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Enhancing knowledge and skills for a repair society. Exploring the role of repair alliances

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Enhancing knowledge and skills for a repair society. Exploring the role of repair alliances

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Summary

Meeting Flanders' circular economy and climate goals depends on making repair more common and more accessible but a shortage of repair skills limits progress. This report examines how 'repair alliances': strategic collaborations between businesses, social enterprises, educational providers, and community groups, can help bridge this skills gap and scale up repair activities.

Following grounded theory and based on desk research, stakeholder interviews, and nine detailed case studies in the textiles and electrical appliance sectors, the report shows that repair alliances can act as important pilots for new ways to build repair capacity. They offer practical training, foster soft skills, foster efficiency, and help normalise repair as a viable option for citizens. However, many alliances remain small-scale and face challenges moving from pilots to sustainable, larger operations.

Answering the central research question: *'What is the role of alliances in upscaling and providing skills for repair activities in Flanders?'* the study finds that alliances can connect fragmented actors and resources, experiment with new models, and help develop a skilled workforce for repair. To fully realise this potential, the report identifies several areas where policy could play a supportive role:

- Stable funding for local alliances that link partners;
- Public support for affordable workshop spaces and shared equipment;
- Integration of repair skills into vocational education and schools;
- Practical incentives such as consumer repair bonuses, tax reductions for repair services, and flexible work integration contracts to allow longer training periods.

Taken together, these measures could help transform early repair alliances from pilots into the committed platforms of a repair society that keeps valuable products and skills in use for longer.

Samenvatting

Het behalen van de Vlaamse doelstellingen voor circulaire economie en klimaat vereist dat herstellingen gewoner en toegankelijker worden. Een belangrijk obstakel daarbij is het tekort aan herstellingsvaardigheden, dat de vooruitgang afremt. Dit rapport onderzoekt hoe 'Repair Alliances' (reparatieallianties) - strategische samenwerkingsverbanden tussen bedrijven, sociale ondernemingen, onderwijsverstrekkers en gemeenschapsgroepen - deze vaardighedenkloof kunnen helpen overbruggen en reparatieactiviteiten kunnen opschalen.

Aan de hand van gefundeerde theorie en op basis van deskresearch, interviews met belanghebbenden en negen gedetailleerde casestudies in de textiel- en elektrosector, toont het rapport aan dat reparatieallianties kunnen fungeren als belangrijke proefprojecten voor nieuwe manieren om reparatiecapaciteit op te bouwen. Ze bieden praktische opleidingen, stimuleren zachte vaardigheden, bevorderen efficiëntie en helpen reparatie te normaliseren als een haalbare optie voor burgers. Tegelijkertijd blijven veel van deze allianties kleinschalig en worstelen ze me de stap van tijdelijke pilots naar duurzame en grootschalige operaties.

Bij het beantwoorden van de centrale onderzoeksvraag: *'Wat is de rol van allianties in het opschalen en voorzien van vaardigheden voor herstellingsactiviteiten in Vlaanderen?'* stelt de studie vast dat allianties gefragmenteerde actoren en middelen kunnen verbinden, kunnen experimenteren met nieuwe modellen en kunnen helpen bij het ontwikkelen van een geschoold personeelsbestand voor herstelling. Om dit potentieel ten volle te benutten, identificeert het rapport verschillende gebieden waar het beleid een ondersteunende rol kan spelen:

- Stabiele financiering voor lokale allianties die partners met elkaar verbinden;
- Overheidssteun voor betaalbare workshopruimtes en gedeelde uitrusting;
- Integratie van reparatievaardigheden in beroepsonderwijs en scholen;
- Praktische stimulansen zoals reparatiepremies voor consumenten, belastingverminderingen voor reparatiediensten en flexibele arbeidsintegratiecontracten om langere opleidingsperiodes mogelijk te maken.

Samen kunnen deze maatregelen helpen om Repair Alliances te laten doorgroeien van kleinschalige proefprojecten tot robuuste platforms van een reparatiemaatschappij die waardevolle producten en vaardigheden langer in gebruik houdt.

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1. Introduction

Repair is a key strategy in the transition from a linear economy to a circular economy (CE). By extending the lifetime of products, repair supports the slowing and closing of material loops, reducing waste, conserving resources, and decreasing the need for new product purchases.

The literature often highlights the job potential of the CE transition and more specifically repair work. Reuse and repair activities in the EU are found to be more labour-intensive compared to recycling activities within a circular economy. Reuse and repair activities do not only imply a stronger commitment to CE, compared to recycling, but could also show greater job creation potential with less resource consumption (Llorente-González & Vence, 2020). By moving towards more of a CE, the European Commission (2018) anticipates a creation of approximately 700,000 jobs in the EU by 2030. Repair, in particular, is often singled out as having one of the most significant impacts. For example, Ribeiro-Broomhead & Tangri (2021) estimate that the job creation potential of repair is 404 jobs/10,000 tonnes per year (TPY), compared to 115 jobs in recycling, 55 in remanufacturing and 7 jobs in composting. In Flanders, Willeghems and Bachus (2018) expect an increase of 30,000 workers by 2030, in particular in repair, waste processing and reuse.

While job creation is often presented as an important benefit of the CE, it is key to focus on the skills and knowledge necessary to fulfil this potential. Circular activities are already relevant within European economies, but their contribution is still modest, especially considering the critical role they must play in the transition to a CE (Llorente-González & Vence, 2020; Niskanen & McLaren, 2023). As a result, the effect on labour remains limited as well as the progress of the CE transition which is highly dependent on a workforce with the right skills. Despite its transformative potential, the uptake of repair practices and business models remains limited, though recent EU developments such as the Right to Repair[1] and the Eco-design for Sustainable Products Regulation[2] create a legal framework to encourage a higher prevalence of repair practices.

One of the key barriers to scaling repair is a lack of technical and practical skills across the population. This challenge is particularly evident in regions such as Flanders where technical skills are in declined. The decline in repair-related competencies has been linked to the offshoring of manufacturing, which has reduced hands-on exposure to how products are made and maintained (Cooper & Salvia, 2018). Additionally, changes in educational priorities such as a reduced focus on vocational training and hands-on learning have contributed to lower confidence among young people in performing manual tasks or technical repairs (Carr, 2017; Rogers *et al.*, 2021).

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[1] Directive on repair of goods - European Commission (europa.eu)

[2] Ecodesign for Sustainable Products Regulation - European Commission (europa.eu)

These structural shifts, mirrored in other European contexts (e.g. Corwin, 2023; Diddi & Yan, 2019), make it harder to support the practical implementation of CE goals through repair. In order to transition to a repair society, we thus need to scale up repair skills. *'Knowing how to fix things […] embodies the type of resourcefulness in everyday practice that will undoubtedly be needed in the future.'* (Carr, 2017).

While policies may be implemented to encourage repair by making it more accessible and attractive to consumers, a significant barrier often identified in the literature is the lack of adequate repair skills, which help enable effective and widespread repair activities. As the 'right to repair' and 'design for repair' are increasingly encoded in legislation and policy tools, it is important to consider if and how efforts can enhance the knowledge and practical skills necessary to repair.

Repair used to be a culture, mindset, and practice that shaped not only how people lived but also how products were designed. This repair mindset has gradually eroded with the rise of mass production and disposable consumer goods driven by cheap designs and 'planned obsolesce' (Perzanowski, 2022). A linear *'*take-make-waste*'* society arose. Municipal waste in Belgium rose from 455 kg per person in 1995 to 731 kg per person in 2020 (OECD, n.d.). A portion of this waste includes products that could have been repaired but were discarded prematurely. In the EU, such discarded (potentially) repairable items contribute to 35 million tons of waste and 261 million tons of greenhouse gas emissions annually (European Commission, 2023).

To accelerate the transition to a CE and tackle the pressing challenges of climate change and environmental degradation, this mindset should be revived and repair reintegrated into both daily life and economic practices. Repair skills play an important role in this revival.

One way to foster this mindset is to experiment with and test new circular business models that engage consumers as active participants (also known as so-called *'*prosumers*'*) who repair, share, or extend the life of their own products. Such experimentation helps to identify which approaches work in practice, how they can be scaled, and how they can be adapted to different sectors. These trials often aim to train labour, test new service models, and change consumer habits simultaneously, but results can be mixed and context-dependent. Therefore, building space for experimentation and learning-by-doing is an essential aspect of any successful CE transition, particularly when it comes to developing repair ecosystems that are economically viable, socially acceptable, and environmentally impactful.

However, individual skills alone cannot drive systemic change. The challenges surrounding repair, including systemic, technical, economic, social and behavioural barriers, cannot be addressed by isolated actors. Addressing these requires coordination, mutual learning and resource pooling across different domains and actors.

Cross-sector and multi-stakeholder collaborations are increasingly recognised as essential drivers of sustainability transitions. These partnerships bring together diverse perspectives, expertise, and resources, enabling innovative solutions to complex social and ecological challenges. Repair alliances, which unite stakeholders across sectors in repair initiatives, hold significant potential to address some of the key barriers to repair, including the skills gap, by acting as more strategic and purposeful forms of partnership within the wider repair ecosystem.

A repair alliance is defined in this report as a collaborative arrangement among diverse actors such as formal companies, institutions, governmental bodies, social enterprises, informal networks, and community organisations who come together around shared goals related to repair and the local repair ecosystem they help to strengthen. These alliances may take structured or informal forms and often bridge sectors and levels of governance. Unlike general collaboration, which can describe any form of working together, alliances are intentional, strategic partnerships built around a clear, shared purpose. In the context of the circular economy, alliances do not just share resources and knowledge; they actively test new approaches, experiment with business models, or help prepare consumers to become more active 'prosumers' who contribute to extending product lifetimes. This experimentation can involve training workers, piloting new service offerings, or developing innovative ways to embed repair into daily life. While results are often mixed and context-specific, this deliberate approach to learning-by-doing makes alliances an essential component for scaling practical circular economy solutions in real-world settings. Repair alliances may carry the potential to enable systemic change and future scaling and can therefore be understood as living laboratories that test new ways of organising repair, upskilling workers, and involving consumers more directly in circular practices, highlighting why local coordination structures deserve targeted policy support.

The research question guiding this report is: *what is the role of alliances in upscaling and providing skills for repair activities in Flanders?*

In this report, we examine the potential of repair alliances[3] to tackle challenges related to repair skills. We compare the cases of large household electrical appliances (EEA) and textiles (TX) because they represent two of the most frequently repaired product categories in Flanders, as documented in Dunne and Multani, 2024. Furthermore, they also differ across multiple dimensions that help understanding the broader dynamics of repair behaviour, challenges and opportunities. Large household electrical appliances can be complex electromechanical devices that require specialised tools, diagnostics and technical knowledge to repair. Repair of these products can be practically and economically motivated but can also be viewed as outdated or burdensome with a lack of emotional attachment by their owners. Repair is often male-dominated and aligned with technical professions. Lastly, EEA is primarily the target of eco-design and right to repair policies at the EU level. Textiles, by contrast, are considered to be less complex with repair practices also more accessible and requiring less specialised infrastructure. Repair of textiles is more frequently informal and can be viewed with a stigma (due to association with poverty) or pride in the craft with visible mending revivals. Some textiles can have a strong emotional value motivating repair, though not in the case of increasing consumerism and fast fashion. Policy attention is increasingly focusing on

[3] The creation and functioning of Repair Alliances themselves are outside the scope of this report.

textiles through sustainable textiles strategies, but with less mature regulatory support compared to EEA.

By contrasting these two sectors, we aim to capture a broader picture of the different dynamics and challenges that repair alliances face, particularly in relation to 'repair' skill development. In this study, we focus specifically on textile repair and on repair and refurbishment of electrical and electronic appliances (EEA), including activities aimed not only at product longevity but also at preparing items for resale and reuse.

Through nine case studies, in textiles and large household electrical appliances (EEA) (also mentioned as big white goods in this report), we explore how repair alliances operate, the obstacles they face, and how policy interventions can support these alliances in overcoming barriers and driving systemic change towards a more sustainable future.

1.1 Repair policy developments at the EU level

Significant efforts have already been made at various levels to promote repair as a critical component of the transition to a CE. As part of the European Green Deal, the European Commission adopted the Circular Economy Action Plan (CEAP) in March 2020. More recently, the Commission has introduced two landmark directives, first outlined in the CEAP, designed to integrate repair more effectively into product lifecycles and encourage sustainable consumer behaviour.

The Eco-design for Sustainable Products Regulation (ESPR), which came into effect in 2024, is a package of measures aimed to improve the sustainability of products placed on the EU market. It replaces the Eco-design Directive from 2009 and provides a framework for establishing eco-design requirements on specific product groups. These eco-design requirements focus on improving product durability, reusability, upgradability and reparability. A central feature of this directive is the introduction of digital product passports, which would provide essential information about a product's repairability, components, and environmental impact. The ESPR text outlines specific product groups that the Commission must prioritise, including textiles, furniture, ICT products and other electronics. The actual requirements for each product group are yet to be determined and will be published in secondary legislation.

Complementing the ESPR, the Directive on Repair of Goods (also known as the Right to Repair), which entered into force in the summer of 2024, aims to promote the repair of goods over their replacement. Member States must transpose this directive into national law by 31 July 2026. The directive establishes common rules requiring manufacturers to repair products within a reasonable timeframe and at a fair price, while ensuring access to spare parts and repair service information. Additionally, an online platform will be introduced to help consumers find repair professionals, and a European Repair Information Form will allow consumers to easily compare repair options. The scope of the directive is limited to consumer goods, excluding business-to-business and industrial products, and applies only to items already subject to repairability requirements under EU law. Moreover, guidelines are still lacking on how to define what constitutes a 'reasonable' price for spare parts.

Recent feedback by Repair EU and RREUSE (see Feedback on Horizontal Repairability Requirements in ESPR Working Plan) highlights key gaps that still need to be addressed to make these policies fully effective in practice. For instance, the feedback stresses the need for binding horizontal repairability requirements that cover all relevant product groups, not just those prioritised in secondary legislation. It also calls for stronger obligations on the availability of affordable spare parts, fair pricing, and the removal of software barriers that hinder independent repair.

Together, these newly adopted directives could provide a significant policy push to mainstream repair practices across the EU. However, their success will depend on effective implementation, the support of national governments, and the active engagement of all stakeholders, including businesses, repair professionals, and consumers. More importantly, to truly close the implementation gap, the insights from networks like Repair EU must be translated into clear horizontal rules, fair pricing mechanisms, and capacity-building for local repair actors.

1.2 Repair in Flanders, Belgium

The Flemish government has established a goal to achieve a 30 percent decrease of its material footprint per capita by 2030 and by 75% by 2050. From 2010 to 2021, the material footprint decreased from 27.6 tonnes to 24.7 tonnes per capita, amounting to a 11% reduction over the span of ten years (CE Monitor, n.d.). Although repair does not yet have a formal target within circular economy targets of the Flemish government, significant challenges lie ahead, as repair initiatives could play a role in further reducing the material footprint.

Policy efforts to promote repair in Belgium remain relatively limited. The country has introduced a reduction in value-added tax (VAT) for certain repair services. In addition, a new law adopted in January 2024 requires manufacturers and retailers to provide a repairability index for select household appliances, which will take effect in 2026.[4] However, this measure lacks the comprehensive approach seen in other countries like France. In addition to a repairability index, a repair fund has been introduced in France that covers repairs for textiles, shoes, and electronic household appliances. This fund provides financial support in the form of discounts for repairs. Similarly, other regions like Austria, and some Lander in Germany have introduced repair voucher schemes, providing financial incentives or discounts to encourage citizens to repair rather than discard broken items. These schemes typically offer direct subsidies, vouchers, or price reductions for repair services.

According to Eurostat figures on the basis of the annual detailed enterprise statistics, the turnover of the EU's B2C repair sector was more than €20 billion in 2019. After remaining relatively stable between 2011 and 2015, its turnover peaked in 2017 at more than €23.5 billion but has since declined. In 2019, around 149,000 people were engaged in repair services in EU27. More than 50% of the employees working in this sector were engaged in repair of various type of electronic products. After the Netherlands, Belgium has the lowest number of employees working in the repair sector (relative to the population) in the EU.

Examining the latest enterprise statistics downloaded for Eurostat under 'Annual detailed enterprise statistics by size class and NACE Rev.2 activity',[5] there were 3,469 repair enterprises operating in Belgium in 2022. These may be enterprises only offering repair, or also offering other services. In total they employed 5,116 FTEs and had a combined turnover of 525 million, representing an increase of 9%. This appears to be a significant increase in the trend of repair in Belgium (see Figure 1.1). However, provisional data from 2023 indicates a decline in revenue to levels seen during the corona crisis when the industry was hit hard. Though it should be noted that the data series prior up to 2020 does not match 1:1 with the enterprise statistics published in 2021 onwards. Further research is needed to see how comparable both data sources are and this volatility in the 2022 figures.

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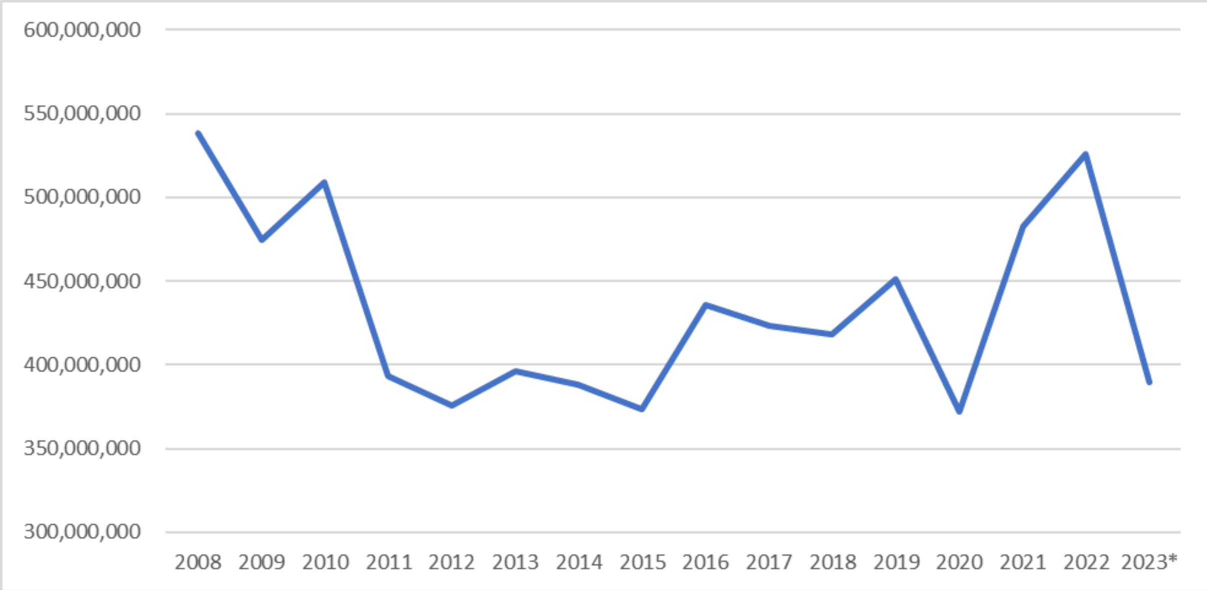
[4] https://www.health.belgium.be/nl/federaal-actieplan-circulaire-economie-2021-2024

[5] [sbs_sc_ovw] Enterprise statistics by size class and NACE Rev. 2 activity (from 2021 onwards)



Note: 2023 figures are provisional

Source: Eurostat

Figure 1.1 - Turnover in euros, 2008-2023 for Belgian B2C repair companies (based on annual detailed statistics for services up to 2020 and enterprise statistics by size class and NACE Rev.2 activity from 2021 onward)

Calculations reported by a joint MICHELLE and CE Center publication (Dunne & Multani, 2024) estimate that the formal repair sector of computer and household goods amounted to 1,073 FTE workers in 2021. Additionally, based on a survey of the Flemish population, the informal time spent repairing household goods (i.e. textiles, furniture, electronics, bikes and other household goods excluding vehicles or home renovations) equates to another 1,700 FTE highlighting the importance of informal repair within the current repair landscape.

This combination of formal and informal repair time shows that household-based repair is a part of the circular economy, but often overlooked in policy discussions. To address the skills challenge structurally, more hybrid models could connect informal household repair with professional support (e.g. through remote guidance, DIY resources, or AI tools that help people repair more effectively). Especially for small household goods, social innovations that boost the efficiency of informal repair could help respond to market gaps where formal repair services are limited or too costly. Equally important to that is the role that informal repair can play in fostering a mindset for repair in households, so that people feel confident, willing, and prepared to tackle simple repairs themselves.

In 2023, repair as a circular strategy was for the first time more broadly mapped in Flanders using two different data sets. A survey that covered both formal and informal repair channels found that a total of 9.7 million products were repaired, equating to 1.78 items per adult person (Dunne & Multani, 2024). Based on the household budget survey, which tracks paid activities, it was estimated that 12 million repairs were carried out, corresponding to 4.16 items per household (CE Monitor, n.d). This suggests a significant untapped potential for expanding repair practices, particularly in categories such as textiles and electrical appliances (EEA), which are among the most commonly repaired items.

In Flanders, 60% of the population reported having at least one consumer good repaired within the past 12 months (Dunne & Multani, 2024). This aligns with findings from the behavioural study by Cerulli-Harms *et al.* (2018), which indicated that 64% of EU consumers had repaired products that year. While these figures may initially seem relatively encouraging, they also highlight that 4 in 10 of the population did not engage in any repair activity during the measured periods, neither repairing something themselves nor having an item repaired by someone else.

In further analysing the data analysed by Dunne and Multani for this study, in addition to the 40% who didn't have anything repaired, the Flemish population tend to fall into the category of having had only one or two items repaired (31%) or they tend to be more prolific repairers (29% had upwards of three items repaired).

About one fifth of people (19%) were identified as self-repairers and double that proportion (41%) as outsourcers of repair to formal or informal channels. While younger people were more likely to have had at least one item repaired, they tend to outsource the work more often, typically to family members. On the other hand, older generations do the repair work more often by themselves, but they tend to choose repair as an option less often if we take repair incidence as a proxy for this.

2. Conceptual frameworks for defining repair activities

2.1 Defining repair

In the CE literature, repair is commonly understood as one of the ‘inner circles’ of the circular economy or one of the ‘higher R-strategies’ on the CE ladder (Potting *et al.*, 2017). Repair ideally prolongs the lifetime of material objects and resources, which reduces new product purchases and thereby the negative impact on the climate and environment. Research on repair within the context of the CE is a relatively new field, with initial publications dating back to around 2010. The majority of works on this topic have been published from 2018 onward (McLaren *et al.*, 2020; Niskanen *et al.*, 2021).

Recent scholarship provides frameworks for understanding repair not only as a technical fix, but as a social, political, and systemic activity, which is central to analysing how alliances can support the upscaling of repair skills in Flanders. This growing body of research explores several key dimensions of repair, including technical, economic, social, educational, and institutional aspects that shape both the feasibility and attractiveness of repair practices (see Table 2.1).

Table 2.1 - Key dimensions of repair

Dimension	Focus
Technical	Availability of skills, tools, spare parts, and product design enabling or hindering repair.
Economic	Costs of repair vs. replacement, labour costs, and economic incentives or disincentives.
Social	Cultural attitudes toward repair, trust in repair professionals, and social norms.
Educational	Decline of manual skill education, lack of training programmes, and skill transfer mechanisms.
Institutional/policy	Role of legislation, tax structures, public support, and regulatory frameworks.
Knowledge/informational	Consumer awareness of repair options, transparency about repairability and quality.

