecture that introduced them to the world of textiles and the importance of sustainable consumption and disposal. This lecture served as a foundation for their participation in the race, equipping them with critical knowledge and inspiring them to take action.

The session began with an exploration of textiles—what they are, how they are made, and what happens to them when they are no longer needed. Students reflected on their own clothing habits and considered different ways to reuse or dispose of textiles responsibly. The discussion then shifted to key issues such as material use, labour conditions, and the environmental and social impacts of textile production and waste. Topics like resource consumption, pollution, and ethical concerns in the fashion industry were presented interactively through quizzes, real-life examples, and visual materials to keep students engaged.

After addressing these challenges, the lecture introduced the Stairs of Circularity, which outlined practical solutions such as reducing consumption, reusing clothing, recycling

materials, and rethinking fashion habits. Students were encouraged to think of ways they can personally contribute to more sustainable textile practices.

The session concluded with an explanation of the Textile Race, including the rules, point structure, and assignments. By linking their actions in the race to the broader sustainability concepts discussed, students could understand the real-world impact of their efforts. With interactive elements such as Q&A, material demonstrations, and short quizzes, the lecture ensured they remain engaged and motivated to take meaningful action throughout the competition.

The race: For every kilo that the children collected, they received points via a special website. In addition, the students received points for repairing textiles, by offering them second-hand on an online marketplace, by filming a call to reduce consumption or by appearing in the local media.

Closing ceremony: The closing ceremony doubled as the prize-giving event, held at the winning school. The event served as a moment of recognition for the participants' dedication and impact, rewarding their efforts in textile collection and awareness-raising.



Documentation and Data Collection

To assess the impact of the Textile Race Westland, a sorting analysis was conducted on approximately 1000 kg of collected textiles. This analysis, carried out in collaboration with RAW's logistics partner Rataplan, provided valuable insights into the composition and potential reuse of the textiles, helping to measure the effectiveness of the initiative.

The results were as followed (from 938kg collected as part of the Textile Race Westland):

- Share of product reuse: 87%
 - o Local product reuse/Shop quality: 38.2% (358kg)
 - o Product reuse outside of the Netherlands: 48.8% (458kg)
- Share of material reuse: 11.3%
 - o Recycling of plastic: 0.9% (8kg)
 - o Industry material reuse (e.g. material for sleeping bags, jeans, knitted materials, cotton, wool): 10.4% (98kg)
- Share of waste: 1.7% (16kg)

These findings highlight the high potential for reuse within collected textiles, with nearly 90% of materials finding a second life either as products or materials. The minimal waste generated (1.7%) underscores the effectiveness of the initiative in diverting textiles from landfills and supporting circular economy principles.

Key learnings and Outcomes

Raising Awareness and Encouraging Sustainable Consumption

Educating young people about sustainable consumption and textile disposal is crucial in shaping future behaviours. Through the introductory lecture and hands-on participation, students gained a deeper understanding of the environmental impact of clothing and the importance of responsible consumption. This learning experience is likely to influence their future habits, encouraging mindful purchasing, repair, and reuse.

Beyond the classroom, the race engaged families, schools, and the wider community, raising awareness of textile waste and circular economy principles. RAW promotes key sustainability messages, including buying less, choosing consciously, repairing, reusing, and proper disposal. These messages were amplified throughout the community via word-of-mouth, media coverage, local newspapers, and news outlets, expanding the initiative's reach and impact.

Measurable Impact Through Textile Collection

The race also delivered a direct environmental impact through the collection and proper processing of discarded textiles. By the end of the initiative, participating schools had gathered 5817 kg of textiles. Thanks to logistics partner Rataplan, most of these textiles could be reused, recycled, or downcycled, significantly reducing textile waste destined for

incineration. A sorting analysis of a 1000 kg sample (see above) further demonstrated the effectiveness of the initiative.

Encouraging Repair and Extending Product Lifespan

Beyond collection, the initiative actively promoted repair and reuse. Students repaired 170 marketplace advertisements and 54 textile items, extending their usable lifespan and reinforcing the importance of circular economy practices.



Textile Race Guest lecture. Photo: Race Against Waste.



VII. Fashion Forward: Reimagine, Reuse, Recycle

Event type: Educational campaign through social media and workshop series

Aim and Purpose

As part of the T-REX project, Aalto University collaborated with the Circular Fashion Federation (FMC) to develop a 5-week social media campaign for consumers, titled “Fashion Forward: Reimagine, Reuse, Recycle.” The French campaign ran from October 7 to November 8, 2024, and educated consumers about the effects clothing consumption has on the environment and introduced them to more sustainable clothing consumption and disposal practices. These included the repair of clothing items, exchanging, and selling clothing that they do not use anymore, or donating and recycling of unwanted clothing and textile waste. Each week introduced a new topic through informative Instagram posts, alongside local activities in the Paris area—such as a repair workshop, clothing swap, or visit to a recycling centre—that aligned with the weekly theme.