Dimension	Focus
Infrastructure/accessibility	Physical access to repair services, networks, and logistical support.
Cultural/political	How societies define what is broken, and the values placed on maintenance and repair.
Gender	Influence of gender norms on who performs repair, how it's valued, and access to roles.
Process/practice	Understanding repair as an ongoing process and embedded social practice.

While this report focuses primarily on the role of repair alliances in addressing skill-related barriers, it is important to situate this discussion within a broader and increasingly interdisciplinary body of research.

The emerging sociology of repair introduces a more expansive understanding of repair as a socially and politically contested activity. From this perspective, breakdown is not merely a technical failure but a moment that can prompt reflection on, and potentially transformation of, the social and economic systems in which technologies and practices are embedded. Additional strands of scholarship further expand the understanding of repair by examining its cultural and political dimensions, including how societies determine when something is considered broken and why, as well as the values attached to restoration. Others explore the gendered nature of repair, analysing how roles, skills, and perceptions of repair are shaped by gender norms and inequalities. Moreover, repair is increasingly conceptualised not only as a technical act but as a process and a socially embedded practice, situated within broader systems of meaning and value.

Henke (2007, 2017) distinguishes between repair as maintenance (restoring the status quo) and *repair as transformation* (reshaping systems), a distinction echoed in McLaren *et al.* (2020), who categorise repair as reconstruction, remediation, reconciliation, or reconfiguration. These models help situate alliances as potential drivers of either stabilisation or transformation within repair ecosystems.

Svensson-Höglund *et al.* (2022) envision four 'repair societies' based on who performs repair (users or professionals) and how sustainability is achieved (behavioural change or technical innovation). These are summarised in Figure 2.1, and serve as systemic scenarios against which to assess the current and potential role of repair alliances in Flanders. Figure 2.1 shows four types of 'repair societies' based on two dimensions: whether repairs are done mainly by users themselves or by professionals, and whether sustainability is achieved more through encouraging behavioural change or through technical innovations. This framework helps illustrate the range of possible futures for repair culture and where alliances might intervene to shift practices.

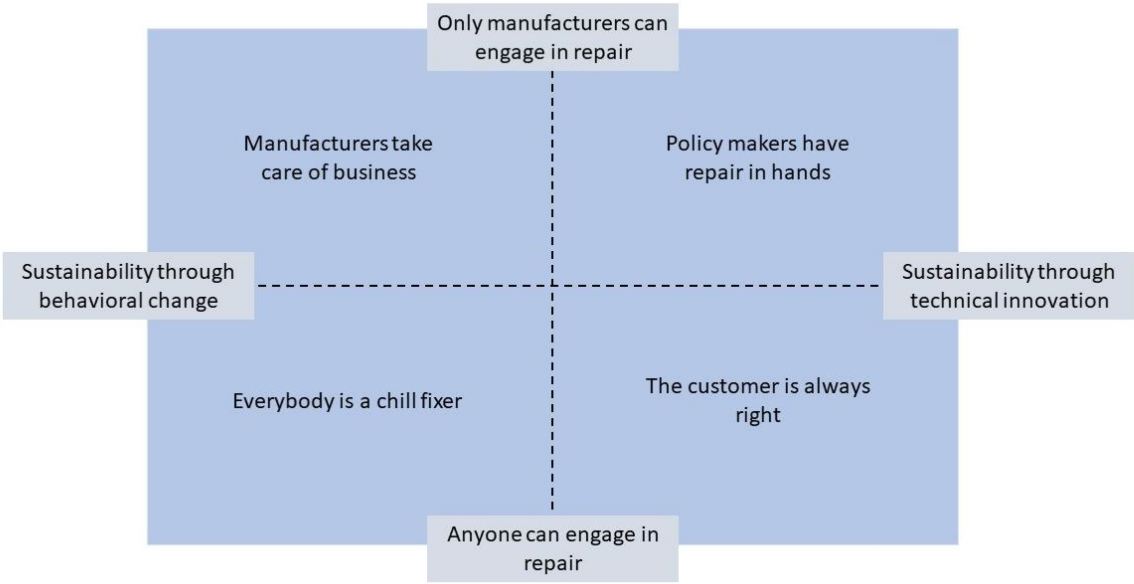
From a process-oriented perspective, Russell *et al.* (2023) and Svensson-Hoglund *et al.* (2023) view repair as an iterative journey involving stages such as *interpreting brokenness*, *engaging in repair*, and *using the repaired item*. These insights highlight how repair skills evolve over time, through experience, access to tools, and shared knowledge: all areas where alliances may play an enabling role.

Moreover, research by Jaeger-Erben *et al.* (2021) (see Figure 2.2) frames repair as a *social practice*, shaped by perceived competences, behavioural costs, and available support. This aligns with findings from Laitala *et al.* (2021), who show that greater repair knowledge leads to better maintenance and more durable product choices. Figure 2.2 visualises how people's repair decisions are influenced by the skills and knowledge they feel they have (competence), the practical barriers they face (behavioural costs), and the support they can access, such as tools, information, or community help. This highlights points where alliances can lower barriers and build people's confidence to repair.

The literature stresses that developing repair habits supports successful repairs in the future. Facilitating conditions for this habit formation include easy access to tools and resources for acquiring repair knowledge and skills. Early exposure to repair activities, such as in schools or repair cafes, could also increase the likelihood of adopting repair habits by normalising the practice (Hielscher & Jaeger-Erben, 2019; Russell *et al.*, 2023). Stakeholders in the study by Niskanen and McLaren (2023) highlight the importance of teaching the basic lesson that items can be repaired. As solutions, stakeholders in the study suggest implementing mandatory repair classes in schools, establishing vocational repair training programmes, offering craft education up until master's level at universities, and certifying craft skills training to enhance recognition and uptake.

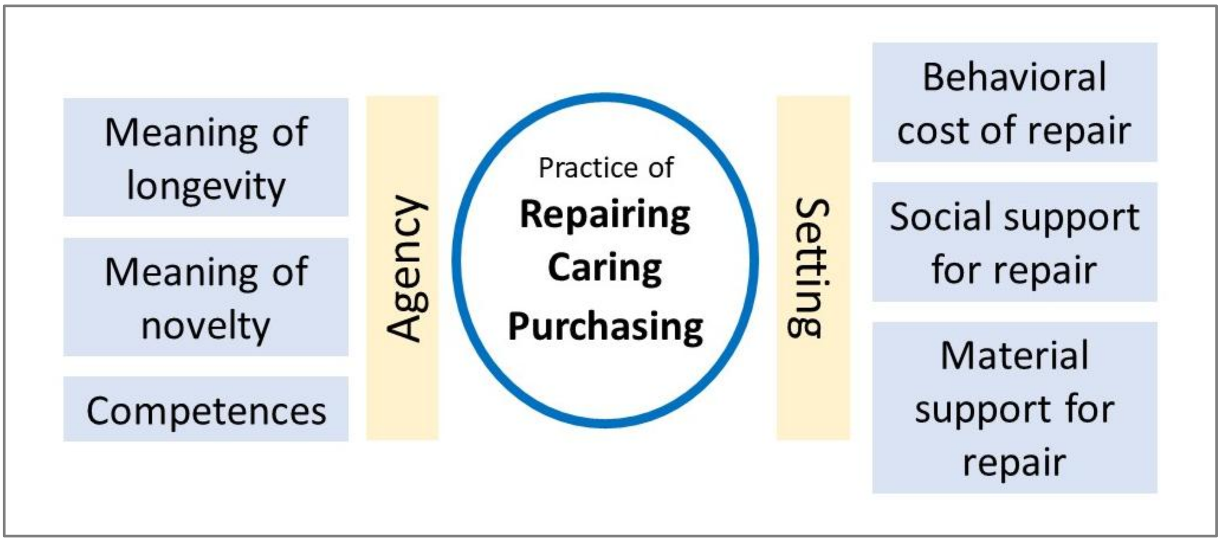
Finally, Niskanen *et al.* (2021) argue that repair should extend beyond closing material loops to address systemic issues such as economic inequality, social exclusion and environmental harm. This line of thinking aligns closely with the concept of care, which Fischer and Tronto (1990) define as *'everything that we do to maintain, continue and repair our world so we can live in it as well as possible.'* It shifts attention from what is being repaired to why. This question is central to McLaren *et al.* (2020). This broader framing also brings to light the ambivalence of repair practices: while often associated with sustainability, repair can also serve to prolong the lifespan of infrastructures and industries that are themselves unsustainable, such as fossil fuel extraction (Corwin, 2023).

By connecting these frameworks with real cases, we can better understand how alliances function not only as training providers or service hubs but also as strategic enablers of broader repair ecosystems. Taken together, these perspectives help clarify why alliances matter. Alliances bring together actors across sectors: formal and informal, institutional and grassroots. They thus have the potential to address not only technical barriers, such as skill shortages, but also the broader social, cultural, and political factors that shape repair practices. By fostering collaboration, mutual learning, and shared responsibility, alliances can contribute to more inclusive and systemic approaches to repair that go beyond individual consumer choices or isolated business models. Studying their role offers insight into how diverse forms of expertise, care, and value can be mobilised to support more sustainable and equitable repair futures.



Source: Svensson-Höglund *et al.*, 2022

Figure 2.1 - Adjusted version of repair societies framework



Source: Jaeger-Erben *et al.*, 2021

Figure 2.2 - Adjusted version of conceptual framework for product-related practices

2.2 Skills in a repair society

This study considers both consumer facing repair and repair for resale or reuse across sectors, recognising that they often involve different practices, actors, and objectives. In the textile sector, repair is typically aimed at returning items to the original owner, often focusing on garment longevity and user satisfaction. In the EEA sector, especially within the social economy, repair frequently takes the form of refurbishment: restoring products for resale through second-hand channels. That said, some organisations also provide in-home repairs for consumers. While these activities differ in scope and delivery, they share overlapping skill requirements and face similar systemic barriers, such as labour shortages, fragmented training pathways, and limited public awareness. It is also necessary to recognise that the development of repair skills needs to be anchored beyond professionals. Repair should be embedded in the mindset of the wider society, as repair depends not only on repair skills available in technicians but also on citizens' readiness to participate in repair behaviours and adopt a prosumer mindset. Studying them together allows for a more comprehensive understanding of how repair skills can be developed and scaled, regardless of whether the end goal is reuse by the same user or resale to a new one.

As Carr (2017) puts it, *'knowing how to fix things […] embodies the type of resourcefulness in everyday practice that will undoubtedly be needed in the future'.* As repairs can range from quick fixes to more elaborate repair projects, it requires a broad variety of skills. It is highly dependent on the type of repair needed, as well as the product category.

As reported in Dunne and Multani (2024), amongst those who indicated they had repaired a consumer product themselves, informal pathways to skill development dominate. In this report, we conduct an analysis of all items that were reported to have been self-repaired by respondents to the survey to identify which skills sources were used. Respondents were asked which skills (up to two of the most important) did they use to repair items within each consumer product category. The analysis presented in this report uses the item as the unit of analysis and as a result all percentages refer to the share of repaired items and therefore how frequently a given skill source was implicated in repair activity, not how many people cited the source amongst their primary means of acquiring the skill to repair that item. A regional breakdown of the source of repair skills, provided for the first time in this report, reveals variation in the role of different players in fostering repair skill development

Before comparing trends across regions and skill sources, it is important to note that the percentage of self-repaired items amongst all items repaired within a province was broadly similar, though Vlaams-Brabant did have significantly more self-repaired items in comparison to West-Vlaanderen and Limburg.

Table 2.2 - Self-repaired items as a percentage of all items repaired in each province

Province	% of items that were self-repaired
Antwerp	38.4
Vlaams-Brabant	41.5
West-Vlaanderen	31.8
Oost-Vlaanderen	35
Limburg	33
Average	**35.9**

Self-taught skills are the most common source of repair knowledge, with 51.6% of all self-repaired items relying on this skill source. There is no significant difference between Flemish regions when it comes to items utilising self-taught repair skills. Product-wise, self-taught repair skills are particularly dominant when it comes to electrical appliances (65.6% of self-repaired items relied on this skill), digital devices (63.4%) and furniture (65.7%). In contrast, self-taught skills are less common in textiles with 41% of all self-repaired textiles mentioning this as an important skill source.

Family-taught repair skills are also foundational to repair in Flanders with also almost half of repaired items (47.9%) drawing on this source. As was the case of self-taught skills, there are no geographical differences whilst the degree to which different products rely on this skill source is important. In contrast to self-taught skills, the pattern reverses with over half of all textile self-repairs utilising family-taught repair skills (54.3%) compared to just over a third of electrical appliances (37%) and digital devices (34.3%).

Other skill sources are far less dominant and were mentioned for a fifth of self-repaired consumer items or less. The most common of these was having repaired an item on the basis of skills learnt in formal (initial) education (18.3%) which was most likely to be the case in Antwerp (25.2%) and for textiles (22.5%; though not significantly different from electrical appliances at 21.4%). 16.3% of self-repaired items were repaired on the basis of skills learnt from social circles which didn’t vary significantly according to product type whilst Vlaams-Brabant and West-Vlaanderen did rely more heavily on this source of repair skills (21.6% and 24% respectively). This could suggest stronger informal community networks for repair skill acquisition but would require deeper investigation. A similar proportion (15.5%) were repaired through skills learnt at work with electrical appliances (22.9%) and digital devices (26.1%) as well as the provinces of Vlaams-Brabant (20.5%) and West-Vlaanderen (19.9%) most commonly relying on skills acquired in work contexts. This skill is least frequently applied to textile self-repair (9.9%). Skills learnt in a workshop or lesson (6.6%) was the least common skill pathway, therefore being a relatively insignificant source of informal repair skills in Flanders.

Repair is and can be conducted both formally and informally. When a product breaks, the user typically has four options (Svensson-Höglund *et al.*, 2022):

1. Repair it themselves (DIY) or get help from a repair community (DIT).
2. Contact the retailer, manufacturer or their authorised network for them to conduct the repair.
3. Reach out to an independent repairer or
4. Discard the broken device.

Råberg (2022 in Lundberg *et al.*, 2024) identified three different types of skills perceived to be relevant for repair activities among citizens: this included household skills (e.g. maintaining the condition of goods), manual skills (e.g. sewing, technical skills, being handy), and research skills (e.g. searching for repair instructions online).

The skills required, and by whom, is highly dependent on the type of repair society that emerges, as illustrated by the four repair society futures of Svensson-Höglund *et al.* (2022). Each scenario entails something different in terms of skills and who needs to have them. For example, in the scenario 'manufacturers take care of business' the knowledge and skills to repair remain with the manufacturers and are highly untransparent. On the other hand, in the 'everyone is a chill fixer' scenario, people started collaborating with others to solve the repair challenges together. The repaired products might not always be pretty, but they work, and these efforts contribute to local empowerment and a sense of community.

Depending on the type of repair work, where the activities take place, who does them and how they are valued, repair work can be configured as a profession, a skill, a talent, a responsibility or even an enjoyable pastime (Hall & Jayne 2016 in Carr, 2017). Burger *et al.* (2019) refer to repair work as a low-skilled, technical job that typically requires no college education. On the other hand, because repair work is unpredictable and rarely repetitive, as Corwin (2023) notes, it requires a certain ingenuity (Graham & Thrift, 2007) and improvisational skills (Henke, 1999). These characteristics of repair work make it difficult to automate, rendering it a rather labour-intensive circular strategy (as opposed to i.e. recycling).

2.3 Gendered division of repair work

The literature has highlighted that repair work is at risk of sustaining gendered divisions of labour. For example, Young & Rosner (2019), who conducted an ethnographic study on several fixers' collectives in Seattle, observed a 'stubbornness of classical gender roles' in repair work. While many of the women involved in these sites possessed significant technical skills or were keen to learn more, they frequently assumed the position of assistant or spectator to the male repairer. Rosner and Ames (2014) also observed that the work of repair was selectively taken up and rejected in gendered ways in two repair initiatives (in the US & Paraguay). The researchers observed distinctions made between male and female competencies (such as low-tech vs. high-tech, soft vs. hard, gentle vs. rough) and that female coaches more often than their male counterparts moved toward 'low-tech' processes of sewing and mending.

Furthermore, Rogers *et al.* (2021) also found persistent gender divisions amongst repair economy participants based on an analysis of a public survey in Hull (UK). They discovered that male DIY repairers were more likely to repair small appliances, expensive tools, bicycles and motor vehicles, while women were more likely to repair clothing. These gender stereotypes were also reflected in terms of willingness to work in profession repair services. In terms of using professional repair services, women showed a higher likelihood to be users across product categories.

2.4 Barriers to repair

The literature identifies a wide range of barriers to repair, affecting both consumers and businesses. Many of these barriers relate to cost. Repair is often more expensive than replacement due to high labour and logistics costs, which impacts consumer decisions (Cooper & Salvia, 2018; McCollough, 2009) as well as business viability (Möbius, 2021). Time and convenience are also key factors: consumers often need functioning products quickly (e.g. smartphones or appliances), but repair services may be slower, less accessible, or harder to navigate (Jaeger-Erben *et al.*, 2021; Laitala *et al.*, 2021; Russell *et al.*, 2023). Additional challenges include product design that hinders repair, limited availability or high cost of spare parts, and uncertainties around service quality or final costs (Cooper & Salvia, 2018; Makov & Fitzpatrick, 2021; Riisgaard *et al.*, 2016; Sabbaghi *et al.*, 2017).

From the perspective of this research, which investigates how alliances can contribute to upscaling repair skills in Flanders, these barriers are mostly rooted in or exacerbated by gaps in technical capacity and consumers and workforce readiness. A lack of trained repair professionals, fragmented training systems, and underdeveloped support structures for skill development further constrain the sector's ability to meet demand. Understanding these barriers helps clarify why multi-actor alliances bringing together companies, public institutions, community organisations, and training provider, are increasingly seen as necessary to overcome skill-related bottlenecks and support the broader repair ecosystem.

Generally, the extent to which repair is carried out often depends on a variety of interconnected variables, including technical, emotional, economic and social aspects, as well as broader, contextual conditions such as legislation, policy, infrastructure and social dimensions. The report by ETC EC (2022) distinguishes between systemic, technical, economic and social barriers to repair. The authors created an overview encompassing the various barriers identified in the literature (see Figure 2.3).

Key types of barriers to repair			
Systemic/legal	**Technical**	**Economic**	**Social and behavioral**
• Lack of overarching legal requirements at the EU level • Shortcomings in consumer laws (warranty and guarantee conditions) • Lack of criteria to prioritize repair in waste frameworks • Intellectual property rights • Lack of avaialbilty of or access to repair	• Complex or non-modular design of products makes it difficult or impossible to repair • Lack of standard technical specifications • Type of materials used • Lack of or limited access to spare parts • Decreasing number of experts with technical knowledge and skills • Short innovation cycles • Limited access to repair information, hardware or tools • Difficulty in providing repair services to a large range of products and brands	• High costs of repair compared with the cost of purchasing new products • Higher costs of tailor-made repair services compared with mass production • Limited profitabilty of repair businesses and low wages • High price of spare parts	• Lack of knowledge among consumers about repair services and their rights • Decreasing demand for repair services • Low customer expectations of durabiltiy and repairability of products • Lack of trust about the quality of or gurantee of repair services • Lack of interest in gaining professional or occupational skills on repair • Lack of time to search for repair services

Source: ETC EC, 2022

Figure 2.3 - Overview of barriers to repair

While knowledge and skills are covered by the ETC EC framework, the skills and creativity that repair work requires is still often overlooked (Corwin, 2023). A body of evidence consistently finds that not having the skills is amongst the primary reasons consumers do not carry out repairs (Laitala *et al.*, 2021; Lefebvre, 2019). For example, Rogers *et al.* (2021) discovered that, following cost, a lack of skills ranked as the second most significant barrier to participating in the repair economy. Gwilt (2014, 2021) and Diddi and Yan (2019) also mention this as a barrier to repair clothing. Moreover, a lack of skills was identified as a major barrier for the DIY repair of small household Electrical and Electronic Equipment (EEE) (Bovea *et al.*, 2017; Perez-Belis *et al.*, 2017), and mobile phones (Sabbaghi & Behdad, 2018; Türkeli *et al.*, 2019). A lack of repair knowledge can also present a barrier to seeking professional repair, as people are not only uncertain about the possibility of repair, but also often unable to discern the quality of the repair work immediately (McCollough, 2010 in Cooper & Salvia, 2018). Fostering training and education for repair could thus have a great impact on increasing repair, confirming the need for policy measures to not only try to foster a general 'Right to Repair' but also the capability to repair (Jaeger-Erben *et al.*, 2021).

Cooper & Salvia (2018) point to the offshoring of manufacturing as a significant factor contributing to the decline in manual skills, which in the past could be transferred to a domestic setting. Moreover, education has increasingly emphasised skills for the 'knowledge economy' rather than manual and craft capabilities (Niskanen & McLaren, 2023), while the reduction in design and technology education make young people less confident about their ability to repair goods (Cooper & Salvia, 2018). Additionally, repair work, despite requiring skilled manual labour, remains undervalued, as reflected in the generally low wages offered for repair work (Niskanen & McLaren, 2023). Furthermore, many products are so poorly designed that repairing them is not worthwhile or so complex that repairing them is more challenging. For instance, in the electronics industry, products have become increasingly sophisticated and miniaturised, often advancing quicker than users can learn how to repair them and develop the necessary skills. Meanwhile this happens in a society where replacing broken products with new items has in many cases become cheaper, as repairs are more labour-intensive and costly, while new products often benefit from automated production processes. This dynamic discourages repair and promotes the consumption of new products, creating few economic incentives for producers to incorporate repair services into their business models (Niskanen & McLaren, 2023).

The extent to which repair services, whether operating in the formal economy, the social economy, or citizen-led initiatives, are constrained in the repair models they can offer due to a lack of skills appears to be underexplored in the existing literature. While the shortage of repair skills among consumers has been recognised, there has been little research into practical solutions for scaling up these skills and facilitating the transfer and flow of skills between sectors. Gaining a clearer understanding of what policy measures are needed to strengthen repair skills across Flemish society is therefore highly relevant for advancing our future circular economy.

In this report, we mostly address two key barriers linked to the lack of skills in the repair sector:

1. The declining availability of repair skills and training opportunities, which limits both consumer and professional engagement in repair practices and
2. The undervaluation of repair work and institutional support for skills development, which hinders the formation of viable career paths in the repair economy.

We explore how repair alliances(i.e.; collaborations among diverse stakeholders) can play a role in addressing these skill-related challenges. By pooling resources, offering shared training platforms, and advocating for systemic change, alliances can help foster the capabilities needed to expand repair activities and shift norms around value, maintenance, and sustainability.

2.5 Collaboration to bridge the skills gap

Cross-sector and multi-stakeholder collaborations are increasingly recognised as drivers of sustainability transitions (Ba *et al.*, 2024). These partnerships can play a role in addressing complex social and ecological challenges by bringing together diverse perspectives and resources. Recent research by Van Opstal *et al.* (2024) shows that informal circular economy activities, such as unregistered repair, reuse, and resale, remain highly prevalent even in industrialised regions, highlighting the importance of recognising the role and value of these actors and the potential for collaboration amongst and with informal actors. Cross-sector collaborations operate on the principle that each partner brings a diverse set of resources and expertise, which can complement one another in developing and implementing innovative solutions to sustainability challenges (Holmes & Smart, 2009).

The transition to a CE is particularly complex, as it involves a shift from traditional buying and selling models to more intricate processes and logistics. New and forthcoming legislation is prompting companies to rethink their operations and strategies. While larger companies often have the resources to address these changes, smaller organisations may face significant challenges in adapting to the new requirements.

Through these partnerships, actors can achieve a 'collaborative advantage', allowing them to accomplish more together than they could have separately (Vangen & Huxham, 2009). Examples of such collaborative advantages include driving innovation through knowledge and skills sharing and cross-pollination of ideas, improved operational efficiency, risk-sharing, fostering greater stakeholder representation and inclusivity, and improving responsiveness to complex governance challenges (Ba *et al.*, 2024; Harman *et al.*, 2015).

Multisector partnerships have increased dramatically over the last several decades (Gray & Purdy, 2018). Interorganisational learning or knowledge transfer is often a primary motivation for establishing collaborations (Huxham & Hibbert, 2004). In the context of circular innovation, collaboration is viewed as a critical factor for success. Collaborative circular-oriented innovation is believed to be a driving force for achieving the radical changes required to meet circular economy (CE) targets, while also generating jobs, economic value and social benefits (Brown *et al.*, 2019, 2021).

Engaging in cross-sector or multi-stakeholder partnerships typically involves the sharing of capacities. Rooted in the resource-based view of collaborations, capacity includes the specific skills, resources, and functions that actors bring to the table. By pooling complementary resources such as financial, human, and social capital, these partnerships can achieve greater impact (Ba *et al.*, 2024; Clarke & MacDonald, 2019). Typical capacities include organisational competencies, programme development, community engagement, and transformative capacity, all of which could play an important role in the success of collaborative efforts (Ba *et al.*, 2024). As Van Opstal *et al.* (2024) point out, informal repairers and upcyclers often possess valuable practical knowledge and community connections that are not always present in formal organisations. Tapping into this expertise through trust-based partnerships can help broaden skill pools and enhance local circular solutions.

In alignment with this perspective, Jaeger-Erben *et al.* (2021) propose forming repair alliances among various sectors and stakeholders as a strategy to strengthen repair competences. Such alliances could enhance access to repair tools and knowledge through collaboration. A typical example of this in the informal economy is the role repair cafés can play in helping people develop new or reviving forgotten repair skills. Skill-sharing events, where people exchange, access, or transfer knowledge, contribute to the revival of these 'forgotten' technical skills and empower people to repair. Hielscher and Jaeger-Erben (2021) emphasise that this collaborative process of repair is as important as fixing the object, as it can increase people's appreciation of it. However, while repair cafés support the building of momentum, they often attract an already *'converted'* crowd, such as critical consumers (Moalem & Mosgaard, 2021 in Korsunova *et al.*, 2023).

Laitala *et al.* (2021) highlight the potential of integrating private and commercial efforts in circular solutions. Consumers, they argue, can play an active role in emerging circular business models by taking part in the acquisition, use, and disposal of products, thus helping bridge the gap between business and individual participation in the circular economy.

Additionally, in order to meet current and future skills needs, Cedefop (2023) highlights the need for making better use of skills available while also creating and sustaining links with local skills ecosystems. Vocational Education and Training (VET) could play a significant role in closing the skills gap. According to Cedefop (2023), collaboration among stakeholders within the skills ecosystem is essential to design vocational education and training (VET) programmes that equip learners and workers with the skills needed to advance the circular economy. This also requires stepping up R&D cooperation with higher education and participation in partnerships to strengthen skills.

The literature highlights the potential of collaboration as a means to address challenges related to repair skills. While there is recognition that partnerships between diverse actors, such as businesses, public institutions, community groups, and educational providers, can help fill gaps in repair capacity, this area remains relatively underexplored, especially in terms of how such alliances contribute specifically to skill development and transfer.

This report investigates a range of repair alliances active in Flanders, spanning sectors such as textiles and electrical and electronic appliances (EEA). These alliances involve varied stakeholders, from social enterprises and formal businesses to schools, hobby repairers, training centres, and local authorities. Rather than examining the internal structure, governance, or how the alliances operate, the focus in this report is on how alliances can play a role in upscaling repair skills: through training, knowledge exchange, or more indirect forms of support. In this context, further attention is needed on the often hidden contributions of informal repair activities and explore ways alliances can better connect formal and informal actors to amplify skill development and circular outcomes (Van Opstal *et al.*, 2024).

Across the cases studied, alliances engage with a broad set of interventions related to skills: from connecting educational institutions with repair cafés, to enabling intergenerational and peer-to-peer knowledge transfer, to developing systems for diagnosis and maintenance training. Some alliances work to bridge the technical skills gap by linking the social economy with formal industry, while others seek to tap into existing repair expertise. For instance, by involving hobby repairers or recently arrived newcomers with relevant manual skills. Specific initiatives target language barriers, or attempt to engage consumers more directly in repair activities through formats like corporate repair cafés. In parallel, some partnerships address mindset and cultural barriers, promoting repair as a valued practice and offering practical solutions to time constraints: a common obstacle to both consumers and providers.

By analysing these cases, the report seeks to understand how alliances can act as catalysts for the development, diffusion, and institutionalisation of repair skills within a broader circular economy transition.

3. Methodology

3.1 Study scope and objectives

This research investigates how alliances involving diverse actors (e.g. businesses, social enterprises, educational institutions, and community organisation) can serve as levers for upscaling repair skills in the transition toward a circular economy. Rather than analysing alliances as governance structures or organisational models, the study focuses specifically on how these collaborations contribute to the development, mobilisation, and transfer of repair-related skills.

Geographically, the study is focused on Flanders (Belgium), selected for its dense urban and industrial fabric, which facilitates close coordination between repair actors. In addition, we include repair alliances in Brussels and the Netherlands as being relevant to what can be learnt from alliances and applied to the Flemish context.

Thematically, the research examines two sectors where repair plays distinct but complementary roles:

- Textiles, where repair is primarily used as a strategy to extend the useful life of clothing and household fabrics, helping to reduce waste and resource consumption by keeping items in use for longer.
- Electrical and Electronic Appliances (EEA), which encompasses not only the repair of appliances for end-users (e.g. fixing faulty devices to avoid premature disposal) but also the refurbishment and upgrading of appliances for resale, contributing to a more circular flow of valuable materials and components.

Studying these different types of goods, each with distinct logistical processes involved in their repair, helps to identify practical differences and similarities. This comparison enables the research to draw broader conclusions about how repair models can be replicated or adapted for a wider range of products, informing more general strategies for scaling repair within a circular economy.

Within the EEA sector, the study focuses primarily on large household appliances, rather than small electronic devices. This choice reflects operational considerations shared by social economy actors involved in the sector. While reuse rates for small appliances have increased from approximately 30% to 40% in recent years, further gains are constrained by product diversity, complexity, and limited standardisation. In contrast, large appliances are received in higher volumes and allow for greater process efficiency due to their relative uniformity and the potential for streamlined testing and refurbishment. Sector stakeholders indicate that, even under optimal conditions, efficiency is unlikely to exceed 45%, and further diversification would risk reducing it. The study therefore concentrates on segments where alliances are most active and where the scaling of repair and refurbishment skills is already being operationalised in Flanders.Research design.

3.1.1 Approach and analytical framework

This study adopts a grounded theory approach to inductively build insights from empirical data. Grounded theory is a qualitative research approach that develops theories inductively from empirical data, rather than starting with predefined hypotheses. It is particularly well suited to exploring emerging or complex topics, as it allows analytical categories to emerge through iterative engagement with the field. This approach was originally developed by Glaser and Strauss (1967) and has since evolved through various methodological refinements (Charmaz, 2014). It is widely used in social science research to explore processes, relationships, and practices that are not yet well theorised.

Given that the role of alliances in upscaling repair skills is a relatively underexplored topic, grounded theory was chosen for its suitability in areas where conceptual categories are still emerging. Rather than beginning with fixed hypotheses, the research was designed to allow both the research questions and analytical categories to evolve through engagement with the field.

This builds directly on the conceptual framework outlined in the previous chapter, which highlights repair not just as a technical skill but as a systemic, social and knowledge-based practice. This framework does not just look at skills in isolation but treats these dimensions as interlinked steps that shape the repair ecosystem including how different types of knowledge are generated, shared, and put into practice.

The approach enabled the team to refine its inquiry around how alliances may contribute to developing repair capabilities across four dimensions:

- Mindset shift: fostering public awareness and acceptance of repair as a viable and valued practice.
- Hard skills development: delivering technical training for high-quality repair and refurbishment.
- Soft skills: strengthening collaboration, communication, and customer interaction.
- Operational efficiency: improving workflows, tools, and processes not only through structured training or digital solutions but also by enabling task specialisation and modular repair activities. It often integrates the role of the informal repair economy to leverage existing skills, networks and practices to expand capacity, reach and skill transfer.

The four dimensions above reflect how different functional aspects from technical training to mindset and operational structures interrelate to strengthen the wider repair ecosystem.

By linking these dimensions to broader functions such as knowledge creation, skill flow between sectors, and operational support, the study connects practical training needs to the wider transformation capacity required for a resilient repair ecosystem.

The research was conducted over approximately 15 months and combined desk research, fieldwork (including field observations and 26 interviews), and iterative validation through stakeholder, public and peer engagement.

3.1.2 Research steps and data collection

1. Literature review and desk research

The study began with an extensive review of academic and grey literature to map the landscape of repair practices, skill barriers, and the role of collaborative arrangements. This phase helped refine the conceptual framing and identify knowledge gaps, especially around the role of alliances as enablers of skill development.

2. Exploratory interviews (8)

To complement desk research, semi-structured interviews were conducted with eight stakeholders active in the Flemish repair ecosystem. Interviewees represented a range of organisations, including Repair&Share, Maakbaar Leuven, Herw!n, iFixit, Rreuse, and Qrios. These interviews helped clarify recent developments, test emerging assumptions, discuss policy recommendations and guide the selection of case studies.

3. Mirror group (2 sessions)

A mirror group of practitioners and experts was convened to support reflection and validation throughout the research process. The first meeting (May 16, 2024) was used to test the study's scope, share early insights, and refine the case selection. A second meeting a year later (May 26, 2025) reviewed a near-final draft of the report and provided final feedback. Between meetings, members received a written progress update for further input.

4. Case study selection and in-depth interviews (9 cases/18 interviews)

Based on the exploratory phase, nine repair alliances were selected for in-depth case study development. These alliances reflected diverse configurations linking, for example, formal businesses with the social economy, education providers with community repair initiatives, or citizen-led efforts with corporate actors. In total 18 interview were conducted. In some cases, site visits were conducted to complement interview data with direct observation. Case studies were documented, shared with interviewees, and revised to reflect their feedback and ensure accuracy.

5. Synthesis and thematic analysis

Findings from the case studies were synthesised through thematic analysis, focusing on recurring patterns across different types of alliances. Themes included knowledge transfer, skill formalisation, training pathways, language barriers, and trade-offs between social inclusion and operational efficiency.

6. Dissemination and peer feedback

To further validate and disseminate the research, preliminary findings were presented at a public event hosted by HIVA's Climate & Sustainability research group in June 2024. The event, 'Pull Up Your Sleeves: Who Repairs in the Circular Economy?', was attended by approximately 50 stakeholders. A panel discussion followed the presentation, featuring Stein

Janssen (Vlaanderen Circulair), Jan Larosse (Maakbaar Leuven), and Frank Dingemans (Kringwinkel Antwerpen), who reflected on the results and their relevance for practice and policy.

3.2 Limitations

The study focuses on two specific sectors: textiles and electrical and electronic appliance, and is limited to the Flemish context. While textile repair (e.g. United Repair Centre) offers clear consumer-facing models, the EEA sector, especially large appliances, presents different logistical and technical challenges. The relatively short reuse chain in Flanders, due to its compact geography and well-developed infrastructure, facilitates alliance formation in ways that may not directly apply in other regions in Europe.

Moreover, some of the identified cases derive their success from the inherent characteristics of the products being repaired such as standardisation, predictable defect patterns, or ease of disassembly, which may not be transferable to other product categories or contexts. As such, not all models studied in this report can be easily replicated or scaled without adaptation.

Finally, the research is based on a qualitative, case study design, which enables in-depth insights into specific practices but does not allow for generalisable conclusions across the repair economy as a whole. The findings should thus be interpreted as analytical rather than statistical generalisations, offering grounded perspectives on what alliances can make possible under specific conditions.

4. Case studies

This section explores 9 case studies of repair alliances between various actors and sectors.

A repair alliance, as defined in this study, refers to a collaboration among diverse actors including formal companies, public institutions, governmental agencies, social enterprises, informal networks, and community organisations. These actors work together toward shared objectives related to repair. The development of repair skills is a central component in each of these alliances. The cases focus primarily on textile or large household appliance (‘white goods’) sectors. Each case study illustrates different strategies for addressing the skills gap in the repair ecosystem. The alliances vary in structure and purpose: some aim to tap into underused repair capacity (e.g. through collaborations with the social or informal economy), while others focus on cultivating new skills and attitudes among citizens or future professionals. While most of these initiatives are based in Flanders, the selection also includes relevant examples from The Netherlands and Wallonia to better understand transferable practices and innovations.

The case studies highlight a range of ways in which alliances are currently engaging with the development of repair skills. Some initiatives involve partnerships between businesses and the social economy (e.g. Decathlon and CiLab, or Vites and VandenBorre) with the aim of connecting individuals with repair experience to structured work opportunities. Others link formal organisations with informal repair actors, as in the case of Vaude and Maakbar Leuven, where experienced volunteers collaborate with more institutional partners. Education–community initiatives such as Herstel Heroes, which connects schools with local repair cafés, focus on introducing basic repair knowledge and attitudes at an early stage.

Initiatives like the United Repair Centre and Horizon Centre (Les Petits Riens) combine commercial repair services with certified training programmes, aiming to build technical skills and create employment pathways. In the electronics and appliance sectors, collaboration such as BRefurbish offer hands-on refurbishment and repair activities that may support upskilling. Meanwhile, organisations like Kringwinkel Antwerpen, VITES and Hobby Repairers embed repair functions into broader reuse operations, working with a mix of professional, trainees and supported volunteers.

These examples, summarised in Table 5.1, reflect a variety of strategies being tested across different sectors and actor types. While the long-term outcomes of these alliances are not yet fully known, they offer useful insight into the diverse entry points for developing and scaling repair skills. The purpose of discussing these case studies is to investigate how the enhancement repair skills can be addressed in different manners through the alliances, and what the strengths and challenges are that these initiatives face. These objectives may include promoting a repair mindset, building technical skills, improving efficiency, or expanding access to repair services.

By examining these factors, we aim to gain insights into how repair skills can be improved and scaled up effectively.

4.1 Herstel Hub Textiel: activating and preserving talent

The Herstel Hub Textiel in Leuven is a Soft Skills First alliance founded by MAAKbar, working with partners like Vaude Leuven (for drop-off and collection), Ligo (adult literacy and language practice), and Qrios (certified textile repair training). It offers professional textile repairs for the local community to extend the life of clothing, while creating a supportive space for people with diverse backgrounds and barriers to employment to build repair skills, practice Dutch, and grow their social network. By combining technical training, workplace experience, and strong community ties, it fits within the Soft Skills and Mindset Shift pathways, aiming to normalise repair and foster social inclusion.

4.1.1 Context and scope

The initiative was founded by MAAKbar and is centred around three principles: sustainability, social inclusion and local integration. Different stakeholders are engaged in the Herstel Hub Textiel, such as the outdoor sports store Vaude and Ligo, a centre dedicated to enhancing adult literacy through basic education. In addition, the adult training centre Qrios provides specialised repair training, enabling the participants to earn a recognised qualification. The hub brings together people with diverse backgrounds and life experiences, which have led to them experiencing difficulties accessing the labour market. The hub offers them a place to get back to work, discover and develop their repair skills, practice the Dutch language and to expand their social network. The aim of this alliance is to complete 3,000 repairs annually.

The Herstel Hub Textiel provides repair services for anyone with damaged textile products. Customers wishing to have their textiles repaired can drop them off at the Vaude store situated in the centre of Leuven. On a weekly basis, these items are collected by a cargo bike and transported to the repair hub. Volunteers come together once a week to mend the items, which are then returned to the Vaude store for collection by their owners.

The hub was founded by MAAKbar. MAAKbar is an established meeting space in Leuven which is dedicated to promoting the principles of the CE since 2019. It organises events and opportunities for sharing, repairing, and exchanging a variety of products, including textiles, electronics, and tools. Their aim is to inspire people to live more sustainably through these various initiatives and activities. These are mainly aimed at less privileged groups who may not have access to regular offerings. With the foundation of the Herstel Hub, MAAKbar transitioned from being a merely Do-It-Yourself (DIY) and Do-It-Together (DIT) organisation to also offering professional repair services. The organisation was inspired by the United Repair Centre in Amsterdam. The King Baudouin Foundation offered financial support in order to test a similar model in Leuven over the course of one year.

4.1.2 Preserving and activating talent

'Circularity is not only about preserving and activating materials and energy, it is also about preserving and activating talent,' explains the coordinator of the hub. In her opinion, addressing a repair skills gap is largely about tapping into existing potential and creating an attractive place for those people. *'There are plenty of people with textile repair skills, but you just need to put some effort finding them. We try to create a context in which people can flourish.'*

The volunteers at the hub come from diverse backgrounds and life experiences: some are newcomers to Belgium, others have been in the country for a while but lacked opportunities for integration, and some are Belgian citizens who have faced challenges in the regular labour market. Many of them have a migration background and do not (yet) master the Dutch language. All of them had some affinity with textiles and possessed repair skills before joining the hub, with some even having worked in the textile industry abroad.

Currently, the hub has six repairers who work half a day to a full day per week. Only one of the repairers is paid, while the others are volunteers who receive government benefits due to their diverse life challenges. There is a volunteer reimbursement of €1 per hour available (on top of their benefits) for OCMW Leuven clients. The coordinator says: *'While it's great that they receive this additional reimbursement, it's clear that they don't come to the hub for the financial incentive. Their primary motivation lies in the social environment.'*

The hub is part of the 'Taalvloeren' programme, which aims to improve the language skills of newcomers. The idea is to extend language learning beyond the classroom, offering newcomers the chance to practice their language skills in a practical workplace setting. They volunteer at an organisation, which in this case is the repair hub, where they can engage in Dutch conversations, familiarise themselves with a new work environment, and discover their talents and interests. This does not only boost their confidence in Dutch, it also allows them to gain work experience and build social contacts. Taalvloeren was initiated by OCMW Leuven and financially supported by the municipality Leuven.

MAAKbar collaborates with local partners to make textile repair more accessible for everyone, building upon an already well-established network:

- Improving skills: Qrios is a local training centre for adults offering a wide variety of courses. They developed a weekly course on textile repair in collaboration with MAAKbar to match their skill needs. The repairers follow this course to further enhance their repair skills, allowing them to make repairs more professional and efficient. The repairers also receive a certificate upon completion.
- Sourcing talent: Ligo often encounters individuals with strong repair skills and helps to channel skilled talent to the hub. Ligo is the centre for basic education. It supports adults with basic literacy needs in Belgium through various tailored courses. The organisation aims to enhance their communicative, numerical, and digital skills, thereby increasing their opportunities in society. Ligo comes across a large variety of newcomers to Belgium, some of which have good textile repair skills. MAAKbar and Ligo collaborate under the umbrella of the 'Taalvloeren' programme. Ligo, which offers language classes for newcomers, also provides a language teacher who joins the volunteers at their weekly meetings in the hub, helping to bridge the language skills gap.
- Logistics: Vaude Leuven offers their shop as a drop-off and pickup point for people who seek textile repairs (any brand). Customers who have products from Vaude that are no longer under warranty, are also offered this service.

4.1.3 Strengths

MAAKbar is a rather small and agile organisation. They receive a structural subsidy from the city, providing them with the freedom to experiment and cultivate an entrepreneurial mindset. This financial support allows them to explore various initiatives without the immediate pressure of achieving success, giving them the time and flexibility needed to develop a sustainable business model. This approach has also allowed them to build connections with a wide range of organisations to create a more holistic initiative in fostering repair skills.

Moreover, their well-established network partly built through their previous experience in organising repair cafes and courses, enabled them to set up the hub in a relatively short time. These strong local connections made it easier to kickstart the project in collaboration with various partners when the financial opportunity from the King Baudouin Foundation became available.

The volunteers gain more than just a small additional fee on top of their allowance; they also benefit from opportunities for language learning and building social networks. It provides individuals with the human capital to use this initiative as a springboard to new opportunities. The intention is that each person charts their own course with the knowledge and network they acquire.

MAAKbar Leuven dedicates significant effort to creating a welcoming environment that encourages return visits of the volunteers. They consider specific needs of their volunteers (childcare, physical requirements, etc.) and are flexible with regards to expectations and operating hours. To date, the initiative has mostly attracted women, which is seen as a benefit by the coordinator, since this has created an appealing and safe environment for many female participants to work in and thrive.

The hub established several win-win partnerships.

- Vaude: the repair service attracts additional foot traffic to the Vaude shop. Moreover, the hub allows Vaude to offer repair services with significantly shorter waiting times (two weeks instead of six weeks). Previously, all products were sent to Germany for repairs, but now the products which are no longer under warranty are repaired locally at the hub. This localised repair process not only reduces waiting times but also delivers substantial environmental benefits by eliminating transport-related emissions.
- Ligo: the hub serves as a valuable addition to classroom learning. It is a place where volunteers and workers can practice a language, integrate into society, and build social networks, all contributing to the mission of the organisation Ligo.

4.1.4 Challenges

Replicating this model in other locations across Flanders could be challenging and time-consuming. It operates on a highly decentralised basis, relying on long-term relationships with various stakeholders, which complicates the creation of a blueprint for different local settings. Success in this type of repair model depends heavily on soft skills, such as collaboration and networking.

Further professionalisation is difficult due to the significant bureaucratic hurdles involved in transitioning to a social enterprise, which could help the hub to establish a more viable and sustainable business model. Obtaining legal status as a social economy entity involves numerous additional requirements, which can be time-consuming and demand substantial bureaucratic expertise and effort.

The Herstel Hub wants to avoid competing with existing local textile repair businesses, while also addressing the ongoing challenge of securing a sufficient supply of textiles for their repair services. To this end, they need to seek new clients for their services, potentially through B2B partnerships, which also requires collaboration and networking skills.

Finally, balancing the human-centric approach of the Herstel Hub with handling enough volumes of textiles remains a challenge. This challenge is inherent to the social economy.

4.2 Decathlon & CiLab: addressing the repair skills gap

4.2.1 Context and scope

In recent years, the sports retailer Decathlon has been actively transitioning toward more circular business models by focusing on strategies such as repair, rental, reuse, and recycling. The company aims to phase out less durable products, enhance the eco-design of its offerings, and expand the availability of circular services. By 2026, Decathlon Belgium aims to generate 5% of its revenue from the CE, up from 3.21% in 2023.[6]

Following their bike and fitness machine repair service, Decathlon launched its own textile repair service in Belgium in 2022. The textile repairs are carried out at Decathlon's central repair warehouse in Willebroek. During 2024, more than 2,000 repairs have been processed at the textile unit in Belgium. Consumers can bring any kind of textiles, including non-Decathlon items, to any Decathlon store in Belgium and pick it up a week after.