Event Format and Flow

Collaboration T-REX x Circular Fashion Federation

FMC is an organization that brings together more than 250 members from across the circular fashion ecosystem. Its mission is to promote circularity in the fashion industry and to support the transition towards a more sustainable model. ^[8]

For this event, Aalto University, FMC, and ESSCA School of Management (Paris) collaborated to develop and implement a campaign promoting citizen engagement in circular fashion. Each partner played a distinct role in ensuring the campaign's success:

- FMC led social media outreach, engaging its network to amplify campaign messages and encouraging members to contribute by sharing content or hosting consumer-focused activities, such as workshops.
- Aalto University and ESSCA gathered relevant information for the social media campaign while coordinating with interested FMC members to design workshops and activities aligned with the initiative's goals.

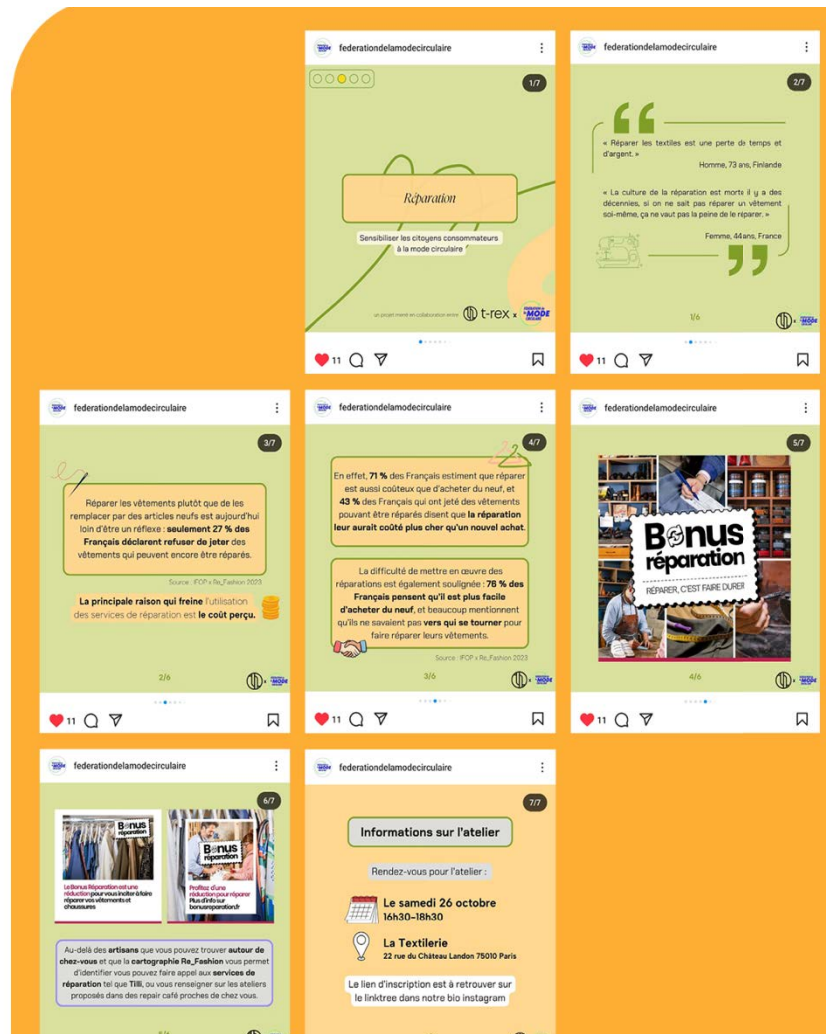
Social Media Campaign

The social media campaign “Fashion Forward: Reimagine, Reuse, Recycle” was shared through FMC’s Instagram channel and was divided up into 5 themes for each week that the campaign was running. The themes were adapted from the Hierarchy of Consumption in a Circular Economy ^[5].

The chosen themes were as followed:

- Week 1: Overproduction and overconsumption in the fashion industry
- Week 2: Circular fashion and the hierarchy of solutions
- Week 3: Repairing and Upcycling
- Week 4: Swapping, selling, and buying
- Week 5: Giving, Donation System, and Recycling

Each week included a social media post that followed the same structure. It started out with a fitting consumer quote to the topic, from a survey conducted by Aalto University in 2023, followed by a fact on clothing consumption responding to the quote. The next slide(s) included recommendations for more sustainable practices relevant for the theme. The last slide of the post advertised a fitting activity or workshop offered to consumers as part of the campaign each week.



Workshops and Activities offered as part of the campaign

The activities were planned in collaboration with members of the Federation. Four different activities were offered as part of the campaign.

Textiles Untangled Workshop: As part of Week 1, the organization Green Donut hosted a Textiles Untangled workshop for six participants.

This three-hour interactive session guided participants through a structured discussion on the fashion industry's impact and consumer behaviour. Attendees were led by a facilitator to engage in the following activities:

- **Information Mapping:** Participants organized fact-based cards along the fashion value chain, analysing key sustainability challenges such as water consumption, emissions, animal welfare, and labour conditions.
- **Impact Discussion:** The group reflected on which stages of the value chain have the highest environmental and social impacts.
- **Action Planning:** In the final hour, participants brainstormed practical actions they could take individually and collectively to support a more sustainable fashion system.

This workshop was organized to increase awareness and encourage participants to think critically about their consumption habits and explore actionable solutions.



Participants engaged in the Textiles Untangled Workshop.

Repair workshop: As part of Week 3, La Textilerie hosted an interactive repair workshop for eight participants. This two-hour hands-on session introduced attendees to four key repair techniques, enabling them to extend the lifespan of their clothing and reduce textile waste. The workshop followed a structured approach:

- **Skill Development:** Participants first practiced repair techniques on sample fabrics, gaining confidence in their application.
- **Personal Application:** Attendees then worked on their own garments, receiving personalized guidance from the facilitator on the most effective repair methods.

By the end of the session, participants not only acquired practical repair skills but also developed a greater appreciation for garment longevity and circular fashion practices.



Repair Workshop facilitated by La Textilerie, Paris.

Clothing Swap: As part of Week 4, DressLike organized a Clothing Swap event with 16 participants. Held at the CrushON second-hand store at the Carrousel du Louvre, this event encouraged participants to exchange clothing they no longer wore, promoting garment reuse. The experience was enhanced by:

- Guidance from a Circular Fashion Stylist, who provided personalized advice on styling and making sustainable wardrobe choices.
- Access to Second-Hand Shopping, allowing participants to purchase additional pre-loved items from the store's curated collection.

This event fostered a culture of swapping over buying new, helping participants extend the life cycle of clothing while making more conscious fashion choices.



Photo from the Clothing Swap Event at the CrushON Second-hand store at the Carousell de Louvre, Paris.

Visit to a textile sorting centre: As part of the week 5, a visit to a textile sorting centre of La Relais was organized with 11 participants. The visit was guided by the centre's manager. Participants discovered the clothing sorting process, asked questions and engaged in discussions about textile waste and disposal. This visit was aimed at deepening participants' understanding of what happens to discarded clothing and highlight the importance of proper textile disposal and responsible consumption.



Participants engaged in a discussion with the Le Relais sorting centre manager.

Documentation and Data Collection

Data was collected as part of the activities through a survey administered before and after each session to measure the impact on participants' behaviour. The survey consisted of two main parts:

- Pre-Activity Survey: This portion assessed participants' knowledge, values, and behaviour regarding clothing consumption prior to the activity.
- Post-Activity Survey: This section focused on measuring participants' intention to adopt the target behaviour promoted during each workshop (e.g., repairing clothing, engaging in sustainable consumption).

The survey results provided valuable insights into how the activities influenced participants and offered data to guide future improvements in engagement strategies.

Overall, findings highlighted the importance of group participation in the activities and how social interaction and group dynamics influenced awareness and motivation. However, it was still important to have expert facilitation and clear guidance provided. It also became clear how effective more hands-on experiences and practical engagement were,

compared to only knowledge sharing activities. Participants highlighted specific barriers to adopting more sustainable consumption practices, like the need for more concrete resources (information on trustworthy brands or labels and alternative disposal options), the important role of financial incentives, or the effort and time involved in more sustainable consumption. They expressed the need for ongoing support, accessible resources, and follow-up opportunities to reinforce new behaviours. Providing easy-to-access information on repair services, textile recycling locations, and sustainable purchasing and use options could help participants overcome barriers and sustain their new habits.

Key Learnings and Outcomes

There were three main outcomes from this campaign and the activities organized:

1. **Social Media Outreach:** The campaign made a significant impact through social media posts shared on FMC's Instagram and distributed across the Federation's network. These posts reached a variety of consumer groups, amplifying the campaign's message and promoting sustainable fashion practices to a broader audience.
2. **In-Person Activities:** Participants directly engaged with the workshop content, learning sustainable consumption practices and applying them. The hands-on experience provided more personal interaction and direct involvement, which had a lasting effect on participants.
3. **Survey Results:** The impact can also be measured by analysing the survey results, which highlighted how the activities influenced participants' long-term consumption behaviour. The surveys provided insights into the changes in participants' intentions and how these intentions were translated into sustainable habits after the workshops.