Decathlon collaborates with the startup CiLab (Circular Innovation Lab), based in Mechelen, to systematically address the repair skills gap in setting up their textile repair service. CiLab is specialised in repairing and upcycling clothing. It aims to transform the textile industry with processes that lead to upcycling, repairing and recycling. One of its goals is to assist companies in adopting more circular practices. CiLab operates on a hybrid business model, balancing its efforts between the commercial sector and projects with a strong social purpose, as a not-for-profit organisation. Its diverse team brings together textile craftsmanship from various parts of the world.

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[6] https://www.decathlon.be/nl/re-sports-deal_lp-DV3PB3

4.2.2 Collaborative advantage

In the collaboration between Decathlon and CiLab, both organisations bring unique strengths to the table. Decathlon provides CiLab with a stable source of work and income. Additionally, Decathlon offers extensive expertise in automating processes and improving efficiency, thanks to its large-scale operations. On the other hand, CiLab brings technical expertise in textile repairs, in-depth knowledge of circular business models for textile companies, and experience in training others to develop repair skills. Furthermore, Decathlon's specialised units in various cities further enhance this partnership (e.g. the unit in the Alps focuses on mountain sports equipment, while the Bretagne unit is specialised in water sports equipment). These units provide valuable expertise in their fields and offer specialised training programmes that CiLab can use to strengthen its skills.

Bohdan Lamon, commercial director of the mountain sports department at Decathlon, explains why this collaboration is valuable for Decathlon: *'Repairing textiles and footwear presents a great challenge in finding suitable people, because it requires specific skills, craftsmanship and expertise. Textile repairs are less standardised and demand more input and creativity from the repairers compared to, for example, fitness equipment.'*

According to the founder of CiLab, the willingness of companies to share knowledge is a factor in the success of any collaboration. *'Although companies may initially be hesitant,'* He explains, *'I firmly believe that knowledge sharing ultimately benefits all stakeholders involved.'* He adds that viewing partnerships as collaborations between motivated individuals, rather than merely between companies or organisations, can further enhance cooperation. This human-centric approach, he argues, strengthens relationships and improves the overall effectiveness of collaboration.

The employees of CiLab are regularly present at Decathlon's warehouse in Willebroek to work on repairs. CiLab currently employs three people, along with one work experience participant from OCMW (referred to as 'Artikel 60'). All of CiLab's employees are refugees. The founder elaborates: *'This is not necessarily the company's main intention, but within this group, there are just many valuable skills. While CiLab has a strong social focus, our goal is to be a "regular business". We are not a NGO that works with volunteers, or operate as a WISE (work integration social enterprise) subsidised by the government. We want to show that regular businesses can contribute to a social and circular economy, while also generating profit. This makes the project even more ambitious.'*

4.2.3 Developing in-house skills

CiLab does not only handle the repairs, the start-up also trains Decathlon employees to become repair specialists, helping Decathlon to gain in-house repair skills. CiLab is already training employees on the shop floor, which is progressing well. *'A key advantage is that Decathlon employees have a deep familiarity with the products, which helps the repair process,'* he says.

To streamline this process in the future, CiLab and Decathlon are currently documenting work processes, coding tasks, and standardising procedures in multiple languages. A key advantage of collaborating with a large company like Decathlon is their extensive experience in this areas, which supports the scaling and automation of these efforts. *'This is a valuable learning experience for CiLab as well,'* the founder adds. *'This knowledge and experience gained in automation and standardisation could be useful for future collaborations.'*

This collaboration enables Decathlon to experiment with and refine its approach to repair services without the immediate obligation to commit to a full-time, indefinite contract. Ultimately, the goal of the partnership is for CiLab to become redundant, allowing Decathlon to manage repairs independently. Currently, the biggest challenge is profitability: while it is not essential for the repair unit to generate a profit, it must at least break even. Increasing efficiency and volume is a critical priority at this stage. The founder explains: *'Once there is* *sufficient volume, CiLab may no longer be necessary, as Decathlon could hire someone directly for this role.'*

For CiLab, the collaboration offers an opportunity to advance their mission of making the textile industry more circular, while also gaining valuable experience and insights. These insights could prove instrumental in future collaborations with other companies, further supporting their mission and expanding their impact.

4.2.4 Collecting data and improving feedback processes

CiLab and Decathlon are also collaborating to improve product designs by leveraging repair knowledge. Aggregated data from repair services can provide a valuable foundation for better product design and support improvement in product development. Enhancing traceability is critical to refining feedback processes from repair to design. By embedding 'item codes' into product (e.g. via small and washable chips) each product can be traced back to its design phase. This enables detailed analysis of design choices and the identification of frequently failing components, facilitating quick adjustments to improve product durability. The founder explains: *'For example, we found that 50% of repairs are related to zippers, highlighting the need for design improvements in this area.'*

Currently, CiLab's process is not yet automated. Repairs are logged manually in a spreadsheet, documenting what was repaired and in what quantity. The next step involves integrating this data into Decathlon's internal systems. Eventually, the goal is full automation. While the current system relies on direct communication with the design department, often requiring a phone call from the repair department, the aim is to streamline this feedback loop through automation for greater efficiency.

4.2.5 Circularity training

In addition to training specific employees in technical textile repair skills, Decathlon provides various training programmes related to climate and sustainability for all staff. While not every employee is expected to carry out repairs, these trainings equip them to understand circular options, effectively inform customers, and contribute to making the service more efficient. Climate training, which is mandatory for all employees, focuses on raising awareness about the environmental impact of products and promoting sustainable alternatives.

Furthermore, a selected group of shop personnel receives specialised training on repair options and handling repair-related inquiries. Part of this training involves learning how to assess damaged items brought into the store. By accurately identifying the issue and documenting it for the repair department at the central warehouse (e.g. attaching a photo of the defect), staff can significantly reduce repair costs. If this step is not done correctly, the repair department may waste valuable time locating the problem, and in some cases, they may even need to contact the customer directly for clarification.

4.2.6 Strengths

The collaboration between Decathlon and CiLab is a win-win partnership. Decathlon ensures a stable flow of work and income for CiLab, helping the organisation achieve economic viability while supporting its non-profit activities. In return, CiLab addresses Decathlon's skills gap by providing skilled repair personnel and facilitating in-house skill transfer. Additionally, CiLab gains valuable insights from Decathlon's expertise in process automation (e.g. data transfer from the repair to design department), which could prove beneficial in future collaborations.

The repair services align with Decathlon's goal of becoming a circular company, and effectively communicating this commitment to the public. The launch of these services has garnered significant media attention with minimal effort. By offering repair services and repair courses, Decathlon also provides customers with an additional reason to visit the store, further strengthening customer loyalty.

The new services not only focus on repairs, but also on product improvement. They aim to create an effective and efficient feedback loop from the repairers, who identify various product issues and trends in their work, to the designers.

Decathlon's sustainability trainings help to foster an understanding of the need for a sustainability transition. Additionally, store personnel are better equipped to communicate the benefits of repair options to customers and to accurately assess and document damaged items brought in for repair.

As a privately-owned company, Decathlon can more easily manoeuvre towards sustainability. Additionally, its vertical integration facilitates the implementation of changes across the value chain, while the company also benefits from economies of scale.

As an added benefit, CiLab creates employment opportunities for refugees, a group that often faces challenges in securing work, even though this is not the company's primary mission.

4.2.7 Challenges

Linear sales remain the most important revenue stream for Decathlon. The textile repair services are not yet profitable, presenting one of the most significant challenges. However, exploring how technology and automation could make textile repairs more time-efficient offers a promising path toward profitability. Standardising components, such as the numerous types of zippers Decathlon uses, is also a key consideration. Achieving this will require close collaboration between repair specialists and designers.

Handling large enough volumes remains a challenge, especially in convincing customers to opt for repairs instead of purchasing new items. The price difference between repairs and new products is a key factor in this decision. Stricter CE regulations could help address this issue (see next point). Additionally, raising customer awareness and fostering emotional attachment to products can play a significant role. This challenge partly falls on the sales and communication departments, who can leverage circular storytelling, among other strategies, to boost customer engagement. It shows that repair is not only about technical skills but also involves social skills, requiring effective interaction with customers.

As long as regulations do not strongly support circularity, offering repair services in a linear economy remains challenging (especially in textiles). Without price incentives or favourable policies, customers are often more inclined to purchase new products rather than opting for repairs. To overcome these obstacles, circular businesses must develop strong networking and lobbying capabilities. This includes building relationships with policymakers, advocating for supportive regulations, and forming alliances with other stakeholders committed to advancing the circular economy. Ultimately, stricter CE regulations can provide businesses that are already progressing toward circularity with a competitive edge over others.

When it comes to repair services, Decathlon faces a challenge related to its location strategy. Their stores are often situated outside city centres, designed to offer a large assortment of products. However, these locations may not be ideal for repair services, as customers may find it less convenient to access these stores for repairs. This highlights that the transition from a linear to a circular model brings about new considerations and implications, including accessibility and customer convenience.

Another specific challenge identified is the shortage of skilled professionals who can maintain and repair textile machines. Currently, technicians must travel for up to three hours to perform just one hour of work, which is highly costly.

4.3 Herstel Heroes: introducing repair to youth

Herstel Heroes is a Mindset-Centred alliance that connects young people aged 14–24 with local repair cafés through workshops and camps that teach them to repair and upcycle everyday items like clothes, electronics, and skateboards. Led by Hogeschool PXL with support from retired volunteers, schools, and community partners, it bridges the generational skills gap by passing on practical repair know-how and fostering pride in fixing rather than replacing. By inspiring youth and building repair habits early, it fits firmly within the Mindset Shift pathway and aims to secure the future of the repair movement.

4.3.1 Context and scope

Hogeschool PXL launched the 'Herstel Heroes' project to introduce young people to grassroots repair initiatives. The project connects youth with repair cafés and teaches them how to repair, upcycle, and reuse items instead of replacing them. Herstel Heroes focuses on products that resonate with young people, such as skateboards, smartphones, small electronics, and clothing.

Herstel Heroes aims to engage young people (age 14-24) with the repair café movement by organising repair workshops and camps. This initiative teaches young people how to repair and promotes awareness of the circular economy. By collaborating with dedicated, mostly retired repair café volunteers, the project bridges the generational repair skills gap, ensuring that valuable repair knowledge is passed on to the younger generation. So far, the project has successfully engaged 134 young people. By building skills for young prosumers, Herstel Heroes helps youth see themselves not just as consumers but as active contributors to the repair and reuse economy, with potential links to informal repair initiatives like repair cafés and community workshops.

PXL has outlined clear objectives for the project. The project's overarching goal is to extend the lifespan of products through reuse and repair, while also promoting awareness among youth of the environmental benefits of the circular economy. They plan to organise a variety of workshops and three-day vacation camps across multiple municipalities in Limburg. These events are aimed to teach repair skills, while also emphasising essential 21st-century skills such as teamwork, problem-solving, critical thinking, and technical innovation.

The project builds upon the success of 'Repair Teens,' initially tested in West Flanders by Hogeschool VIVES. With financial support from VLAIO, Herstel Heroes aims to expand its reach to 43 new municipalities. This initiative involves collaboration between PXL, Hogeschool VIVES, the City of Hasselt, and limburg.net. Herstel Heroes also seeks to engage local businesses and partners in this effort, including IKEA, a bike repair shop, a shoemaker and a furniture maker.

4.3.2 Intergenerational skills transfer & building habits

The project addresses the repair skills gap in two significant ways. Firstly, it facilitates intergenerational skills transfer. Older generations possess valuable knowledge that is gradually fading, but through collaboration between retirees in repair cafés and younger individuals, this essential knowledge can be preserved and passed on. Secondly, the project plays a role in building habits and familiarising youth with the diagnostic phase of repairs (‘interpreting brokenness’) as well as introducing them to existing repair infrastructure and support. This helps to instil the idea that repair is a practical and viable option.

The project’s coordinator believes one of the key benefits is raising awareness among youth about the existence of repair cafés. *‘Youth are often unaware that these places even exist,’* she explains. This is the first step to equipping youth with basic repair skills. Additionally, she has observed the unique value of involving repair café volunteers in this teaching process. *‘The volunteers at repair cafés may not have the same pedagogical training as most teachers, but the volunteers are very good at conveying enthusiasm because they are truly passionate about repairing,’* she says. *‘And since they are volunteers, they aren’t focused on achieving specific goals, which allows for a much more relaxed and different approach.’*

One of the key lessons, as the project manager explains, is that it is important to make the workshop accessible for all levels and focus on creating a sense of achievement. ‘Sometimes the young people initially show reluctance, but by the second workshop, they come in with a pricey jacket and proudly repair it themselves. Knowledge and skills leads to pride.’

Moreover, she notes that emphasising cost savings as a key benefit of repair has proven more effective than focusing on environmental and climate benefits. ‘It seems useful to also highlight how much one can ‘save’ by repairing. This raises awareness of the direct, personal benefits.’

While the repair café volunteers are generally effective in conveying their enthusiasm for repair, it will never be able to convince all young people. The project manager believes that this shouldn’t be the aim. She adds: *‘If someone doesn’t want to learn this, that’s okay too. It’s essential to give young people the feeling that they can and are allowed to decide for themselves what they want to learn.’*

According to the project manager, introducing young people to the environment of repair cafés can be a highly inspiring experience: *‘In the sewing workshop, there is a sense of wonder among the participants that they are allowed to use the space.’* So far, the project has primarily attracted boys, who initially show more interest in electronics repair. *‘But they soon become just as enthusiastic about textile repair. They feel proud when they create something. One participant even brought in their grandfather’s socks and sweater, and was thrilled to be able to repair them and take them home.’*

This is exactly what needs to happen, according to the project manager: reaching and inspiring the youth. *‘When they feel engaged, they keep coming back,’* says the project manager. She has noticed that quieter, more introverted youth often feel particularly at home in the repair cafés. This is especially true when effort is put into matching volunteers with young participants. The retired volunteers take the young participants under their wing. *'For one workshop with seven children we put significant effort into matchmaking. In the end, four of them keep coming back. The volunteers are like grandfather figures to them.'*

Not only the interactions between the youth and volunteers are valuable. *'The interactions among the youth are also wonderful to witness,'* she adds. *'Children from different backgrounds and disciplines connect with someone from a more theoretical background, often admiring the skills of someone with a technical background. It's a revival of appreciation for technical skills.'*

4.3.3 Strengths

Herstel Heroes introduces everyone to repair practices and skills, eliminating the need to rely on a handy (grand)parent. The intergenerational contact within Herstel Heroes, brings together retirees and young people, and thereby revives skills that are slowly being lost. Herstel Heroes provides youth with mentors, and could reduce potential loneliness among older adults. By equipping youth with practical repair skills in informal settings, the project helps normalise prosumer behaviour and strengthens the foundation for an informal repair culture.

Many repair café volunteers are retired, and their potential departure poses a threat to the continuity of these cafés. Identifying and cultivating a new generation of volunteers to take over may ensure the sustainability and longevity of the repair cafés.

Schools do not need to overhaul their entire curriculum to incorporate repair and practical knowledge and skills. Instead, forming partnerships between repair cafés and educational institutions presents significant potential, not just for technical programmes but even for theoretical programmes. Repair cafés often have access to sufficient equipment (i.e. old phones, discarded textiles, etc.) for workshops, which can be convenient. Passionate volunteers are also highly effective in conveying their enthusiasm for repair.

The project introduces young people not only to repair skills but also to the specific places and communities they can turn to when something breaks. The environment, such as a sewing workshop, can be very impactful and inspiring for them to see.

Investing effort in matching volunteers with young people has proven fruitful. Herstel Heroes has found that good relationships encourage youth to return.

The project was especially well received among youth from 'OKAN' classes (education for newcomers), offering a good opportunity for these young people to learn, integrate and connect socially. The workshops and camps have been an important pastime for young people who came to Belgium on their own. Out of the 134 youth reached by Herstel Heroes, 17 were from the OKAN group.

Emphasising cost savings as an important benefit of repair and the circular economy has proven more effective than focusing on environmental and climate benefits.

4.3.4 Challenges

Reaching and engaging youth in Herstel Heroes is challenging due to their already busy schedules. Currently, the project has been most successful in reaching youth from OKAN classes (immigrants). While collaborating with schools could help in reaching many young people, the activities of Herstel Heroes are intended to occur outside regular school hours. Attracting girls to participate has proven particularly difficult; using images of girls in promotional materials is a step forward, but additional efforts are necessary. Additionally, the project must consider the specific backgrounds and cultural practices of the youth, such as avoiding scheduling activities during significant events like Eid al-Fitr, as was mentioned by the coordinator.

Engaging companies in the Herstel Heroes project is challenging. Despite the clear benefits of technical and circular skills for these companies, they often lack the time, money, or commitment to participate. New strategies are needed to increase their involvement. This could also be very valuable for the youth to experience not only repair cafés, but also professional environments where these skills can be applied.

The project is time-intensive for volunteers. A possible solution could be a ‘teach the teacher’ approach, where teachers are trained on how to use the materials in the repair cafés. This would enable them to take on some of the instructional responsibilities, easing the burden on volunteers. While this would still allow the youth to experience the setting of the repair cafés, it would prevent the volunteers from conveying their own enthusiasm and passion.

4.4 Repair Atelier (Antwerpen Kringwinkel): repair training atelier

Repair Atelier Antwerp works with local reuse centres, public partners like OCMW Antwerpen, educational institutions like KDE, and companies like Vanden Borre and BSH. It repairs household appliances, small electronics, and bicycles for resale through Kringwinkel shops, combining practical technical tasks with soft-skills support to help trainees move closer to the labour market. This places it firmly within the Hard Skills and Soft Skills pathways, making it another example of a Hard + Soft Skills alliance.

4.4.1 Context and scope

Antwerpen Kringwinkel, part of Belgium's wider social-economy reuse network, has operated its Repair Training Atelier since 2013. The atelier aims to reconnect adults who are distant from the labour market with stable employment through practical repair training. Building on reuse activities that began in 1996, the training programme represents the Antwerp branch's first structured effort to scale repair competence internally via hands-on learning and strategic alliances with public and private partners.

Each year since 2023, a group of 10-12 trainees join the full-time, one-year programme, working directly on household appliances, bicycles, and small electronics. Trainees refurbish goods for resale in Kringwinkel stores while gradually developing repair and workplace skills. The atelier's dual mission is to process and give second life to items diverted from municipal waste streams and to prepare individuals for long-term employment, either in the social economy or, ideally, in the formal labour market.

4.4.2 Training services and methodology

The Repair Training Atelier uses a strictly hands-on, workplace-based approach. There are no classrooms. Trainees are embedded in the workshop from day one and coached in real-time by experienced technician-trainers, who themselves are not trained teachers but skilled repair professionals. Repairs are broken down into small, manageable steps, allowing even those with no technical background to make progress. Trainees rotate across tasks (e.g. diagnostics, mechanical repairs, disassembly or reassembly) based on their capacity, with trainers continuously observing and adjusting assignments to match individual strengths.

This tailored methodology allows the atelier to 'get the most out of each person.' Trainers aim to push trainees to their limits, while simultaneously nurturing their confidence and building up their strongest skills. The support is not limited to technical tasks. Soft-skills development such as punctuality, teamwork, communication, is integrated throughout, though trainers acknowledge that such personal and cultural competences often require more than one year to fully develop. Some trainees would benefit from a multi-year track, particularly those with more complex social or psychological challenges.

The programme includes a certification component that is recognised in the formal labour market, although actual transition into that market remains uneven.

4.4.3 Governance and partnerships

The atelier operates through a collaborative framework involving Kringwinkel's management, OCMW Antwerpen (which provides participant stipends under Article 60), and education partners like CVO and KDE (Karel de Grote Hogeschool) high school. KDE recently joined the initiative to offer pedagogical input and support innovation in how technical content is delivered.

Several private-sector partnerships strengthen the programme:

- Vanden Borre provides internships which offers valuable real-world exposure and generates feedback for Kringwinkel to refine its curriculum. Vanden Borre also shares higher-quality machines, which improve both training and resale value.
- BSH collaborates on an AI-enabled tool that brings appliance manuals directly to the repair stations. In return, Bosch receives anonymised repair data from Kringwinkel to improve product design and failure analysis.
- These collaborations offer significant potential, not only to improve training, but also to explore new business models, shared logistics, or spare-parts reuse. However, limited resources and a lack of expansion capacity make it difficult for Kringwinkel to deepen or expand such collaborations.

4.4.4 Strengths

The Repair Training Atelier successfully blends social inclusion with skill-building. Located inside an active reuse centre, it ensures a consistent flow of diverse items (e.g. bicycles, washing machines, smartphones, textile) providing trainees with daily, real-world repair tasks. Technician-trainers are adept at identifying each individual's talents, tailoring assignments accordingly and guiding participants through increasingly complex operations.

Internships at Vanden Borre introduce commercial repair standards, while partnerships with Bosch and KDE demonstrate a commitment to both technological and pedagogical innovation. Support from CVO helps both the trainers and trainees strengthen basic technical knowledge and workplace language.

4.4.5 Challenges

Despite growing demand, the atelier is constrained to just twelve trainees per year due to limited physical space, infrastructure (e.g. power outlets, water access), and funding. The organisation lacks the financial means to hire more trainers or invest in additional training supports and tools for the trainers – which are not certified educators but skilled technicians. The need for business development staff to build new collaborations and manage existing ones is also unmet.

Gender imbalance remains an ongoing issue. Despite efforts to diversify participation, technical repair work is still perceived as male-dominated, and cultural barriers continue to limit female engagement.

Many trainees face complex social situations (e.g. mental health difficulties, trauma, and low self-confidence) which means their progress, particularly in soft skills, faces barriers and can be more variable. Trainers report that while one year may be sufficient to teach basic repair and language skills, developing workplace readiness often takes much longer.

Labour-market integration also presents difficulties. Although companies like Vanden Borre benefit from Kringwinkel-trained workers, they are hesitant to hire them permanently due to concerns over work pace, customer-facing requirements, driving licences, or general soft skills. Some partners may also see Kringwinkel's increasing efficiency as a competitive threat. As a result, many trainees either remain in the social economy or drift toward more secure public-sector roles, rather than entering the commercial repair sector.

4.5 Horizon Centre: train market-ready repairers

Horizon Centre collaborates with Bruxelles Formation, Actiris, Mission Locale d'Ixelles, and employers like STIB, SNCB, and Miele to train unemployed adults as technicians with a strong foundation in appliance repair and general electromechanical skills.. The programme focuses on hands-on repair of large household appliances, which helps trainees develop practical technical skills while also supporting the resale of refurbished goods. The Centre blends structured hard-skills training in electromechanics with strong soft-skills development and workplace readiness, placing it in the Hard Skills and Soft Skills pathways and classifying it as a Hard + Soft Skills alliance.

4.5.1 Context and scope

The Horizon Centre, funded and operated by Les Petits Riens since 1993, is a Brussels-based work integration social enterprise training hub dedicated to reintegrating unemployed adults through a full-time, one-year electromechanics programme. Its mission is to transform learners often facing social and economic precarity, into market-ready appliance technicians, with a particular focus on repairing large-household appliances (big white goods).