This partnership provided significant value to all involved stakeholders:

FMC expanded its reach beyond a B2B audience, engaging directly with consumers and gaining new insights into consumer behaviour through interactive activities.

FMC members facilitating the workshops benefited from greater visibility through the social media campaign while accessing new target groups. They also gathered first-hand insights on consumer engagement with their circular fashion initiatives.

Academic partners (Aalto University and ESSCA) collected valuable data on the impact of citizen engagement activities, contributing to research and providing stakeholders with evidence-based learnings.

For the T-REX project, this collaboration offered the opportunity to work with a key French circular fashion organization, expanding proven citizen engagement strategies to a wider consumer audience. This multi-stakeholder approach demonstrates the power of collaboration in advancing circular fashion, bridging research, industry, and public engagement to drive sustainable change.

VIII. Chosen for Redesign

Event type: Educational campaign through remaking discarded clothing

Aim and Purpose

The *Chosen for Redesign* initiative was a collaboration between Emmy, a second-hand fashion platform, and Aalto University. The project explored how redesign can extend the lifecycle of garments and enhance the value and appreciation of second-hand clothing through creative transformation.

Second-hand business has been identified to be one option to extend the use time of garments through multiple users and therefore it has been proposed to be a solution to postpone garment disposal in a circular economy approach. Yet all garments are not suitable for second-hand selling (too low quality or too much wear and tear) or even if they look OK, nobody does not want to buy them.

Event Format and Flow

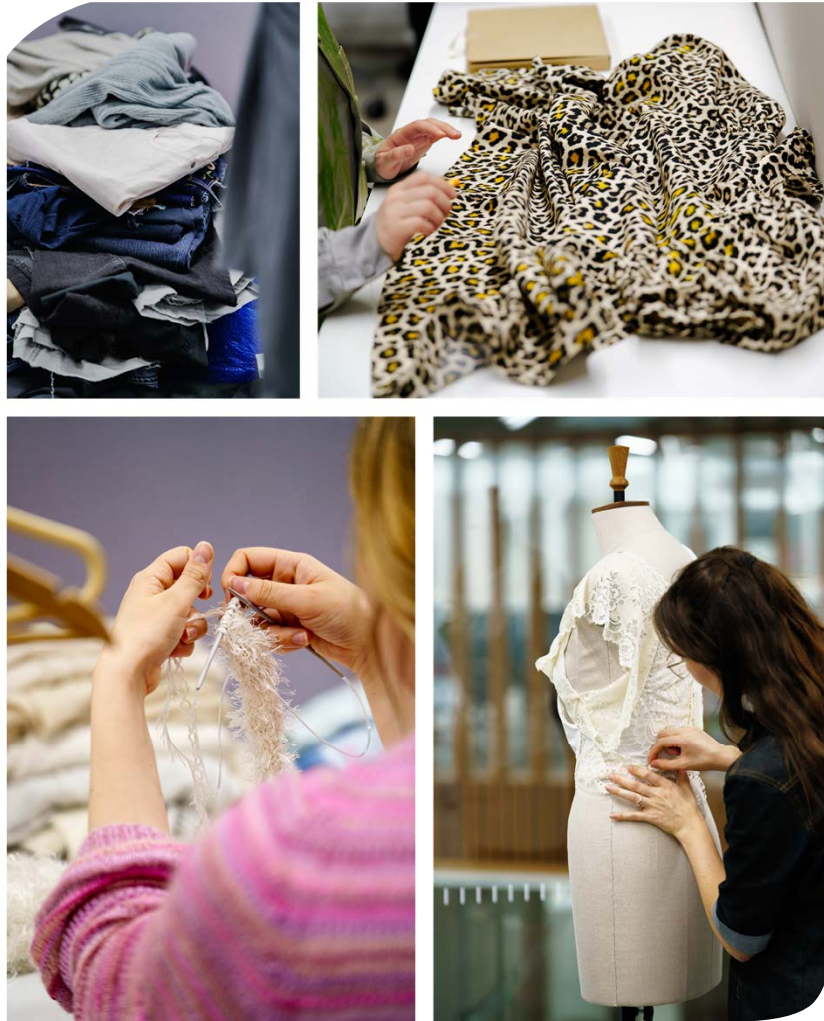
As part of the initiative, Aalto University's Fashion and Textiles students studied Emmy's product handling process, focusing on garments that were discarded or deemed unsellable. Using craft-based redesign methods, students repurposed these garments, preserving structural elements and finished details while clearly altering their appearance and adding value.

Creating a Redesign Collection

Students did object analysis for 200 garments trying to identify reasons why these garments are not sold in Emmy platform.

Second phase was the redesign period in which the aim was to create new fashion items from these unsold/discarded garments. Using craft-based redesign methods, students repurposed these garments, preserving structural elements and finished details while clearly altering their appearance and adding value.

An experimental redesign collection was developed during the summer of 2024. The collection was showcased through social media and fashion influencer Jenni Rotonen (Pupulandia), who wore one of the redesigned pieces at Finland's renowned FLOW Festival. She also shared images of the garment on her social media channels, increasing visibility for the project. This start was followed by social media campaign in autumn 2024 raising discussions about the value of fashion in general and the longevity of garments. The aim was to raise the interest especially among young fashion lovers to rethink their fashion consumption practices.



Redesign Collection Process. Photos: Jere J. Aalto.

To open the design process and describe fashion students' approach to redesign and to highlight the designers' perspectives while working with old clothes, Aalto University published a blog post about the initiative in Finnish ^[9]. The following is an example from Sofia Dinello-Morais and her way of working with redesign method.

-Describe your approach?

The creation of my pieces begins with an instinctive attraction to a specific element of the previous garments: the texture, certain constructive details, or the way it shapes the body. I start with the existing structures of these garments, using one as a base, and incorporating elements from others to create the new pieces. At times all the elements complement each other, and at times the new elements completely take over, making the initial garment almost disappear. Purposely, I seek for these new collage-garments to feel intricate, delicate, even fragile, although wearable and comfortable. It is an attempt to reclaim what is considered waste, redundant and unusable as something beautiful and meaningful. Also,

I want to highlight the slow and one-of-a-kind ways of constructing and wearing garments, adding value through processes that honour time and care.

-What was your design process like?

The process is very intuitive and involves pinning and cutting mostly on the mannequin and trying to respond to what each material asks for, depending on the available amount and how well maintained it is. Some fabrics are manipulated by washing or twisting. Each piece is almost entirely hand sewn. Working with reused garments feels very natural and relevant and, although it has challenges, it also opens possibilities. For me, it allows to find interesting connections between garments that don't necessarily relate to each other, to combine and reuse even small scraps and irregular parts of the materials, as well as to play with pre-existing details and finishings, bringing them back to life in a way that is unique and irreplicable.



Do-it-yourself Redesign instructions

Building on the *Chosen for Redesign* initiative, a follow-up project in spring 2025 focused on creating do-it-yourself (DIY) tutorials for redesigned garments. These tutorials were designed to empower individuals to recycle, upcycle, and redesign their own clothing, reducing environmental impact while fostering a community of shared skills and creative exchange. Emmy also published the DIY instructions on its website to make them widely accessible ^[10].

Two of the cases are discussed below.

A new beginning for knitwear – Saimi Parikka

Aalto University graduating textile designer Saimi Parikka explored innovative techniques for repurposing old knitwear by unravelling and reconstructing their structure. She developed six DIY tutorials demonstrating these methods.



CHOSEN FOR REDESIGN DIY

Broken Lace Technique: Unpicking unevenly

In this tutorial, the knitwear surface is unpicked unevenly. The technique is similar to the first method in *Love & Destroy*, but here the unpicking starts not only at the top but also in the middle of the knit. This makes working a little more challenging, as more stitches to be unpicked are produced when cutting from the centre.

The result is a semi transparent, laddered surface with random holes. The balanced rhythm of the composed holes gives the knit a lively and interesting look. This technique provides the opportunity to create an individual and bold surface, where imperfection is emphasized as part of its charm.

For the tutorial, you need to know

- how to sew straight stitches using a sewing machine
- know what a stitch is in a knitted garment.

Supplies: Knitwear to be worked, seam rippers, sewing thread of the same colour, scissors, sewing machine, iron

Saimi Parikka's instructions for DIY knit modification. Photo: Aino Ahola.

Jeans at the forefront of sustainable fashion – Paula Malleus-Lemettinen

Seamstress Paula Malleus-Lemettinen created tutorials for transforming old, broken, and unused denim into new garments. Her work aimed to spark discussion on social media about sustainable fashion and encourage consumers to take an active role in garment reuse.



Hi!

I am Paula Malleus-Lemettinen, a 43-year-old master seamstress and entrepreneur with 25 years of experience in the textile and fashion industry. I have been an entrepreneur since 2009 and my special expertise is in extending the life cycle of clothes and upcycling techniques. I have worked with the Chosen for Redesign project during autumn 2024 and directed the production of DIY tutorials.

The production of denim material consumes a lot of natural resources and causes significant environmental damage, especially in terms of water use: it can take up to 7,500-10,000 liters of water to make one pair of jeans. This is due both to the irrigation of cotton fields and the processes of dyeing and washing the fabric, which depletes water resources, especially in cotton producing regions such as India and Uzbekistan.