4.5.2 Training services and pedagogy

There are two cohorts per year, with each cohort of up to eight students undergoing 700 hours of classroom instruction covering among other topics electromechanical theory, safety protocols, and soft-skills modules, and 1,000 hours of hands-on workshop experience in the Centre AFT (atelier formation par le travail), where trainees participate in real-world repair production. Workshops run Monday through Friday from 8:30 to 16:30.

Towards the end of the curriculum, students engage in a one-month company internship with a promise of hire upon successful completion. A multi-stage recruitment process including information sessions, online French and mathematics assessments, a physical dexterity test, motivational interviews, and a 15-day immersion via the Mission Locale d'Ixelles, ensures candidates are both technically capable and committed to the full year of training.

4.5.3 Origins and governance

The Horizon Centre operates under a partnership model. Bruxelles Formation provides pedagogical structure, certification frameworks (the CECAF qualifying diploma since 2023) and evaluation protocols. Actiris grants access to jobseekers and quality labels, while Mission Locale d'Ixelles facilitates pre-training discovery, company networking opportunities and social support. European Social Fund and COCOF subsidies, alongside a portion of Recupel compensation and revenue from in-store second-hand sales (from the repair atelier) and repair services, finance the centre's staffing (currently: 2.5 FTE trainers, 1 FTE management, and 2 volunteers) and facilities.

Local employers (i.e.; STIB, SNCB, Infrabel, Vanden Borre, Miele and smaller repair ateliers) participate in job-dating events, offer internships and host immersion visits, giving students direct exposure to diverse career paths. Despite the strong interest from electronic companies and retailers (e.g. Vanden Borre, Miele), many graduates opt for positions in public transport and infrastructure companies rather than appliance repair, drawn by the promise of stable, long-term contracts, limited client interaction and clearer promotion pathways.

4.5.4 Building market-ready repairers

The Horizon Centre's strength lies in its highly structured, production-oriented pedagogy. By embedding trainees in actual repair workflows from week one, it bridges the gap between theory and practice. Apprentices learn to dissect complex fault patterns, manage spare-parts logistics and adhere to professional worksite norms: skills that are directly transferable to both repair shops and larger technical employers. Soft-skills modules in punctuality, communication (email, SMS, CV writing), teamwork and workplace responsibility are woven throughout, ensuring graduates possess the holistic toolkit employer's demand.

4.5.5 Strengths

The Horizon Centre delivers a 1,700-hour training programme that integrates electromechanical theory with real-world repair production. Trainees apply classroom concepts in Les Petits Riens' social-economy workshop, dissecting complex fault patterns, managing spare-parts logistics, and adhering to professional safety protocols.

Beyond technical skills, the Centre provides a support framework designed to remove barriers for adults facing social and economic precarity. Each participant benefits from individualised follow-up on soft skills, covering punctuality, teamwork, and workplace communication, as well as practical life-management coaching ranging from assistance with daycare and housing to budget planning. Concurrently, trainees receive dedicated guidance on professional development, including CV writing, presentation techniques, and confidence-building exercises, ensuring they feel fully capable as they prepare to enter the labour market.

This holistic training model is sustained by a large network of partners: Bruxelles Formation supplies the pedagogical structure and certification standards; Actiris connects the programme with jobseekers and endorses its quality; and Mission Locale d'Ixelles offers pre-training discovery sessions and ongoing social support. Together, these organisations minimise administrative and social obstacles so trainees can focus on developing their skills.

Finally, by hosting regular job-dating events, maintaining an alumni network, having internships and site visits with leading employers such as STIB, SNCB, Infrabel, Vanden Borne, and Miele, the Centre ensures that its curriculum remains tightly aligned with industry needs. This direct engagement provides a robust pathway from training to acquire the necessary skills to stable employment applying those skills.

4.5.6 Challenges

The Horizon Centre's capacity is limited to eight students per cohort, with two cohorts each year. This constraint creates a gap between the number of adults seeking to join the training (there were 40+ attendees during the last cohort information session) and the needs of local employers (both small ateliers and larger technical firms) that would welcome a greater number of trainees.

Gender imbalance continues to be a concern. Despite outreach efforts, participation amongst women remains low: only three women attended the most recent information session out of forty-one prospects. During the lifetime of this initiative, women represent only 1.25% of all the cohorts since 2013. Cultural perceptions of electromechanics as a male-dominated field, unease around physically demanding tasks, and the scarcity of visible female role models in repair work all appear to influence this outcome.

Another challenge is the tendency for graduates to move into public-sector technical roles rather than in the private repair market. Positions at organisations like SNCB or STIB are believed to provide more predictable working hours, formal career progression, limited direct client interaction, and offer the benefits of stable employment. As a result, few trainees remain in appliance repair workshops, limiting the flow of newly trained technicians into the sector.

4.6 United Repair Centre: holistic repair services

United Repair Centre works with big fashion and outdoor brands like Patagonia, The North Face, and Decathlon, as well as public employment agencies and accredited education providers. It repairs clothing and outdoor textiles for direct return to customers, promoting life extension rather than replacement. By combining consumer mindset shift, certified hard and soft skills training, and efficient repair operations, it covers all four pathways: Mindset Shift, Hard Skills, Soft Skills, and Operational Efficiency, and is best described as a Holistic Model alliance.

4.6.1 Context and scope

United Repair Centre is a B Corp-certified social enterprise operating repair hubs in the Netherlands and the United Kingdom, focused on clothing repair and renewal. It is an alliance that includes brand partners, which channel repairable items directly from their customers; public employment agencies, which help identify and refer trainees and future employees; and government-certified education providers, which support the delivery and accreditation of the in-house training academy. The Centre processes over 2,000 garments annually in Amsterdam, working with clothing brands, and within a less than seven-day turnaround to nudge consumers toward repairing. Alongside its core repair operations, United Repair runs the United Repair Academy: a free, 3 to 6 month training programme for newcomers to the Netherlands, guaranteeing graduates a position on completion. Across its sites, the organisation employs roughly 25 tailors and technicians in Amsterdam (plus 11 management staff) and six in London, scaling its impact through both direct repair services and workforce development. United Repair Centre illustrates how a holistic repair service combining rapid-turnaround operations, work in Business-to-Business (B2B), data-driven feedback loops and a socially inclusive training pipeline. It can simultaneously make it a viable business model by offering repair services and create meaningful employment pathways.

4.6.2 Origins and governance

United Repair Centre operates as a social-economy enterprise offering strictly B2B services. United Repair Centre collaborates closely with fashion and outdoor brands (among them Patagonia and Scotch & Soda, The North Face, GoreTex, Decathlon and Lululemon) plus speciality labels such as Kathmandu and Cortazu. Its governance model blends impact measurement (i.e.; tracking employment created and items saved from waste) with a training-to-employment pipeline. The United Repair Academy collaborates with Anton Jurgens Fonds, Stadsdeel West (Gemeente Amsterdam) and ROC van Amsterdam to fund and certify its curriculum. Academy cohorts of 5 to 6 students receive theoretical instruction, hands-on repair practice and personal-development coaching; typically 4 graduates per cohort transition directly into United Repair roles. Currently, approximately 30 people have earned a certification.

4.6.3 Repair services and logistics

Garments arrive at United Repair through B2B partnerships with brands seeking to fulfil corporate-social-responsibility commitments and reduce return-to-landfill rates. At the Amsterdam hub, each item is logged into a data system that tracks fault frequencies and repair times. This data not only informs daily triage but also feeds back to brands for future product design improvements. Once an item is in the workshop, tailors follow a modular repair protocol covering production preparation, repair assistance and full technician modules, with theory classes taught by ROC Amsterdam and on-the-job supervision by United Repair’s practical trainers.

4.6.4 People-centred approach

United Repair’s mission is that repair skills can unlock economic opportunity for individuals distant from the labour market. The Academy, which is governmentally recognised and delivers recognised certification particularly targets recently arrived newcomers, many of whom possess tailoring experience in their countries of origin, providing them not only with technical training but also with language support, soft-skills development and a guaranteed job upon completion. This model ensures that participants gain confidence and a secure livelihood as part of a cohesive team, rather than facing the uncertainty of informal work.

Data-driven continuous improvement

Efficiency in repair at United Repair hinges on robust data collection. Every repair is logged, categorised by defect type and timed, producing a rich dataset that feeds both operational and strategic decisions. On the operational level, supervisors use these insights to balance workloads and identify skill gaps, tailoring subsequent Academy modules accordingly. Strategically, aggregated fault-frequency data informs partner brands’ product-development teams, driving design changes that reduce future failure modes: closing a feedback loop between repair and manufacture.

4.6.5 Strengths

United Repair Centre offers garment repair services with a standard seven-day turnaround from receipt to return. This predictable timeframe reduces customers’ burdens towards repair and supports both customers and brands in extending product lifecycles.

The Centre employs repair-management software to streamline customer interactions (e.g. online tracking) reducing administrative overhead for brands. Its systematic data collection on repair types and processing times provides feedback that helps companies improve product durability and reduce return or warranty costs over time. The service logs each repair, enabling partner brands to also track textile waste reduction and employment outcomes: data that can be used in sustainability and CSR reporting.

The organisation benefits from active support by well-known brands, which not only supply garments for repair but also promote the service to their customers. Because United Repair focuses on lightweight textile items, these products can be shipped economically by mail from anywhere across countries, reducing logistical complexity and costs for both brands and consumers.

Beyond its repair operations, the United Repair Academy offers a free, modular training programme in collaboration with ROC Amsterdam, blending classroom theory with hands-on practice and personal-development coaching. Graduates are guaranteed a paid position within the Centre, ensuring that the technical skills acquired translate directly into stable employment. This approach ensures a steady supply of well-trained, qualified repair technicians for the Centre's operations.

4.6.6 Challenges

Despite its achievements, United Repair must navigate several challenges. Workshop space and storage capacity are chronically constrained, making it difficult to scale beyond current volumes without significant investment in facilities. The Academy's cohort size (five to six students) limits its ability to meet both the skills demand of local employers and the aspirations of a growing number of applicants. Finally, while tailoring experience is relatively gender-balanced among new arrivals, the broader garment-repair field still struggles to attract women into technical roles: an issue that United Repair continues to address through targeted outreach and inclusive workplace practices.

4.7 Brefurbish: increasing efficiency of repair

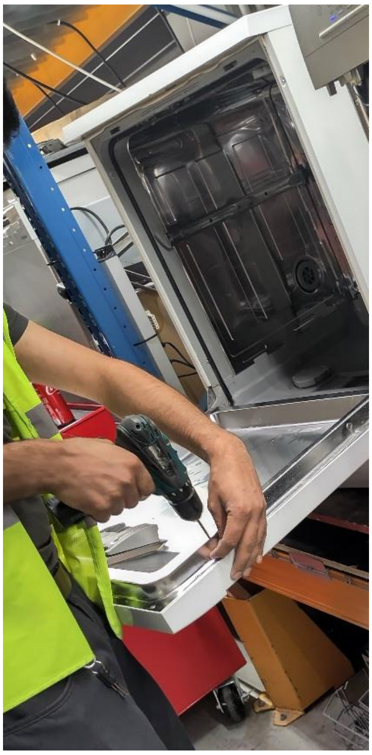
Brefurbish partners with BSH, Sirris, and social-economy organisations like VITES and ElectroSofie to repair large white goods such as dishwashers and washing machines for the reuse market, focusing on refurbishing appliances with genuine parts for safe resale. It uses digital decision-support tools to simplify repair tasks, boost speed and consistency, fitting within the Operational Efficiency pathway and representing an Efficiency-Focused alliance.

4.7.1 Context and scope

Brefurbish is a collaborative initiative (Joint R&D project funded by Innoviris, Bxl) involving BSH (Bosch and Siemens Home Appliances), with social-economy organisations such as VITES, ElectroSofie (Wallonia) and initially connected to the now-defunct Circular.Brussels and supported by a technical partner Sirris. The project focuses on the repair of dishwashers and washing machines less than ten years old, with the aim of improving repair efficiency and scalability through data-driven tools and LLM assistance. It combines reverse logistics, digital repair guidance, and social-economy workforce development.

4.7.2 Operational model and methodology

At the core of Brefurbish's strategy is a decision-support app developed in collaboration with Sirris. Optimally, the app allows repairers to scan the nameplate of each appliance and instantly receive the most likely fault types along with step-by-step repair instructions, visuals, and translated guidance materials. This app supposedly speeds up diagnostics and supports faster, more consistent repairs. The system is currently used at VITES and ElectroSofie, and is being introduced at Kringwinkel sites in Antwerp and Ghent. These Work Integration Social Enterprises utilise the tool in order to carry out repairs of appliances for the reuse market.



The tool's interface relies on decision trees, photos and repair videos, and is being improved through feedback loops with technicians from Vites and ElectroSofie. While the app is not yet fully rolled out, its introduction has already proven beneficial in reducing time spent interpreting PDF manuals and bridging language or digital literacy gaps through visual aids and large language model (LLM) support.

The project benefits from the strong operational flexibility of the social economy. Partners like VITES provide not only the repair workforce but also local logistics and workshop infrastructure, offering a level of affordability and adaptability that would be prohibitively expensive in the formal economy. This access to skilled yet cost-effective labour makes it possible to test, scale, and iterate repair activities in a way that would be difficult to achieve through commercial service networks alone.

Sirris plays a key role in fostering strategic innovation. Beyond its technical input in developing the decision-support and LLM-enhanced repair tool, Sirris contributes to broader innovation through its ability to bridge different sectors. By facilitating collaboration between BSH and the social-economy network, Sirris ensures that the project also advances social innovation: where new processes, partnerships, and knowledge-sharing mechanisms complement technical development and feedback loops.

BSH provides spare parts, repair manuals and technical documentation, and collects operational data from each batch of repairs (typically 200–400 appliances every few months). This data is used internally by BSH's product development teams to improve the design and reparability of future appliances, closing the loop between field experience and product innovation.

4.7.3 Motivation and collaboration

BSH joined this collaboration to strengthen its role in circular economy efforts, protect its brand reputation in the second-hand market, and promote responsible appliance life extension. As part of its broader sustainability strategy, BSH sees the control of refurbishment (including tracking of serial numbers and use of genuine parts) as essential to ensuring safety and quality in the reuse market.

For social-economy partners, the project presents an opportunity to increase operational efficiency in repair protocols, improve training methods, and access better-quality waste steam of appliances to be repaired and spare parts. VITES, for example, benefit from deeper relationships with manufacturers, which helps scale their refurbishment activities, improve quality, and strengthen their business models. The collaboration offers a structured training tool and direct access to BSH resources and data.

For Sirris, the collaboration is not just a technology pilot. It is a broader innovation experiment. The organisation views circular economy not only as a matter of materials and efficiency but also as a social innovation process, where creating new alliances and modes of cooperation are equally central. The development of the AI repair assistant is therefore as much about improving repair logistics as it is about shaping new, inclusive ways of organising technical work between industry and the social economy.

4.7.4 Strengths

Brefurbish illustrates how repair efficiency can be enhanced through targeted collaboration across sectors. By embedding technical guidance into a user-friendly digital tool, the project reduces the skill threshold for high-quality repairs and improves training on the work floor. The app's visuals and stepwise repair guides help operators who may struggle with language or ICT skills, which are common barriers in social-economy contexts.

For the social-economy partners, participation in Brefurbish offers an opportunity to demonstrate their ability to support innovation and contribute meaningfully to industry-led repair ecosystems. It also helps create bridges, that show how existing skills within the social economy can be aligned with industrial standards and emerging digital tools.

A further strength lies in the social economy's proven ability to structure work into clearly defined, manageable tasks. This approach allows trainees or new workers to progressively build competence by mastering specific steps, such as diagnostics, part replacement, or testing, before tackling more complex repairs. This modular learning-by-doing model is particularly effective in settings where formal educational pathways are not accessible or relevant to participants.

The collaboration also enables scaling: by supplying social economy repairers with technical documentation, multiple units of the same model and spare parts, VITES and others can streamline the repair process, deepen expertise, and accelerate training.

For BSH, partnering with social-economy actors avoids the high costs of internalising refurbishment and allows for brand-safe life extension. The company gains real-world data on appliance performance and common failures, while reinforcing its corporate identity as a sustainability leader.

4.7.5 Challenges

The digital tool is still under development, and while initial feedback has been positive, features like language flexibility and real-time updates require ongoing refinement. One of the key limitations of the model remains the low rate of skills transfer to the formal economy. While the project helps build repair competence and confidence among social-economy workers, very few move into commercial repair roles. Most repairers within the social-economy circuit, many under Article 60 contracts, do not transition into formal-sector jobs. Differences in expectations, work pace, and soft-skill requirements continue to pose barriers and only a small fraction successfully enter commercial repair services.

There are also social and cultural challenges: most repair trainees are male, and many come from migrant backgrounds. Technical ability often comes from informal learning or overseas training. Vanden Borre, for example, offers internships, but few participants are hired following these internships due to mismatched expectations around performance and customer interaction. As a result, the technical and digital upskilling achieved within Brefurbish tends to remain within the social-economy circuit, without significantly contributing to the broader labour-market transition.

4.8 Hobby Repair: decentralised home-based repair

Hobby Repair is a Mindset-Centred alliance run by KU Leuven in partnership with Maakbaar Leuven, and VITES Kringwinkel. It mobilises a decentralised network of skilled volunteers who repair large household appliances like washing machines and dishwashers at home for resale through the social economy. By activating the repair skills of retired hobbyists outside formal workshops, it demonstrates that high-quality repair can happen informally, supports reuse, and builds public acceptance that repair is accessible and worthwhile, fitting into the Mindset Shift and Operational Efficiency pathways while showcasing an innovative Mindset-Centred model.

4.8.1 Context and scope

Hobby Repair is a pilot project initiated by KU Leuven, a work integration social enterprise organisation, in collaboration with Maakbaar Leuven, a non-profit organisation focusing on repair activities, and VITES Kringwinkel. It explores a decentralised model for repairing household appliances through a small network of skilled hobbyists who repair appliances at home. Rather than operating from a central repair facility, VITES coordinates the collection, distribution, and resale of appliances, while the actual repair is carried out in the private workshops of volunteers.

The initiative responds to two key needs: tapping into the repair capacities of technically proficient citizens (often overlooked in mainstream training systems) and increasing VITES's overall repair volume without proportional investment in workshop space and staff. It also contributes to building a broader repair mindset by demonstrating that professional-quality repair is possible outside formal settings. By supporting skills for prosumers, this model also shows how informal, home-based repairers can play a practical role in extending product lifetimes, demonstrating the untapped value of the informal economy in the circular transition. Access to devices for repair is generally difficult, except through Kringwinkel, which plays a role by providing broken devices that hobby repairers can work on.

4.8.2 Operations and methodology

Appliances are collected by VITES through its established reuse and recycling network. Machines considered repairable are delivered to the homes of participating hobbyists: currently a group of five volunteers with prior experience in electronics or mechanics. These volunteers, who are equipped with their own tools and working space, repair the machines at their own pace in exchange for a modest compensation. Once repaired, the appliances are collected again by VITES, tested for safety and functionality, and resold via its social-economy channels. VITES can provide these volunteers with multiple units of the same appliance model, sometimes 10 or more at once, that increases the scale of what the hobbyists could access without this collaboration. Hobby repairers log detailed information on each device (e.g. if it can be repaired, what spare parts are needed, viability of repair) directly into the Kringwinkel system. If a part is needed, VITES orders and delivers it.

Currently, logistics are handled by VITES, but hobby repairers often prefer picking up and dropping off items themselves at Kringwinkel or a herstel hub rather than having them delivered, as this allows them to choose devices that meet their conditions and even mine parts from unrecoverable devices. The existing Kringwinkel logistics network (i.e.; its trucks already on the road) could potentially make this more efficient, but in practice this is not yet the case, and hobby repairers still commute individually.

The collaboration works as a service to Kringwinkel, which pays for the repair work and handles resale and logistics. However, Kringwinkel currently only repairs about 0.05% of the total devices it could repair, so expanding capacity is a clear goal. The model complements the limited in-house repair capacity at Kringwinkel and the low sales of repaired EEA.

4.8.3 Knowledge-sharing and collaboration

Beyond logistics and output, VITES sees this initiative as a way to preserve and mobilise valuable repair knowledge and motivate repair mindset within the population. Volunteers often possess decades of experience. This knowledge is rarely documented or formally transferred. While VITES is interested in fostering dialogue between these hobby repairers and trainees in its regular training programmes, transferring this expertise remains difficult: the skills are often intuitive and context-specific, and language can be a barrier as volunteers and VITES staff sometimes have different levels of Dutch proficiency.

At present, the broader communication about the initiative relies mainly on informal channels such as word-of-mouth among hobbyists and local networks, mostly done through Maakbaar. There is no structured communication or public awareness campaign yet, as the pilot is intended as a demonstration project to test feasibility before wider rollout. Maakbaar Leuven plays an important role in this, as to coordinate the practical and logistics aspects, connect volunteers with the devices, tools and spare parts, and playing the logistic hub. KU Leuven's role has been to seed the idea, develop the business model, and manage the project, but the long-term goal is for it to become hands-off. Kringwinkel aims to subcontract Maakbaar for logistics and volunteer coordination, while it focuses on device provision and resale.

4.8.4 Strengths

Hobby Repair uses decentralised repair to leverage the time, space, and skills of a group of dedicated volunteers. It avoids the costs of large workshop infrastructure and enables skills activation in the population while it fosters a culture of repair and reuse, challenging the idea that professional repair must always occur in centralised, institutional settings.

Because the repairers use their own equipment and operate in their own environments, repairs can be tailored and in-depth, potentially going beyond what's feasible in busy repair centres. VITES benefits from flexible, low-cost, decentralised repair capacity, while also keeping repaired goods within the social-economy resale circuit and allowing hobbyists to gain a meaningful way to apply their skills. Providing several of the same appliance model to a single repairer allows for repetition, increased efficiency, and deeper technical familiarity. This scale allows for strengthening expertise in specific fault patterns. It also supports learning-by-doing and contributes to informal standardisation of techniques among the volunteers.

Hobby repairers find the work rewarding because they can decide their pace, with no strict time limit, keeping the activity fun and sustainable. This ‘hobby side’ is seen as an advantage, helping unlock potential repairers who cannot attend a repair café on a Saturday, for example, and creating a snowball effect as more people express interest in joining. Repair motivations include fun, skill-building, efficiency, and modest compensation.

4.8.5 Challenges

The pool of volunteers is small and is currently limited to five men, mostly retired. There are no young people or women involved, partly due to the requirements for space, tools, and a strong baseline of technical confidence.

The logistics are also resource-intensive: transporting bulky appliances between VITES and multiple individual homes is time-consuming and expensive. So far, the use of Kringwinkel’s existing trucks is not fully integrated, and hobby repairers still rely on personal commuting. While scaling the model is conceptually feasible (and even desirable from VITES’s perspective), doing so would require more transport capacity, coordination staff and balance in the cost–benefit equation. A previous attempt to coordinate logistics with Kringwinkel Tienen failed because the logistics burden scared them off.

While the project has strong potential for knowledge exchange, skills remain difficult to transfer. The repairers’ methods are often informal, context-specific, and shaped by personal experience. Language is also a barrier, as the volunteers and technicians from VITES have different level of Dutch. Without structured mentoring or documentation tools, passing this know-how to newer generations or trainees remains a significant challenge.

Lastly, there is an imbalance in payment and gratification, which could affect long-term motivation. The project needs to test whether hobby repairers remain satisfied and whether Kringwinkel can continue to benefit. Without Kringwinkel, there is no access to the devices.

4.9 Kringwinkel Hageland (Tienen): integrating soft skills training into social employment

Kringwinkel Hageland works with local educational partners like Entro Leuven and Ligo Leuven, plus industry players like BSH and Vanden Borre, to repair mainly large household appliances for resale in reuse shops. It trains people distant from the labour market by combining hands-on technical skills with a strong emphasis on soft-skills coaching in teamwork, communication, and daily planning. This positions it within the Hard Skills and Soft Skills pathways, making it a clear example of a Hard + Soft Skills alliance.

4.9.1 Context and scope

Kringwinkel Hageland, operating in Tienen, is a work integration social enterprise promoting sustainability through the reuse of goods and providing employment opportunities to individuals distanced from the regular labour market. Recognising that technical skills alone are insufficient for successful reintegration into the workforce, Kringwinkel Hageland has developed a programme focusing on enhancing soft skills among its employees. This initiative aims to equip workers with interpersonal and professional skills, facilitating their transition to the broader labour market. Trainees who complete the full pathway can obtain a formal diploma, ensuring that their acquired skills are recognised and transferable to the regular labour market. In particular, Kringwinkel Hageland highlights that Dutch language, driving and personal behaviour skills are a major barrier to integration, and so the programme combines soft skills with a more inclusive education in cooperation with partners such as Entro Leuven and Ligo Leuven. The Tienen case illustrates how closing this divide is not only about skills but also about enabling people to be free of household and personal burdens so they have the mental capacity to engage in work fully. Digital tools support this by helping participants get organised and manage daily tasks more independently.

4.9.2 Operational model

The soft skills training programme at Kringwinkel Hageland is integrated into the daily operations of the organisation. Employees receive on-the-job training that emphasises communication, teamwork, time management, and problem-solving. Supervisors and mentors provide continuous feedback, helping workers to develop self-awareness and adaptability. This approach ensures that soft skills development is contextual and directly applicable to the tasks performed within the organisation. The training covers skills for handling emotions, daily planning, and digital skills (such as using Itsmee). Those are practical 'skills for society' that help participants function independently. These soft skills account for about 60–70% of the total training content. Technical teachers are trained by BSH to deliver technical workplace-relevant training, combining 40-50% theory with extensive practical experience on the shop floor. Each year, about 43 trainees participate in this integrated programme. Trainees typically stay for up to three years, supported by subsidies, but the organisation notes that government funding is not sufficient to cover all training costs. At the end of this process, participants can receive a certificate or diploma that demonstrates both technical and soft skills, boosting their employability. Despite this investment, it remains challenging for trainees to get recruited into the regular labour market, as cultural differences and employer expectations often create barriers. The organisation acknowledges that results in recruitment remain limited because the culture in the regular economy is still very different.

4.9.3 Motivation for collaboration

Kringwinkel Hageland collaborates with local educational institutions and social services to enhance its soft skills training programme. These partnerships aim to create a comprehensive support system that addresses both the professional and personal development needs of employees. By fostering such collaborations, Kringwinkel Hageland seeks to bridge the gap between social employment and the regular labour market, promoting social inclusion and economic participation. The organisation also works with external companies, such as BSH and VandenBorre, to co-design training that matches industry requirements. These alliances help with practical skills, provide machinery and tools for training, and create pathways into regular jobs. Some companies even send trainers to Kringwinkel Hageland to deliver training on-site. Additionally, mobility was identified as a barrier; the alliance approach includes solutions to finance and secure trainees to also obtain driving licences.

4.9.4 Strengths

One of the key strengths of Kringwinkel Hageland's approach lies in its commitment to soft skills development. By embedding soft skills training directly into day-to-day operations, employees are able to develop competencies, such as communication, teamwork, and problem-solving, in a context that is both practical and immediately relevant to their work. This allows the training to feel purposeful rather than abstract.

The organisation partnerships with educational institutions and social service providers to enrich the programme, bringing in additional expertise, support structures, and a broader perspective on the needs of the workforce. These alliances ensure that trainees receive integrated support in language learning, personal coaching and development skills, together with technical skills. The programme empowers participants by focusing on personal growth and confidence-building, which are prerequisites for moving toward employment in the regular labour market. It gives individuals a sense of ownership over their progress, which in turn reinforces motivation and engagement.

This approach recognises that employability depends not only on technical and interpersonal competencies but also on supporting individuals to be mentally and practically prepared for work: closing the divide between daily life pressures and workplace demands.

4.9.5 Challenges

One major limitation is the availability of resources both in terms of trained staff who can deliver soft-skills coaching, subsidies to finance the programme and the time needed to provide individualised follow-up. These constraints can limit how widely or deeply the programme can be applied.

Another difficulty lies in measuring the outcomes of soft skills training: while technical skills can be assessed through practical tests, it is harder to track progress in areas such as confidence, adaptability, or emotional intelligence. This makes it more difficult to adjust and improve the programme in targeted ways.

Moreover, lack of driver’s licences and transport adds another layer of difficulty, which the alliance is trying to address by offering affordable driving lessons and mobility solutions. There is also a ‘benefits trap’ that can discourage trainees from taking jobs if the financial gain is too small compared to welfare support.

Finally, even when employees make clear gains in their personal development, the transition to the formal labour market can remain difficult due to cultural differences, lingering stigma, gaps in formal qualifications, or misalignment with employer expectations. Overcoming these barriers requires sustained effort and continued external support.

5. Analysis

To answer the research question: *What is the role of alliances in upscaling and providing skills for repair activities in Flanders?* this section draws on insights from both the literature and the nine case studies. Together, they show how alliances help bridge gaps between fragmented actors, different repair cultures, and often overlooked sources of informal or tacit repair expertise. By pooling resources, connecting formal and informal skill pathways, and creating supportive environments for repair, alliances can address persistent barriers to repair skills development that no single actor could tackle alone.

5.1 Roles of alliances for upscaling skills

Repair skill development is not only technical, it is also a social process. Skills are transferred across sectors (formal, informal, social), shaped by workplace culture, and conditioned by trust, communication, and mentorship. This makes repair skill development a clear example of a market failure: the formal economy on its own does not generate enough skilled workers for repair, nor does it attract enough new people to choose repair jobs. Informal actors (e.g. hobby repairers) can bring valuable experience, but their knowledge is often undervalued or excluded from formal systems. Bringing informal and social economy actors 'into the game' may help as they hold untapped knowledge and can help fill these skill gaps. At the same time, the formal economy alone is not equipped to train enough repair workers or adapt quickly enough to shifting CE needs: *'the circular economy is not made for the formal economy,'* as one interviewee put it.

Alliances help bridge these divides by bringing together formal, informal, and social economy actors. They allow the creation of shared spaces where different repair cultures, skills, and learning models can interact. Alliances can also address market failures such as skills gaps, lack of information, poor coordination, and undervaluation of the social and environmental benefits of repair. Alliances can in that sense pool resources, share knowledge, and experiment with models that individual actors lack. In doing so, alliances offer an innovative way to organise the circular economy to overcome this market failure. They can test new forms of labour activation, skills transfer, and practical pathways for repair that yet the formal economy alone struggles to provide. These interactions, when managed well, are not only beneficial for individual skill development but also for system-level resilience in the repair economy.

Alliances can serve as practical bridges for organising the repair skills ecosystem linking the informal, social, and formal actors to strengthen repair skills across society.

This section examines how repair alliances contribute to upscaling repair skills, using insights from nine case studies. Our analysis identifies four key dimensions in the development of a repair workforce: mindset, hard skills, soft skills, and efficiency. These dimensions reflect a progression, but not a linear one. Different initiatives may begin at different points or focus on only some elements depending on their goals, resources, and the types of goods they work with. While the outcomes vary depending on context, product type, and partnership configuration, these alliances collectively demonstrate the range of possibilities for building repair capacity across Flanders.

5.1.1 A four-part journey to scaling repair skills

One way to analyse how alliances address this challenge is to break down the dimensions needed to scale up repair skills in practice. The following four-part journey shows how alliances can support people along this path from changing mindsets to ensuring repairs are efficient enough to formulate the basis of a viable business model. Based on the case studies and literature, we identify four key building blocks in the upscaling of repair skills:

1. Mindset: building acceptance and interest in repair

   A repair society begins with the perception that repair is possible, worthwhile, and meaningful. This requires early exposure, visible role models, and positive repair experiences. As repair often carries negative associations linked to inconvenience, outdated practices, or low status. Thus, alliances play a key role in changing perceptions, especially among young people and newcomers. Projects like Herstel Heroes or informal initiatives like Hobby Repair Leuven show that normalising repair through schools or community settings can lay the groundwork for future engagement.

2. Hard skills: technical competence and certification

   Hard skills refer to the manual and diagnostic expertise needed to carry out safe, high-quality repairs. These include both general techniques and product-specific knowledge (e.g. sewing for textiles, electrical testing for appliances). In some alliances, these skills are transferred through hands-on training, formal courses, or supervised work experience. Examples include Kringwinkel Antwerpen, which focuses on appliance diagnostics and repair for resale, and United Repair Centre, where trainees progress from basic to advanced textile repair modules.

3. Soft skills: communication, adaptability, and customer interaction

   Repair work increasingly involves interaction with clients, teamwork, and adaptability, especially in mobile or in-home services. Soft skills are essential for those who are engaging with customers, managing expectations, and integrating into diverse work environments. This is particularly relevant when moving workers from the social economy into the formal labour market. Alliances like Horizon Centre and the Herstel Hub provide not only technical training but also support the development of confidence, language skills, and professional behaviour. The Tienen case at Kringwinkel Hageland further shows the benefits of developing soft skills hand-in-hand with addressing the personal and household challenges that can limit a person's capacity to work. Digital tools can help trainees organise their daily lives, freeing up mental space to focus on communication, adaptability, and workplace readiness. This 'closing the divide' approach supports individuals to make a successful transition into the regular labour market.

4. Efficiency: organising for speed, cost-effectiveness, and scalability

   Repair services must be economically viable to compete with replacement options. This requires streamlined workflows, standardised processes, and fast turnaround times. Alliances can help achieve this by sharing infrastructure, specialising roles, and coordinating logistics. For example, Decathlon/CiLab developed a modular, multi-tier repair model to manage high volumes, while Brefurbish integrates diagnostic software and workshop protocols to reduce repair time and optimise labour.

Repair alliances do not address all of these aspects equally. Each case supports different parts of the skill-building journey, depending on its objectives, resources, and operational model.

5.1.2 Six types of repair alliances

To understand the diverse contributions of repair alliances, we grouped the nine cases into six typologies, each reflecting a different configuration of skill development priorities. Arguably, a combination of all four dimensions offers a comprehensive framework to develop and upscale repair capabilities, in practice, most alliances focus on a subset of these areas. The relevance and feasibility of addressing each dimension can vary depending on the alliance's goal, resources and context.

1. Mindset-centred: Herstel Heroes and Hobby Repair Leuven

   These alliances work primarily on shifting perceptions of repair, especially among youth (Herstel Heroes) and the general public (Hobby Repair Leuven). Herstel Heroes integrates repair into schools, fostering early exposure. Hobby Repair Leuven connects experienced volunteers with community members, making repair visible and accessible. Both play a vital role in creating a culture where repair is normal, encouraged, and respected.

2. Hard skills only: Kringwinkel Antwerpen (Meir)

   This alliance centres on developing technical skills for large household appliances. Workers are trained in testing, diagnostics, and refurbishment for resale. The focus is on practical skills, not on public engagement or customer interaction. The alliance fills a clear labour market gap, though it faces limitations in progressing workers toward more complex, consumer-facing roles.

3. Soft skills first: Herstel Hub

   In its initial phase, Herstel Hub focuses on group learning, inclusion, and social connection, with technical training kept minimal. The model serves as a stepping stone into the repair economy, targeting individuals who need time and support before entering more structured or demanding repair environments.

4. Hard + soft skills: Horizon Centre and Kringwinkel Hageland

   These initiatives provide both technical training and soft skill development, aimed at people distanced from the labour market. Workers are trained in product repair while receiving language support, teamwork coaching, and social integration assistance. These alliances demonstrate how repair work can act as a bridge to broader employability, not just a technical skill path.

5. Efficiency-focused: Decathlon/CiLab and Brefurbish

   These alliances are designed around scalability and speed, focusing on streamlined logistics and clearly defined workflows. At Decathlon, repairs are integrated into the retail ecosystem, and CiLab staff support triage and backend operations. Brefurbish, working with electronics, aims to optimise throughput using diagnostics and digital tools. Both cases show that efficiency itself is a skillset, one that enables repair to compete with replacement.

6. Holistic model: United Repair Centre

   This alliance supports all four dimensions: it shifts perceptions, trains in hard and soft skills, and runs an efficient, professional operation. The United Repair Academy provides structured, certified training alongside employment, creating a full pathway from entry to expert. The alliance also supports brands in measuring CSR impact, contributing to feedback loops for more repairable design. This model shows how alliances can function as full repair ecosystems.

Table 5.1 (below) shows an overview of the main characteristics of the repair alliances studied. It provides a comparative overview of the case study alliances in repair, highlighting the variety of repair skills, organisational contexts, product focus, and the social profiles of repairers involved. The comparison illustrates how each model addresses specific barriers to repair such as skills shortages, language and cultural barriers, or logistical challenges while also delivering social benefits like job creation, skills development, and community building. Notably, the cases show different pathways for integrating technical, soft, and language skills training, and showcase the diversity of existing pilot alliances working to scale up repair activities. The six typologies demonstrate that while the core purpose of upscaling repair skills is shared, repair alliances vary greatly in form, strengths, and challenges depending on product type.

Table 5.1 - Summary of the cases

	Herstel Textile Hub	**Decathlon/CiLab**	**Herstel Heroes**	**Hobby Repair**	**Brefurbish**	**United Repair Centre**	**Repair Atelier**	**Horizon Centre**	Kringwinkel Hageland
Typology of alliance	Soft skills first	Efficiency-Focused	Mindset centred	Mindset cantered	Efficiency-Focused	Holistic model	Hard skills first	Hard + Soft Skills	Hard + Soft Skills
Type of repair skills	Professional repair skills	Professional repair skills	Basic repair skills; knowing repair is an option; diagnosis	Professional diagnosis and repair skills	Professional diagnosis and repair skills	Professional repair skills	Professional diagnosis and repair skills	Professional diagnosis and repair skills	Professional diagnosis and repair skills
Location of the repair	In workshop	In workshop	In workshop	At home	In workshop and at consumers	In workshop	In workshop	In workshop	In workshop
Products repaired	Textile	Textile	Textile	EEA	EEA	Textile	EEA	EEA	EEA
Type of repair activities	Repair as life extension	Repair as life extension	Repair as life extension	Refurbish	Repair as life extension and for refurbish	Repair as life extension	Repair as life extension and for refurbish	Refurbish	Repair as life extension and for refurbish
Profile of repairers	Mostly women of all ages, many with migration background, often distant to labour market	While not the intention, the employees are all refugees with previous repair experience	Young people (14-24 y), currently mostly young men	Mostly old white men, highly educated	Mostly men, with immigrant background, and distant from the labour market	Mix profiles with both men and women, different age categories, mostly distant from the labour market	Mostly men, with immigrant background, and distant from the labour market	Mostly men distant from the labour market	Mostly men, with immigrant background, and distant from the labour market
Barrier to repair	Language and cultural barrier	Lack of professional, skilled repairers	Insufficient knowledge about the possibility to repair and the infrastructure to engage in repair	Lack of pieces and logistics to repair (issue with scale)	Difficulty to have efficient repair, lack technical information about repair, Language and soft skills	Shortage of professional tailors/textile repairers; efficiency in repair	Language and soft skills, Lack of professionals, Retaining skills workforce distant from labour market	Lack of skilled workforce for complex repairs; training pathways not well known	Language and soft skills, Lack of professionals, Financing
How?	Activating hidden local talent through partnerships and	Combining start-up expertise with a multinational's scale to pilot	Connecting youth to informal repair networks and mentors to pass	Unlocking informal repair capacity by matching skilled	Using digital tools and industrial partnerships to standardise repair	Linking brand take-back with in-house certified training, creating	Embedding real-world repair in a social enterprise reuse centre, with	Integrating intensive technical and soft-skills training	Combining soft-skills training with technical work and personal

	Herstel Textile Hub	**Decathlon/CiLab**	**Herstel Heroes**	**Hobby Repair**	**Brefurbish**	**United Repair Centre**	**Repair Atelier**	**Horizon Centre**	Kringwinkel Hageland
	language integration; testing professional repair as a bridge to employment	repair as a viable circular model; transferring skills and know-how without in-house investment	on repair habits and skills	hobbyists with repair logistics, expanding scale without costly infrastructure	tasks and boost repair capacity in the social economy	guaranteed job pathways and continuous skills development	strong industry partnerships to align skills with market standards	with direct pathways into high-demand repair roles	coaching to bridge social barriers and enable job market access
Social benefits?	Offering opportunity to gain professional work experience, language practice and social network	Job creation	Creating opportunities for intergenerational contact	Builds local community around shared hobby; Encourages skill-sharing and volunteering; Keeps repair knowledge alive informally	Provides affordable refurbished products; Creates job opportunities including for people with language barriers; Supports skill development	Jobs for people distant from labour market; developing high-demand textile skills	Supports reintegration into workforce; Local employment	Creates pathways for people to develop complex repair skills; Helps match unemployed people with local employers; Strengthens community networks	Affordable products for low-income households; Local jobs in sorting, repair and resale
Strengths	Strong local network; trusted partnerships; stable repair work pipeline; reflective work environment to develop soft skills; bridges social inclusion, language, and repair skills; supports soft skills and social networks; agile structure with freedom to experiment	Stable source of revenue for start-up; start-up transfers technical repair expertise and circular innovation to Decathlon; mutual skills transfer in automation, standardisation and design feedback; supports Decathlon's sustainability positioning	Revives intergenerational repair skills (mentorship); builds habit & awareness about repair; low-barrier informal setting; helps schools link practical repair without changing full curricula; Complementing schools in STEM education; community learning	Mobilises hidden repair talent; decentralised home-based model taps into informal economy; enables skills activation without big infrastructure; allows hobbyists to specialise and deepen expertise on specific appliance models	Digital repair assistant improves training on the job; visual aids overcome literacy barriers; structured feedback loops strengthen ties with manufacturers; social economy partners gain reputation for technical reliability and innovation	Steady repair flow; rapid-turnaround service; inhouse training: job after training; tailoring training to new arrivals with prior skills plus soft-skills and language coaching; data loop feeds design improvements	Hands-on daily repair; real commercial exposure; strong partnerships with private firms; tailored coaching to push trainees to their potential	Structured programme with work-based and classroom; strong employer links for real career paths; holistic support addresses personal barriers; job-dating events and alumni network strengthen transition into jobs	Embedded soft-skills training improves employability; close cooperation with social services, local schools and employers; practical, integrated model closes gap between daily life and workplace demands; flexible and individualised coaching

	Herstel Textile Hub	**Decathlon/CiLab**	**Herstel Heroes**	**Hobby Repair**	**Brefurbish**	**United Repair Centre**	**Repair Atelier**	**Horizon Centre**	Kringwinkel Hageland
Challenges	Replicating model difficult due to context-specific networks; balancing human-centric approach with repair volume; Finding new customers (B2B); professionalising organisation (bureaucratic barriers to become a social enterprise)	Achieving break-even scale remains hard; convincing customers to repair instead of buy new; standardising parts and processes; shortage of skilled textile machine repairers; stores outside city centres less accessible for repairs; exploring how automation could make repair more efficient	Engaging youth outside school hours; hard to attract girls; time demand on volunteers; companies hesitant to join despite skills needs	Small volunteer pool, mostly older men; logistics costly and resource-heavy; informal skills hard to transfer to new generations; payment satisfaction and long-term motivation still untested	Limited transition of workers into formal jobs; tool refinement ongoing (language, real-time updates); social/cultural barriers persist; Article 60 work status rarely leads to commercial repair employment	Limited workshop and storage space constrains scaling; small cohort sizes; gender balance in tailoring improving but wider technical roles remain less diverse	Physical space, trainer capacity and funding limit; high variance in trainee progress; complex social barriers; gender imbalance; limited labour market transition	Limited intake (max 16 trainees per year); gender imbalance in cohorts; trainees prefer public-sector jobs, limiting private repair sector flow; expanding capacity needs more funds	Scarcity of trained staff for coaching; measuring soft-skills gains is hard; transport/mobility barriers; risk of benefits trap discouraging transition to regular jobs; stigma and employer expectations still hinder transitions

5.1.3 Importance of the context: product type and repair mode

The role of alliances in upskilling skills is also shaped by what is being repaired and how. Comparing textiles and large appliances reveals how product characteristics and repair modes create different training, logistics and collaboration needs, all of which alliances must navigate to deliver skills effectively.

The nature of the product being repaired significantly shapes both the skills required and the type of alliance that forms. For example, textile items, as in the case of United Repair Centre, can be easily shipped and repaired off-site, enabling centralised workflows and structured, modular training environments. In contrast, large electrical appliances typically require in-home intervention, which adds layers of complexity related to logistics, safety (e.g. electrical risks), and customer interaction. These jobs demand stronger diagnostic expertise, as well as language and interpersonal skills for technicians working directly with end users.

Another important distinction lies in the purpose of repair: whether the item is returned to the original user or refurbished for resale. Refurbishment often takes place in workshops and prioritises efficiency, testing, and cost-effectiveness, as seen in models like Brefurbish. Customer-facing repair, such as that offered by Vandenborre, requires greater attention to soft skills and service quality, as well as faster turnaround times to match consumer expectations.

These structural differences also influence how and where skills are taught. Textile repair can be standardised and staged within training academies, while EEA repair is more dispersed, mobile, and situational, relying heavily on technician judgment in the field. As such, alliances must tailor their training and workflow models to the specific demands of each product category, including regulatory constraints, logistics, and customer-facing realities.

While the previous section focused on how repair alliances contribute to building and scaling skills, it is equally important to consider how collaboration itself functions within these alliances. The ability of an alliance to support mindset change, technical training, soft skills, or workflow efficiency depends not only on the nature of the work but also on the quality of the collaboration behind it. In the next section, we explore the collaborative dynamics of these initiatives, what motivates partners to work together, the advantages these partnerships offer, and the key challenges and conditions that shape their effectiveness.

5.2 Collaborative dimension in repair alliances

The previous sections focus on what alliances do but the question of how they work together is just as important for understanding their role in upscaling repair skills.

Figure 5.1 visualises how different actors within repair alliances exchange skills, resources, and mindsets to enable a functioning repair ecosystem. The arrows illustrate the flow of hard and soft skills, tools, goods, labour, and money between citizens, training centres (CVO, Syntra, VDAB, Forem, Ligo), employment services (VDAB, FOREM, Actiris, RVA, ONEM), companies, and WISEs (Work Integration Social Enterprises). This shows that upscaling repair skills depends not only on isolated training efforts, but on multi-directional exchanges that combine technical skill development, mindset shifts, and resource sharing. By mapping these flows, Figure 5.1 highlights how collaboration can unlock synergies between actors, creating pathways for skills to circulate and grow in line with local needs and capacities.