In addition, dyeing and softening denim material requires a high amount of harmful chemicals, which without proper treatment can end up in waterways and pollute the environment. The manufacturing and washing phase of denims consumes a lot of energy and the worldwide transportation of products further increases the carbon footprint.

Waste problems are also significant, as a lot of cut scraps are generated from the production of denim fabric. Used jeans also often end up in landfills. Upcycling techniques and redesign can reduce environmental impact: old jeans and cut scraps can be turned into new, unique products, saving water and energy and reducing waste. All of this supports a circular economy.

I hope you enjoy working through these tutorials and find them inspiring!

My tips for making the product:

- Read the instructions carefully first
- Find the materials you need
- Check that supplies and machinery are ready
- Proceed consistently step by step, ironing the product between each step

Paula Malleus-Lemettinen's DIY for jeans. Photo: Aino Ahola.

All instructions are published in English on the circular textiles [website](#), expanding their reach to a broader audience. ^[1]

Key Learnings and Outcomes

The idea of newness is visible in our consumption practices but also when fashion designers start their creative process. Consumers are constantly looking for new garments, new trends and new purchases. Fashion designers create new trends and design garments from virgin materials and new textiles. This initiative tried to break this prejudice showing a positive and creative example how already existing materials and garments could be the starting point for something new and fashionable. The idea was also encouraged consumers to be more active in the fashion scene and begin to modify their own garments if they don't like them anymore or when they are looking for something new to be put in their wardrobe. Redesign approach can also renew fashion designers' attitude towards old garments and can even revive some craft technique and hand-made processes.

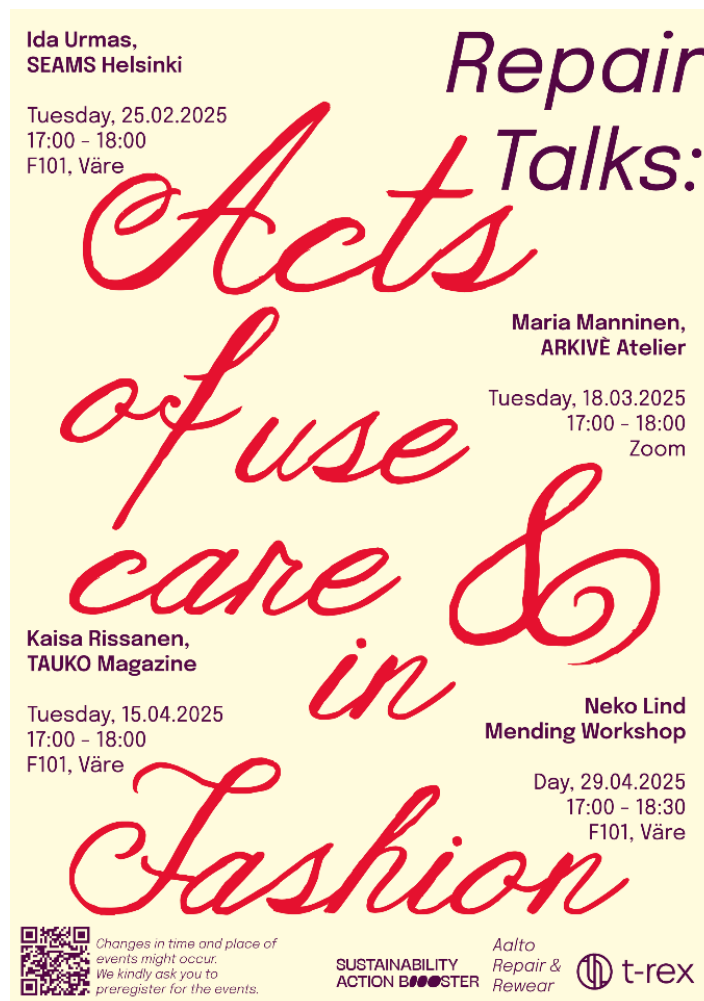
IX. Inspirational talks and events

Repair Talks

Aalto *Repair and Rewear* was an initiative founded by Master students Thekla Weißkopf and Regina Kazanjian. The project was funded by the Sustainability Action Booster, a grant for Aalto students dedicated to all types of projects promoting sustainability. Over the year 2024, Thekla and Regina hosted regular mending workshops, which created an active community within Aalto University that encouraged longevity of textiles.

In spring 2024 the initiative got extension in the form of *Repair Talks: Acts of Care and Use in Fashion*. This was done in collaboration with the T-REX project. *Repair Talks* was a series of talks that are hosting presentations and discussions with activists and frontrunners that are bringing sustainability in fashion forward, putting special emphasis on the use and care phase of garments.