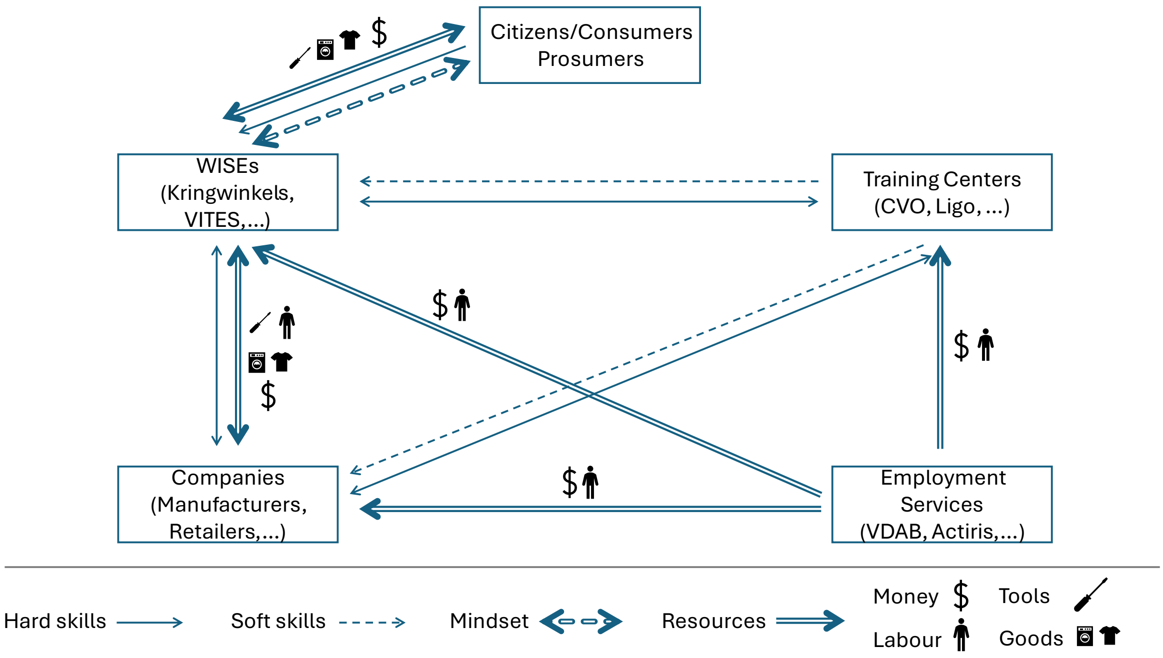


Figure 5.1 - Skills and resources flows in Repair Alliances

Furthermore, recognising the importance of the social context of repair and the temporal dimension of repair in fostering repair skills among both the general public and professional repairers, we now turn to explore how collaborations in particular can contribute to creating more supportive environments for skill development. These alliances can play a role in bridging gaps in knowledge, resources, and networks, helping to scale repair practices.

While this study does not focus on assessing the internal functioning or governance of alliances, collaboration remains a central enabler for the development, transfer, and scaling of repair skills. By examining how alliances come together, why they are formed, and what conditions support or hinder them, we gain insight into how collaborative dynamics contribute to (or complicate) the building of a skilled repair workforce.

Drawing on the case studies, we explore three dimensions relevant to skill development: the motives behind collaboration, the practical advantages it offers, and the points of attention that warrant careful management.

5.2.1 Motives for collaboration

Digging deeper, we look first at why different partners choose to collaborate. Understanding these motives sheds light on how alliances align shared goals with skills development.

Repair alliances emerge from a combination of intrinsic and extrinsic motivations, operating at both the individual and organisational levels. Across the cases, intrinsic motivations were especially visible among social enterprises and nonprofits. For example, actors at United Repair Centre and Vites expressed strong personal commitment to creating inclusive work environments and enabling newcomers to the labour market to develop technical and transferable skills. These alliances are often driven by a shared vision of social impact, sustainability, and local economic inclusion.

By contrast, for-profit organisations often partner for more pragmatic reasons, such as responding to labour shortages, keeping pace with sustainability regulation, or ensuring faster repair turnaround times. This is evident in Brefurbish and the involvement of Vanden Borre both with Horizon Centre and the Kringwinkel Antwerpen, where the alliance between major electronics producer/retailer and a reuse centre reflects a clear need to stabilise workflows, meet reuse targets, and access a labour force not readily available in the formal market. Similarity can be found in the case of the Herstel textile hub. In both case there is desire to create a credible repair model that aligns with their CSR commitments, while simultaneously feeding repair data back into product development. As Brown *et al.* (2019) note, in circular-oriented innovation, successful partnerships often arise from entrepreneurially minded leadership that recognises the opportunity to align values with emerging business models.

In many cases, collaboration also serves as a low-risk experimentation space. At Decathlon/CiLab, for instance, the collaboration was explicitly designed to pilot a repair model and test internal processes before deciding whether to integrate the activity long term. Such arrangements help organisations explore circularity without overcommitting resources, while still contributing to skills development among partner staff.

5.2.2 Advantages of collaboration

The motives for collaboration translate into concrete advantages that help alliances build and spread repair skills. The next section highlights how pooling capacities, infrastructure and knowledge can make skill-building more feasible and resilient.

In line with Brown *et al.* (2019) and Clarke and MacDonald (2019), we observe that these collaborations yield process outcomes (e.g. improved repair workflows, feedback mechanisms) and partner outcomes (e.g. capacity building, improved reputation), even when plan outcomes, such as meeting high repair volumes, are still in progress.

Collaboration offers several practical benefits that directly or indirectly support the development of repair skills. A key advantage is the ability to pool complementary resources: physical space, logistics capacity, trained staff, or customer access. For instance, Kringwinkel Antwerpen and VITES, but similarly the Horizon Centre and United Repair Centre, provide not only the workforce but also the infrastructure needed for sorting, storing, and preparing large appliances for refurbishment or textile to be repair. This logistical support is vital in creating structured, repeatable workflows where technical skills can be learned and refined.

The social economy's flexibility is another important asset. At Vites, roles are designed to match the abilities of workers, allowing repair tasks to be broken down and redistributed as skills evolve. This modular approach supports progressive upskilling. Meanwhile, United Repair Centre and Horizon Centre exemplify how integrating a training academy into operations can offer not just employment, but a clear path from entry-level learning to professional repair technician roles.

Collaborations also enable cross-sector learning and the creation of feedback loops. In the case of Brefurbish and United Repair Centre, repair data collected in workshops is sent back to product development teams, providing insights into failure points and design improvements. This reinforces a virtuous cycle where repair experience informs better design, and better design facilitates easier repair and training.

5.2.3 Points of attention

Despite their potential, collaborations also present challenges that need to be actively managed to ensure they contribute meaningfully to skill development. One recurring issue is the mismatch in work culture and expectations between the social and formal economy. At Vites and Kringwinkel Antwerpen, the repair unit faces difficulties integrating with the demands of the formal labour market. Only a small proportion of workers are capable of taking on complex repairs or transitioning to high-demand environments, due to soft skill gaps, language barriers, and different rhythms of work.

Language remains a key barrier, particularly for social economy actors providing in-home repair services, where technicians must communicate directly with customers. This limits the type of repair services that can be offered and complicates training trajectories for newcomers. Vites, Kringwinkel Antwerpen, Vanden Borre and BSH reported these constraints when attempting to expand beyond back-of-house preparation and into customer-facing roles.

There is also a need to balance power dynamics in alliances, especially where smaller organisations collaborate with well-resourced corporate partners. While this was not explicitly problematic in the case studies, the literature cautions against the risks of mission drift or co-optation (Selsky & Parker, 2005; Baur & Schmitz, 2012). Ensuring a fair and transparent division of roles, shared governance, and regular reflection on partnership objectives can help mitigate these risks.

Finally, collaboration itself requires specific competencies from interpersonal communication to change management. Leaders in organisations like MAAKbar and CiLab demonstrate these abilities through their inclusive leadership style, attention to team dynamics, and capacity to maintain a shared vision over time. Brown *et al.* (2021) and Bryson *et al.* (2015) emphasise that such soft skills: trust-building, stakeholder engagement, and adaptability, are essential to sustaining partnerships, especially in early-stage, exploratory alliances.

5.3 Typologies of repairers

The role of alliances in upscaling and providing repair skills in Flanders must also be seen through the lens of who is doing the repair work. The literature and case studies show that repair is carried out by diverse groups, from professional technicians and trainees in the social economy, to hobby repairers and everyday citizens who repair informally at home. Each group faces different barriers, skill needs, and motivations. Understanding these typologies helps answering the research question, because it reveals how alliances can tailor their support: by designing pathways that connect informal skills with formal training, by changing mindset of consumers towards repair, boosting confidence for prosumers, or by helping professional repairers build advanced competences and soft skills. This section explores these different groups and the ways alliances can address their specific needs to strengthen repair capacity across society.

The literature indicates that the skills required depend heavily on the type of repair society that develops. The selected repair alliances in this study span both general public initiatives aimed at raising awareness about repair and fostering basic repair skills for prosumers, as well as more specialised programmes that provide professional repair services. We believe both approaches are important in a repair society: encouraging a baseline repair awareness and confidence among the general public, while expanding professional repair services.

Herstel Heroes for prosumers aims to empower youth by teaching basic repair skills and making repair recognised as a viable option. Similarly, Hobby Repair demonstrates how informal, decentralised networks of skilled hobbyists can foster the role of the informal economy by enabling home-based prosumers to contribute to repair capacity. Other case studies such as Decathlon/CiLab, Herstel Hub Textiel, the Repair Training Atelier at Kringwinkel Antwerpen, and the Horizon Centre, address the professional repair skills gap to build a workforce that can deliver reliable services. For example, Kringwinkel Antwerpen's atelier combines hands-on repair with real resale operations, while the Horizon Centre uses an intensive curriculum to prepare market-ready technicians.

Together, these case studies showcase the varied approaches to teaching and developing repair skills within different types of alliances. What they share is an emphasis on collaborating with other stakeholders (e.g. public agencies, manufacturers, and informal networks) to bridge the skills gap and build pathways between the informal and formal economy. This report explores the potential for scaling up repair skills among both professional repairers and prosumers in the general public. Our findings reveal overarching trends and specific challenges within each group.

5.3.1 Professional repairers

Professional repairers are an important part of scaling repair capacity. Here, we consider how alliances connect training, inclusion, and real jobs, and why some barriers still hold back a transition to stable professional roles.

For professional repairers, the general shortage of technically skilled workers in Flanders poses a major barrier to expanding professional repair services. The repair field often struggles to offer competitive wages compared to other technical industries, making it difficult to attract and retain talent. In a market where technically skilled talent is scarce, our research shows that some professional repair initiatives are helping to fill this gap by recruiting people who are traditionally more distanced from the labour market and/or integrating informal repair into a more formalised repair ecosystem.

As a result, many repair projects serve a dual purpose: they focus not only on repairing goods but also on creating social and inclusive opportunities. Individuals with migrant backgrounds, for example, are often participants in these initiatives and may already bring basic repair skills, as observed in Herstel Hub Textiel and CiLab. These repair projects can offer an income (in the case of CiLab) but also stability, social connections and pathways to build professional networks and improve language skills (in the case of both CiLab and Herstel Hub). This phenomenon is not unique to Flanders; it is also evident in larger international initiatives such as the United Repair Centre in Amsterdam, which combines professional clothing repair with dedicated training for newcomers to the labour market.

Similar trends appear in the Repair Training Atelier at Kringwinkel Antwerpen and the Horizon Centre in Brussels, where trainees gain hands-on technical skills and soft skills to prepare for professional repair work. Despite these structured pathways, moving from the social economy into commercial repair jobs remains challenging.

In the social economy, workers are expected to transition into the formal economy, but in practice, only a small share (often less than 20% according to those interviewed) actually succeed in doing so. Cases like Brefurbish show why: although social-economy workers gain valuable technical and digital repair skills through real-life appliance refurbishment, they can struggle to adapt to the pace, productivity targets, and customer interaction required in commercial settings. Barriers include higher profitability expectations, tight repair turnaround times, and additional skills needed for consumer-facing roles, such as communication, problem-solving on-site, or driving licences for field repairs. These challenges mean that while the social economy plays an essential role in building up repair competence, extra support is still needed to ensure more workers can successfully bridge into stable employment in the formal repair sector.

5.3.2 Everyone is a repairer

When increasing repair skills among the general public, a key challenge is helping individuals to recognise the basic lesson that repair is a viable option ('interpreting brokenness'). Additionally, building familiarity with basic maintenance practices is important too, as proper product care can significantly reduce the need for repairs over time. However, in today's fast-paced society, many people may lack or may not prioritise the time needed to 'slow down' for repair practices.

Alliances also have a role in encouraging more people to repair everyday items themselves. This section highlights how alliances help normalise basic repair habits and make self-repair more accessible.

An important factor in encouraging the general public to adopt basic repair skills is habit formation. Initiatives like Herstel Heroes for prosumers seem valuable as they focus on instilling these habits early, particularly among young people, to create a lasting foundation for repair-minded behaviour. Similar efforts, such as Repair Café Kids and Skills for prosumers training, emphasise early engagement to make repair practices more common.

Concrete examples from the EEA sector highlight how different approaches can build confidence and competence for prosumers of all ages. For instance, the Repair Training Atelier at Kringwinkel Antwerpen and the Horizon Centre in Brussels combine hands-on repair with real-life workplace experience, showing how structured programmes can reconnect adults with the practice of repair. Meanwhile, the Hobby Repair pilot demonstrates how informal, decentralised home-based repair by skilled volunteers can help foster the role of the informal economy, tapping into hidden technical skills in communities and showing that repair does not always need to happen in formal workshops.

During the research, we came across another format for a 'repair alliance' with potential: Corporate Repair Cafés. These cafés provide an additional solution beyond habit formation and exposure to 'repair-as-an-option'. Organised within companies in collaboration with Maakbaar Leuven vzw, they address time constraints by integrating repair activities into the workplace, allowing employees to participate without sacrificing personal time. Corporate Repair Cafés offer repair services by and for corporate employees, who can simply bring their broken devices to work. Maakbaar Leuven vzw introduced this concept to address the challenge of accessibility faced by many traditional repair cafés, by offering a time-saving repair option. While classic repair cafés offer free services, they often pose a high barrier for many people, primarily due to the need to set aside time on weekends. By incorporating practices from the informal economy into a formal setting, these cafés help foster the role of the informal economy and facilitate the transfer of skills from the informal to the formal economy, as well as among colleagues within the formal sector. This reflects lessons from other cases, such as the Brefurbish project, which links industrial partners and social-economy repairers to bridge skills gaps and strengthen community-based repair ecosystems.

5.4 Gender and repair

Building a repair society means ensuring everyone feels included. This section discusses how gender shapes who repairs what, and what alliances can do to challenge stereotypes and widen participation. The literature has emphasised that repair work is at risk of perpetuating gendered divisions of labour, and our case studies reveal similar imbalances in repair activities. For instance, in the Herstel Heroes project, boys tend to gravitate toward the repair of electronics, while girls are generally more challenging to engage. However, the findings also suggest that, with the right activation efforts, boys can become equally enthusiastic about textile repair as they are about other types of repair work.

Conversely, in the Herstel Hub Textiel, the majority of participants are women. While this gender imbalance could be viewed as a limitation, it can also be perceived as an advantage, providing a supportive and empowering space where women feel comfortable and valued. Recently, a male participant was added to the project, indicating that the gender dynamics could evolve over time.

In contrast, CiLab demonstrates a more balanced mix of genders among textile repairers, diverging from the gendered patterns frequently observed in the literature. This difference between the Herstel Hub and CiLab may not be inherently linked to the type of repair work, but could instead stem from the distinction between voluntary work and professional employment.

At the United Repair Centre in Amsterdam, which focuses on clothing repair, newcomers from diverse backgrounds (including many women with prior tailoring skills) are actively supported into stable employment, although the broader garment-repair field still struggles to attract more women into technical roles. The Horizon Centre and the Repair Training Atelier at Kringwinkel Antwerpen both report that technical repair training remains largely male-dominated, despite outreach efforts. Similarly, the Hobby Repair pilot currently involves mostly older men, underlining how informal, home-based repair activities often draw on existing technical confidence, which is more prevalent among men.

Taken together, these cases suggest that gendered divisions in repair are not uniform but vary according to context, type of repair, and whether the activity is voluntary or paid work. While the number of cases remains too small to draw definitive conclusions. They highlight the importance of targeted approaches: including safe spaces for women, balanced recruitment for professional tracks, and activation strategies for boys and girls alike. That way they challenge stereotypes and make repair accessible to all.

5.5 Reflections on repair

This section reflects on how repair works not just as a technical fix but as a social practice and an ongoing process shaped by everyday routines, mindsets, and supportive networks. This perspective highlights that the role of alliances in upscaling and providing repair skills in Flanders goes beyond individual training. It is equally about creating the cultural and social conditions that make repair a normal, desirable, and shared activity. By acting as safe spaces for experimentation, alliances help embed repair habits more deeply into daily life, laying the foundation for a repair society that can grow sustainably and move beyond isolated projects.

5.5.1 Repair as social practice

The literature has highlighted the importance of the setting in which repair takes place when aiming to scale up repair practices. Jaeger-Erben *et al.* (2021) found that social support, infrastructure and competences are linked to lower perceived behavioural and financial cost, which in turn is linked to more repair. Repair skills do not grow in isolation: they rely on the social setting, trust and mentorship that alliances help create. In this study we present empirical evidence that supports those findings: Alliances allow such social practices and thus matter for developing and spreading repair capabilities. Our results reveal that various aspects of repair such as infrastructure, mentorship, and social support are deeply interconnected in fostering a repair culture and increasing repair skills.

First of all, the Herstel Heroes project showed to us that the infrastructure of repair cafés (e.g. sewing machines) can be inspiring to young people. According to an interviewee it motivated the youth to engage in repair activities. Furthermore, it seems that social support plays an even more important role. The insights from the Herstel Heroes project underscores the importance of mentorship, where the relationship between a skilled repair volunteer and a student can cultivate enthusiasm for repair, which is an important element when learning and improving repair skills.

Similarly, the Herstel Hub Textiel prioritises creating an environment where existing repair skills can flourish, placing strong emphasis on social support for skill application and development. In this case study, while infrastructure can facilitate repair activities, it does not necessarily serve as the primary driver for scaling up repair skills. Instead, it is the social space created within these hubs that plays a role. Such repair hubs provide a communal environment where individuals can gather, exchange knowledge, and work collaboratively, creating a network of social connections that reinforces their commitment to repair.

The Repair Training Atelier at Kringwinkel Antwerpen shows how a well-equipped, real-life workshop combined with close coaching helps adults build technical skills and confidence through daily repair of household appliances like washing machines and bikes. The Horizon Centre in Brussels also highlights that having professional infrastructure alone is not enough; a supportive learning environment and mentorship are critical to help trainees (as many are from precarious backgrounds) succeed in developing employable repair skills for large household appliances.

The Brefurbish project illustrates how tailored digital tools and reverse logistics infrastructure can support repairers in the social economy to carry out efficient appliance repairs. But here, too, the real driver is the interaction between technicians, trainers, and the feedback loops they build with industry partners, demonstrating that social connection and knowledge sharing make the technical infrastructure meaningful.

The United Repair Centre in Amsterdam provides another clear example: its professional repair hubs for clothing combine brand partnerships, modern repair infrastructure and a certified academy that mentors newcomers into the labour market. This approach shows that a supportive, people-centred environment is just as crucial as the physical workshop, helping trainees gain confidence and transition into paid roles.

Likewise, the Hobby Repair initiative shows how decentralised home-based appliance repair by hobbyists taps into informal networks of trust and shared knowledge. The volunteers' own workshops enable them to work at their own pace, share tips, and maintain motivation, proving that a supportive environment can take many forms, even outside formal workplaces.

In essence, it appears that the infrastructure serves as a backdrop, while the real value lies in the social interactions and networks that flourish within it. This focus on community and connection emphasises that scaling up repair skills requires more than just access to tools and facilities. It depends on nurturing a supportive and collaborative environment that can engage people in the long term.

While CiLab and United Repair Centre operate in a more professional setting compared to others, a supportive environment remains a factor in their success. Those interviewed emphasised the considerable effort invested in team building, ensuring alignment of values and a strong fit with the organisation's ethos.

5.5.2 Repair as a process

Research that frames repair as a process highlights three main themes in the repair experience: interpreting brokenness, engaging in repair, and using the repaired item. Viewing repair as a process shows how alliances can support each stage and build lasting skills and habits for a repair society.

The Herstel Heroes project addresses the first two themes directly, supporting participants in understanding the nature of broken items and actively engaging in their repair. Corporate Repair Cafés is another impactful initiative fostering this approach yet for a different audience. These projects exemplify the diverse ways in which repair culture can be cultivated and expanded across age groups and settings.

Similarly, the Repair Training Atelier and Horizon Centre both embed daily, hands-on practice with real broken appliances, helping trainees develop the competence to diagnose faults ('interpreting brokenness') and build the confidence to perform repairs repeatedly ('engaging in repair'). Similarly, the Brefurbish project's use of AI-supported tools and step-by-step repair guidance helps social-economy technicians tackle complex appliance repairs more systematically, providing guides to speed the process, lowering the perceived barriers to engaging with unknow repairs.

Likewise the United Repair Centre referenced all the issues to be able to report them to the producer. The structured learning process which ranges from diagnosing faults to completing repairs and delivering renewed items back to brands' customers normalises repair as a valuable service. The Academy's mix of theory, practical modules, and teamwork illustrates how interpreting brokenness and engaging in repair can be strengthened when social and technical elements are combined.

The repair services offered by Decathlon could, albeit to a lesser extent, also contribute to the habit formation of repair practices. Decathlon promotes its repair services prominently in their shop, exposing customers to these options. This exposure could shift their perspective on brokenness and enhance their understanding of a product's repairability.

Making repair options and practices more visible is a key insight that supports habit formation and helps in interpreting brokenness. Building on this, another key takeaway from the interviews is the potential of 'visible repairs.' These artistic repairs enable the repairer to fix products, particularly textiles, in a way that emphasises the repair, turning it into a creative feature of the item. This approach not only enhances the visibility of repair practices, but also introduces an element of creativity, which could make repair work more appealing for some people, as it is less repetitive.

6. Policy for fostering alliances

Building a more repair-oriented economy requires both targeted actions to develop and scale repair skills, and broader systemic changes that create the conditions for repair to thrive. This includes supportive policies to enhance collaboration and to help the formation of repair alliances in scaling up repair skills.

The recommendations are therefore divided into three categories: the first addresses specific supports that could enhance greater collaboration and repair alliances; the second focuses on upskilling for repair; the final category pays attention to the structural and institutional shifts needed to make repair more accessible, visible, and economically viable across sectors. These recommendations are based on an analysis of the interviews with actors in the alliances. While they are designed to address the elements identified through the analysis of the case-studies, adjustments may be needed to align with practical and contextual factors.

6.1 Policies to enhance collaboration

In this analysis we outline how alliances can support the enhancement of repair skills. The development of repair alliances to address the skills challenge, as well as other barriers to repair, are a viable option to support and explore further. In the short term, urgent skill demands could be addressed through targeted measures such as short courses and rapid upskilling initiatives. However, a more comprehensive approach is needed to address CE skills in a deeper and more sustained way. We have seen that fostering cross-sector collaboration could be a way to achieve this long-term, which can also help to systematically embed circularity in curricula and educational programmes.