Guest speakers included Kaisa Rissanen from TAUKO Magazine, Ida Urmas from SEAMS Helsinki, Maria Manninen from ARKIVÈ Atelier and Niko Lindgren, a mending influencer.



Ida Urmas,
SEAMS Helsinki

Tuesday, 25.02.2025
17:00 - 18:00
F101, Väre

Repair Talks:

Acts of use & care in Fashion

Maria Manninen,
ARKIVÈ Atelier


Tuesday, 18.03.2025
17:00 - 18:00
Zoom

Kaisa Rissanen,
TAUKO Magazine

Tuesday, 15.04.2025
17:00 - 18:00
F101, Väre

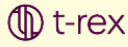
Neko Lind
Mending Workshop

Day, 29.04.2025
17:00 - 18:30
F101, Väre

 Changes in time and place of events might occur. We kindly ask you to preregister for the events.

SUSTAINABILITY ACTION BOOSTER

Aalto Repair & Rewear

 t-rex

Impact creation

Grass root initiatives are important actions to raise the interest and commitment of consumers towards conscious consumption practices like good garment maintenance and repair of products you already own. Lower-level skills are enough to be able to participate in mending workshops where sharing and co-learning can happen. Understanding materials and structures of the garments provides skills to be more active with your old garments and do actions to extend their life through repair or modifications. Repair talks presented influencers and their take on sustainability actions in an inspirational way, and this provided a confidence in consumers to also go against the consumption flow and make own kind of decision with their garments. Repair actions can create not only community of repair but also can create unique fashion style and aesthetics of longevity.

"Fashion Re-imagined" film screening



FASHION REVOLUTION SEAMS HELSINKI

"Fashion Reimagined"

movie screening & discussion

at Cinema Orion
23.4.

as part of the Fashion Revolution Week

Julia Valle Noronha /
Assistant Professor in
Fashion at Aalto

Anna Semi /
Fashion designer & Tea
at Aalto

Linda Turunen /
Researcher at Aalto

Pukhraj Ranjan /
Founder of Moi Namos

Approximately 100 attendees took part in a film screening at Cinema Orion, an art deco cinema in Helsinki's city centre, as part of the "Spring Cleaning" event. Coinciding with Fashion Revolution week, the screening was organized and hosted by Helsinki-based collective Seams, which works to promote sustainable fashion cultures through workshops and events. The film shown was "Fashion Reimagined" (2022), a documentary by Becky

Hutner ^[12]. It followed UK-based fashion designer Amy Powney's journey to make a genuinely sustainable fashion collection, with the rigidity of global supply chains brought to light as she and her team face new challenges at every turn. She is ultimately triumphant but not without significant compromises. The film gave powerful and realistic insights into the possibilities and limitations of transitioning a brand towards sustainability within the parameters of the current system. After the screening, a panel discussion was held, followed by Q&As from the audience. Panellists included: Assistant Professor Julia Noronha Valle and researcher Linda Turunen from Aalto University, independent designer Anna Semi and Pukhraj Ranjan, founder of sustainable brand Moi Namaste. An engaging discussion unfolded, questioning the reasons behind the speed of the industry and exploring how the system could be reimagined. The panellists also touched on how the role of fashion design can be expanded or redirected, highlighting the importance of promoting practices such as mending and having greater transparency with consumers on the origins of garments.

Conclusion – Key learnings and takeaways

The T-REX project's diverse citizen engagement activities offer valuable insights into how to foster a shift towards more sustainable consumption practices within the textile industry. One key learning from these initiatives is that even short-term, one-off skill-sharing experiences can significantly increase consumer interest in reuse and repair skills while promoting a sense of social connectedness. This collective engagement can lay the foundation for a culture of active consumers who are motivated to extend product lifetimes. However, our findings also point to the importance of iterative processes—testing and refining new workshop concepts over multiple sessions ensures greater effectiveness and deeper impact.

A strong demand for communal skill-sharing platforms emerged, both from facilitators eager to teach and from participants willing to learn. The social aspect of these workshops played a crucial role, as activities carried out in co-learning settings strengthened motivation and skill adoption. Providing clear take-home steps for workshop activities further enabled the continuation of skills learned, helping participants apply their new knowledge beyond the immediate experience. Additionally, designing opportunities for long-term engagement—such as participant mailing lists or follow-up sessions—can reinforce learning and sustain involvement over time.

Group participation and social interaction emerged as vital factors in motivating participants. The dynamics of group activities not only raised awareness but also helped sustain motivation. Yet, these benefits were maximized when expert facilitators provided clear guidance and practical instruction. Hands-on activities were particularly effective in fostering engagement, as they allowed participants to directly apply what they learned, compared to more theoretical, knowledge-based sessions.

At the same time, educational campaigns that focused on raising awareness and spreading knowledge in less direct ways also played a crucial role in shifting behaviours. Initiatives that used digital platforms, social media campaigns, and informational resources effectively reached broader audiences, especially when they were designed to be engaging and accessible. These campaigns helped to dispel myths, share best practices, and provide actionable steps for consumers to incorporate sustainable practices into their daily lives, even without attending in-person workshops. Such campaigns were particularly valuable in reaching people who may not have had the time or opportunity to participate in physical events but were still open to learning and adopting more sustainable consumption behaviours.

The feedback from participants also highlighted several barriers to adopting more sustainable consumption practices. These included a need for more concrete resources, such as information about trustworthy brands, eco-labels, and alternative disposal options. Financial incentives were also identified as a key motivator, along with overcoming the time and effort involved in more sustainable choices. To address these barriers, participants expressed a desire for continued support, easy-to-access resources, and follow-up opportunities to reinforce new behaviours. Providing clear, accessible information on repair services, textile recycling locations, and sustainable purchasing options could help participants maintain and expand their sustainable habits over time.

In conclusion, while consumer engagement is critical in promoting circular consumption, the role of industry and regulation is equally vital. Industry must ensure that sustainable alternatives are accessible, affordable, and attractive to consumers, while also providing clear information about sustainable product management. Additionally, regulatory frameworks that incentivize circular economy practices—such as extended producer responsibility, eco-design standards, and clearer labelling—can drive systemic change and support individuals in making more sustainable choices. The collaboration between consumers, industry, and policymakers will be key to accelerating the transition towards a truly circular textile economy.

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Annex: List of all citizen engagement activities

Activity	Date	Location	Facilitator	Participant Type	No. of participants
What makes clothes meaningful to you? - 1	25.01.24	Limit/ No Limit Art and Design Research conference, Paris	Kasia Gorniak	Art & Design researchers	6
What makes clothes meaningful to you? - 2	27.01.24	POUSH Art Centre, Aubervilliers	Kasia Gorniak, Saija Kangasniemi	Artists and fashion students	8
What makes clothes meaningful to you? - 3	20.3.24	SIFO, OsloMet University	Kasia Gorniak	Fashion students & professor	4
What makes clothes meaningful to you? - 4	17-19.4.24	Dialogical Bodies Conference, Swedish School of Textiles, Borås	Kasia Gorniak	Fashion researchers	11
Spring Cleaning event	23.04.-03.05.24	Väre Building, Aalto University, Finland	Aalto students & staff	Aalto university students & staff	93
'Fashioned Re-imagined' movie screening & panel discussion (linking to Fashion revolution international event)	23.04.24	Cinema Orion, Helsinki	Seams Helsinki	General public from Seams Helsinki & Aalto University networks	85
Post-It Shirt workshop	10.6.24	Softislab studio, Helsinki	Kasia Gorniak, Mira Järvinen, Mari Nurmenniemi	Mixed professionals & students	6
Multi-activity workshop as part of Clothing Swap (FFG)	07.05.24	Fashion For Good Museum Amsterdam	Kasia Gorniak, Elina Lewé	Attendees of Clothing swap event	30
Workshop: Actionable Stories - Why do I upcycle/recycle?	10.06.24-16.08.24	Heureka Science Centre, Finland	3 Aalto University students	Visitors of the Science Centre	230
Race Against Waste - Textile Race in Westland, Netherlands	16.09.-10.10.24	Westland, Netherlands	RAW facilitators	students aged 10-15 at 9 different schools in the region	150
Social media campaign / workshop series: What can I do with the clothes I don't wear anymore?	07.10.-08.11.24	Paris, different locations for 4 different activities	Members of FMC, Edith de Lamballerie, Elina Lewé	General public, followers from FMC and members that shared the campaign	41
Object analysis and Redesign case with unsold second-hand garments	2.6.-18.8.24	Collaboration with EMMY, second-hand fashion, fashion redesign	Kirsi Niinimäki, Anna Ervamaa, Aalto University students	Social media audience, Pupulandia + FLOW music festival followers, Paula Malleus &	5

Activity	Date	Location	Facilitator	Participant Type	No. of participants
				Saimi Parikka; redesign +DIY October 24	
Redesign instructions with EMMY (social media)	11.12.- 15.12.24	Collaboration with EMMY on DIY instructions for redesign (continuation to summer activities); shared on social media (+ story in a magazine in spring 2025)	Kirsi Niinimäki, Paula Malleus, Saimi Parikka	Social media audience of EMMY	NA
Repair Talks: Acts of Use and Care in Fashion	25.02., 18.03., 15.04., 29.04.25	Aalto University	Thekla Weißkopf, invited guest speakers	Aalto University students and others interested in Clothing repair	NA