- Provide structural support for local 'spiderweb' organisations:

  Policy makers and funding bodies should consider offering flexible funding options that allow for experimentation and long-term development. This would take the form of structural subsidies to small, agile organisations which can lead to innovation and development of sustainable business models of repair. Organisations that focus on advancing the CE and repair practices would benefit from increased structural support. The Herstel Hub serves as a prime example of how such support can help build a broad network and foster various collaborations, which can be instrumental in facilitating skills transfer and enhancement at a local level. The financial support enables experimentation, providing the opportunity to explore and develop more sustainable repair models for the future without the immediate pressure of ensuring their success. This stable support seems essential for other, similar organisations to thrive and contribute positively to the local CE and social fabric.

- Support for startups through general skills development and interim assistance:

  It could be beneficial for startups to establish a government-backed interim office that supports them with general business management tasks. While not directly related to the circular economy, these tasks are stepping stones for running a (circular) business effectively. The service could provide affordable or low-cost assistance with activities such as administration, financial management, and HR support. This would lower barriers for entrepreneurs entering the circular economy space, allowing them to focus more on their core tasks and innovation. For example, the Herstel Hub Textiel case highlights how time-consuming and bureaucratic it can be to professionalise and transition to a social enterprise, while CiLab shows how small start-ups benefit from stable partnerships but still struggle with balancing skills development and daily business management. Similarly, CiLab, as a small start-up partnering with Decathlon, benefits from the stable revenue flow but still faces challenges balancing technical upskilling with day-to-day business management. Moreover, to foster the growth of social enterprises like the Herstel Hub Textiel, better support could be provided throughout the bureaucratic process of becoming a social enterprise. These operational demands are not unique to the circular economy, but they can distract entrepreneurs from their core tasks of delivering and innovating circular services.

Such support services could include access to resources, mentorship, and guidance that help organisations effectively navigate the complexities involved.

- Support for logistics and space:

  Affordable access to space and logistics which support repair activities (workspaces for repair and refurbishment initiatives, storage, etc.) need more attention, particularly where logistical constraints (e.g. storage or pre-sorting areas) act as barriers to efficiency. Providing support for space access allows organisations to maintain quick turnaround times, manage growing repair volumes, and scale more sustainably. This could include making better use of underutilised spaces such as vacant buildings or community facilities, and activating entire neighbourhoods to support circular economy logistics. Identifying existing facilities and developing local public-private partnerships could help unlock this potential and reduce the burden on public funding alone.

- Encourage communication, collaboration and knowledge sharing for innovation:

  The government can help to increase awareness among companies about the benefits of collaboration, particularly in the context of the CE. The integration of the social and or the informal economy together with the formal economy can address current labour shortages within the sector as well as developing a repair mindset. Supporting these initiatives cannot only result in the upscaling of repair skills, but also the productivity of informal repair. Governments could play a role by promoting workshops and networking events that highlight the advantages of collaboration, and foster improved communication between nonprofits, civil society, voluntary organisations, and private sector actors. Encouraging a culture of open knowledge exchange, like the one from Hobby Repairers, would not only accelerate the transition to a CE, but also help businesses understand that collaboration can be a strategic asset that drives competitive advantage and long-term sustainability. While sharing knowledge may initially be perceived as a barrier, it is essential to shift the mindset of companies toward seeing collaboration as an opportunity for growth and innovation. Facilitating dialogue could lay the groundwork for more effective and innovative cross-sector partnerships capable of driving meaningful change.

- Stimulating collaboration through Public Procurement:

  To foster ‘collaborative experimentation’ in the transition to a CE, government tenders could go beyond including circular requirements. They could also mandate a collaborative experimentation phase as part of the initial implementation of successful tenders. This approach would actively encourage partnerships and innovation, using public procurement as a tool to initiate and strengthen collaboration among stakeholders, thereby accelerating progress towards CE goals. This is not a novel concept. Such approaches are already utilised to initiate service delivery models that require co-development and testing with users and suppliers. Initiatives in this area could build on the logic of Public-Private Innovation Partnerships (PPIPs), where collaboration and iterative development are central to delivering public value.

- Strengthen the role of WISEs in repair collaborations:

  While Work Integration Social Enterprises (WISEs) could play a pivotal role in advancing a repair society and fostering cross-sector collaborations in repair initiatives, their development is limited by a quota system (referred to as ‘contingent’ in Dutch). This quota restricts the number of target group workers they can employ to the approved positions allocated by Flanders. As a result, WISEs feel compelled to prioritise the most efficient and profitable activities, such as reuse in Kringwinkels, with repair initiatives frequently sidelined. If these companies were allowed to hire more employees, they would have greater capacity to experiment with innovative repair models and engage in meaningful collaborations. To support the growth of repair initiatives while also increasing opportunities for people to enter the job market, consideration could be given to removing this quota. Additionally, the current subsidy model, which is allocated on a per-person basis, unintentionally discourages organisations from being ‘too successful,’ as they lose subsidies when workers transition successfully to the regular economy. Providing greater stability in subsidy allocation would allow WISEs to focus more effectively on their core activities and provide better long-term support to individuals, ultimately strengthening their contribution to the circular economy and the society as a whole. However, these measures may also result in unintended consequences such as the opportunities those within a WISE receive as well as changes in public perception and support for WISEs. A thorough evaluative analysis of how to support WISEs and balance various factors at play would be necessary to draw definitive conclusions.

6.2 Policies for scaling up repair skills

Developing the right skills for a CE requires balancing a sprint and a marathon (Cedefop, 2023). Repair skills are highly diverse and vary greatly across different product categories, making it challenging to draw universal conclusions. From the analysis of cases and discussions with stakeholders, we have formulated our policy recommendations for enhancing repair skills in Flanders.

- Localised training programmes through VDAB:

  CiLab and Decathlon, but as well as Brefurbish could have greatly benefited from locally organised VDAB training to enhance their repair skills, as distant training programmes were not practical for their employees. Encouraging VDAB to collaborate with local partners and organise mobile, targeted training sessions at accessible locations would effectively address this challenge, as currently undergone by CVO, Kringwinkel Antwerpen and Vandenborre. Such initiatives align with findings from the 2023 survey of local governments (Bevraging Lokale Besturen, 2023), which emphasised the value of mobile training to meet local needs. By reducing barriers to participation, these programmes could increase accessibility for vulnerable groups, strengthen regional connections, and support circular economy initiatives tailored to local stakeholders.

- Support an enabling environment for repair skills:

  In the context of repair, the challenge lies not only in the availability of technical skills but also in broader enablers such as language proficiency, social integration, and career pathways. Programmes like Taalvloeren or Horizon Centre, which combine language learning with hands-on vocational training, illustrate how human capital development can be embedded within circular economy initiatives. Such programmes do more than transfer technical skills: they help individuals build networks, gain confidence, and access future employment or training opportunities. Expanding similar models to other cities and sectors could foster greater inclusion while contributing to a more skilled and adaptable workforce for the circular economy.

- Continue to strengthen partnerships to embed circularity and repair in VET:

  Building on Cedefop's (2023) recommendation to strengthen connections within and across skills ecosystems and promote partnerships, we emphasise the importance of fostering collaborations among stakeholders in designing vocational education and training (VET) for the CE. Such cooperation ensures that current and future employees acquire the skills needed to implement and advance circular practices, including repair, not only in their professions, but also in their personal lives. Promising examples already demonstrate the value of these partnerships. For instance, the Herstel Hub's collaboration with Qrios and CiLab's close partnership with IVOC (the Training Center for the Belgian Fashion and Clothing Industry) and the United Repair Centre showcase how cooperative efforts can drive progress in CE skills development.

Expanding such collaborations will be essential for building a workforce equipped to support and sustain the transition to a CE and, more specifically, a repair society.

- Reform employment contracts in the social economy (e.g. EBO):

  Work Integration Social Enterprises (WISEs) and other social economy actors face structural barriers linked to the nature of employment contracts. In particular, EBO contracts, which are often limited to one year, create disincentives for investing in long-term skill development. Reforming these contracts by extending duration or allowing transitional arrangement, would increase the chances for the employees to acquire soft skills, encourage more stable repair jobs, and support knowledge retention within repair teams.

- Build a repair and employment data infrastructure:

  To better guide repair strategies and investment, governments could invest in data collection systems that track product repair trends, common fault types, and associated social employment impacts, such as the one built by Brefurbish. A national or regional repair data observatory could help identify patterns in repairability to increase the efficiency of the repairs. It would also, inform product design improvements, and support CSR reporting by tracking how many jobs and skills are sustained through repair activities. This builds on existing infrastructure and policy momentum in Flanders, where initiatives such as the CE Monitor are mapping the scale and value of repair in the circular economy and the Interreg NWE Sharepair project aimed at giving citizens a digital tool to access repair networks.

- Introduce repair competencies earlier in the education system:

  Repair-related learning should be integrated into the general secondary school curriculum, including in STEM, design, and technology education. Early exposure to basic repair practices can help foster a positive repair mindset, demystify manual skills, and build confidence in hands-on problem-solving. By introducing these concepts during schooling rather than waiting until post-secondary or adult education, learners can develop a foundational appreciation for product care and circularity. Although the Flemish STEM framework promotes design thinking and social relevance, repair is not yet systematically embedded in the curriculum. Pilot modules, interdisciplinary projects, or partnerships with local repair cafés and social enterprises could serve as effective starting points.

- Make repair careers more attractive to young people and job seekers:

  To ensure a sustainable future for the repair economy, efforts must go beyond awareness campaigns and curriculum tweaks. Repair careers need to repositioned structurally and culturally to appeal, particularly to younger generations and jobseekers. This includes improving the reputation, working conditions, and pay associated with repair roles, which are often perceived as low-status or transitional. While communication is important, it must be paired with systemic interventions.

These could include investment in repair alliances that offer well-paid employment, circular economy service contracts that embed repair into public infrastructure to create stable job conditions and vocational pathways that link repair to other valued fields such as robotics, digital diagnostics and sustainable design. Furthermore, repair should be recognised as a future-proof profession, essential to the circular economy, and positioned as such in public discourse and vocational orientation programmes. Innovative models through repair alliances could help reframe repair as a meaningful, skilled and resilient career path.

- Adapt adult education (CVO) to include longer, more applied repair training:

  Current training programmes in adult education centres (CVOs) are often too short or too theoretical to prepare learners for real-world repair work. Policymakers should work with training providers to extend the duration and increase the practical content of these programmes. For example, courses in textile or electronics repair could be extended beyond the typical three-month structure, with more field-based learning and mentoring from experienced practitioners. This would make CVOs a more reliable training pipeline for both the social and formal repair economies.

- Develop pre-training tracks in electronics repair for social economy workers:

  To address persistent entry barriers into electronics repair roles especially within Work Integration Social Enterprises (WISEs, governments could consider funding or facilitating short, targeted pre-training modules tailored to this context that are aligned with existing vocational structures. These short, focused courses would introduce basic diagnostic and repair concepts, while supporting language development and job readiness. Rather than creating new programmes from scratch, this approach would leverage existing institutions to deliver practical, labour-market-oriented training. Such programmes could serve as a stepping stone for workers with limited formal education or technical experience, enabling more inclusive access to higher-skill repair roles. Collaboration with VDAB and technical schools could ensure alignment with labour market needs and employer expectations. Equipping individuals with foundational skills before entering further training or employment would reduce dropout rates and make better use of investment in social employment pathways.

- Support digital innovation and shared knowledge infrastructure for repair:

  To increase the efficiency, quality, and scalability of repair services, policymakers should support the integration of emerging technologies, such as diagnostic software, digital repair guides, AI-based triage tools, and modular design platforms, into repair workflows. This support could include innovation funding, pilot programmes, and partnerships between repair actors and technology developers. At the same time, to avoid fragmentation of knowledge across organisations, governments should invest in a collective digital platform that serves as a repair knowledge base, featuring manuals, diagnostics, and best practices contributed by practitioners across sectors. Such a tool would not only preserve and circulate valuable repair know-how but also enhance training and collaboration between the formal and social economy. Together, these actions would reinforce the transition to a circular economy by embedding innovation, accessibility, and knowledge-sharing into the repair ecosystem.

6.3 Systemic policies to scale up repair

After presenting these recommendations on skills, we would like to highlight several key insights that, while not directly related to repair skills, have a significant impact on the overall repair landscape. The interviews reveal that Flanders is still a long way from becoming what could be considered a true repair society. It is especially challenging to foster a repair mindset and society for low-cost products. The business model of repair projects is often still unviable, because new, mass-produced products remain much cheaper than investing time and resources in repairs. Additionally, the poor quality and design of many products often make repair less appealing or entirely impractical. Product design plays a foundational role in fostering a successful repair society. It can either encourage individuals to pursue repairs or deter them entirely. To support repairability, products should be intentionally designed to facilitate easy disassembly, replacement of parts, and long-term maintenance.

Insights from the research, including case studies and exploratory interviews, clearly signal that a successful transition to a repair society in Flanders requires more than 'just' enhancing repair skills; it demands a broader set of systemic interventions. Focusing solely on skill development holds limited value if the rest of society does not move in tandem toward this shift. As long as regulations do not strongly support circularity, offering repair services in a linear economy remains challenging. For example, the Dutch *Beleidsprogramma Circulair Textiel 2025–2030* highlights how targeted policy measures, such as producer responsibility, design-for-repair requirements, and incentives for reuse, can create the enabling conditions needed for repair to become more mainstream. Without such supportive frameworks, repair initiatives often struggle to compete with cheap linear consumption patterns.

To support the broader transition toward a repair society, the following recommendations could be considered:

- Continue to strengthen and enforce CE regulation:

  Develop and implement a clear, long-term regulatory framework to support the transition to a CE, with a particular focus on repair services. This should include setting ambitious targets, offering incentives for businesses to adopt CE practices, and ensuring consistent enforcement of regulations. Such a framework can stimulate collaborations by increasing volumes and opportunities for repair. Greater clarity and more ambitious policies could help kickstart these efforts and encourage businesses to move forward with CE practices.

- Facilitate the adoption of ESPR and right to repair legislation:

  Support the implementation of the European Sustainable Product Regulation (ESPR) and Right to Repair laws at national, regional, and local levels. This includes enacting legislation that prohibits the destruction of unsold products, mandating that excess inventory be redirected to social or environmental initiatives rather than discarded. Additionally, strengthen these policy frameworks while maintaining an open dialogue with stakeholders to identify the most effective ways to do so. For instance, policies could mandate prioritising repair over replacement, not only when it is the cheaper option. Another potential measure is introducing reporting requirements on product breakdowns. Increased repair efforts can provide valuable feedback loops to manufacturers. Reporting requirements would support better data management that could drive improvements in product design. The scope of reparability requirements should be expanded to cover a wider range of products, beyond those currently regulated under ESPR. National implementation should actively support the rollout of reparability indexes, mandatory access to repair documentation, and design-for-repair principles across all major appliance and electronics categories.

- Establish a repair fund and leverage EPR schemes to fund the subsidies:

  Flanders already supports repair through tools like ecocheques, which help reduce the cost of certified repair services. However, access remains uneven. To ensure broader and more stable support, policy makers could integrate repair subsidises into Extended Producer Responsibility (EPR) schemes, following the example of France's Bonus Reparation. This initiative would lower financial barriers for repair services, making them more accessible to the public. Extended Producer Responsibility (EPR) schemes could serve as a sustainable, long-term funding source for repair subsidies. Currently, such repair subsidies are often constrained by limited public financial resources. By requiring producers to contribute financially, these barriers could be mitigated. Presently, EPR schemes in the EU predominantly focus on waste management, such as recycling and recovery. To address this imbalance, a portion of EPR fees could be allocated to support repair bonuses, ensuring a more stable, reliable, and predictable funding mechanism for consumers and repair businesses.

- Encourage circular practices with fiscal incentives:

  Belgium already applies a reduced VAT rate of 6% for certain minor repair services, such as clothing and bicycles. This does not yet extend to other product groups which are taxed at the standard 21% rate. To further incentivise repair over replacement, the reduced VAT rates for repair services to a broader range of repair activities could enhance the financial attractiveness of repair practices. Additionally, implement tax credits for labour costs related to repair and maintenance activities to further incentivise businesses and consumers to embrace repair over disposal.

- Improve the consumer experience and trust in repair:

  While cost is a known barrier, consumers are also discouraged by long wait times, uncertain quality, and the lack of transparency around repair services. To address this, governments and sector organisations should support the development of certified repair labels, encourage service quality standards, and promote faster turnaround times, especially in high-demand sectors like electronics. Improving the repair experience will help build trust and normalise repair, making it a more attractive option than replacement.

- Ensuring a level playing field in the transition to a repair society:

  The government must adopt a thoughtful and balanced approach to supporting the transition to a repair society. It cannot focus on supporting a single initiative while overlooking others. A level playing field is essential to ensure that all stakeholders have equitable opportunities to contribute to and benefit from the shift towards a repair society. Achieving this requires comprehensive stakeholder consultation to address diverse needs, transparent and inclusive funding mechanisms to fairly distribute resources, and robust monitoring and evaluation of repair policies to ensure their effectiveness and equity.

- Building strategic alliances for stricter CE regulation:

  Circular businesses should continue to invest in building robust networking and lobbying capabilities to advocate for stricter regulations that advance the CE and repair strategies. This involves fostering strong relationships with policymakers, actively engaging in policy discussions, and collaborating with other stakeholders who share a commitment to increasing repair practices. By forming strategic alliances, these businesses can amplify their voice and push for regulatory changes that support sustainability. Stricter CE regulations would provide businesses already advancing in circularity with a competitive advantage.

- Increase awareness of repair options and consumer rights:

  Raise awareness among consumers about repair options and their rights, such as the two-year warranty on products, to ensure they understand they have the possibility to repair rather than replace.

7. Conclusion

The circular economy faces multiple market failures, one of which is the persistent shortage of repair skills. This barrier is unlikely to be resolved by the market forces alone, especially in the short term. Alliances that bring together complementary sectors and support services play a critical role in addressing this gap by activating the capacities within the informal and social economies. This study explores how such alliances support and scale up repair skills in Flanders, with a focus on textiles and large household electrical appliances. The two goods studied (Textile and EEA) illustrate very different repair contexts and challenges, making them complementary for understanding the broader repair ecosystem. Textiles are often lighter, easier to transport, and more suited to decentralised or home-based repair, while large household electrical appliances require specialised tools, in-home visits, or centralised workshops with more complex logistics. By comparing these two sectors, the research shows that alliances need to adapt their approach. For example, balancing informal self-repair with professional services.

While the initiatives analysed are primarily at a pilot or experimental stage, this study highlights that, such alliances make it possible to experiment with different forms of labour activation, skills creation, and knowledge transfer that would be too complex or risky for individual actors to pursue independently. These alliances offer concrete insights into what kinds of collaboration, skill building, and labour organisation might make CE possible in Flanders. This report shows that building a repair society in Flanders requires more than just technical training and upskilling. It also demands soft and social skills, a shift in mindset, infrastructure, and systemic support. Repair skills are not merely technical know-how but are shaped by access to tools, information, supportive environments, and confidence.

According to the literature, the current lack of repair skills should be understood broadly: from the basic awareness that something can be repaired, to knowing where to find a repairer, to having the ability and opportunity to repair an item oneself being either at home, in a community setting, or through professional services.

Our research highlights four interlinked steps that alliances help deliver to scale up repair skills. Each step brings its own unique contributions and challenges. These building blocks, shifting mindsets, developing hard skills, embedding soft skills, and improving operational efficiency, show that developing repair skills is not a linear process. Instead, it is a social journey that must be nurtured through experimentation and long-term commitment. Together, these types show that there is no single blueprint: scaling up repair depends on tailoring collaboration to local contexts, the goods repaired, and the social and economic barriers at play.

- Mindset shift: a repair culture starts with the basic belief that repairing is possible, worthwhile, and even rewarding. Alliances like Herstel Heroes show how working with schools, youth groups, and retired volunteers can make repair visible and appealing to new generations. Hobby repairers and community repair cafés also help normalise everyday repair. However, changing mindsets is slow and requires sustained exposure especially among groups who lack role models for technical skills or see repair as outdated or burdensome. Gender norms, stigma around ‘second-hand’, and lack of time can all limit people’s willingness to repair. This means alliances must not only offer practical repair options but create safe, welcoming spaces where trying and learning is encouraged.

- Hard skills development: building technical competences from diagnosing faults in appliances to mastering textile repairs is core to many alliances. Cases like United Repair Centre or the Horizon Centre show that hands-on, real-world learning combined with accredited training can prepare people for stable repair jobs. But challenges remain: training is often short-term and fragmented; apprenticeships may not match employers’ expectations; and there is a shortage of skilled trainers. For some alliances, finding suitable training content or up-to-date equipment is also difficult, particularly for fast-changing product categories like electronics.
- Soft skills: successful repair work, especially for customer-facing services, relies on strong soft skills like teamwork, communication, planning, and trust-building. Alliances like Herstel Hub Textiel and Kringwinkel Hageland demonstrate how important it is to embed soft-skill coaching into everyday practice, for example by combining repair tasks with language learning or coaching in workplace behaviour. Yet this aspect is often underestimated. People distant from the labour market may need longer timeframes and tailored support to develop these skills, but short project funding cycles rarely allow this. The stigma of social economy pathways can also make transitions to formal jobs difficult.
- Operational efficiency: making repair competitive with replacement requires experimenting with how to repair faster and more affordably, without losing quality. Alliances like Brefurbish and Decathlon-CiLab illustrate how digital tools, better data flows, and standardised workflows can help for example by using AI-based decision support or feedback loops to improve design. But building efficient systems can be resource-intensive. For smaller alliances, developing digital tools, collecting reliable data, or managing complex logistics across sites is a major challenge. Repair services also struggle with unpredictable volumes and demand, which makes long-term planning difficult. This kind of experimentation also requires coordination, resources, and trust. Alliances address these needs by acting as ‘spiderweb’ organisations connecting mindset shifts, skill-building, and infrastructure. Yet this coordination function is often missing in policy frameworks and undervalued.

Nevertheless, some local initiatives such as Circular Flanders already fund experimental projects which foster a collaborative mindset. However, the experience of the nine case studies suggests that local alliances also benefit from more structural, long-term support to manage logistics, pool resources, and connect actors across formal, social, and informal settings. These coordination and bridging functions often fall between missing links in policy frameworks. They are recognised and encouraged through project calls but are not yet fully embedded as a consistent, funded part of the repair ecosystem. Strengthening this coordination role structurally could help address the persistent barriers that limit the growth of the repair economy. Without it, efforts to scale repair would remain fragmented. The experience of the nine case studies suggests that local alliances benefit from support not only to implement projects, but to manage logistics, pool resources, and connect actors across formal, social, and informal settings. These functions help address the structural barriers that currently limit the growth of the repair economy.

Our findings show how alliances tackle structural barriers in practice. They enable repair skills to develop not just through formal courses or training, but also by providing low-barrier, informal learning opportunities and peer support. By combining practical training with soft-skill coaching and confidence-building, alliances help people, including those who are distant from the labour market take on new roles through task-based specialisation.

Alliances also actively explore how to support repair efforts through shared resources, digital tools, or hobby repair spaces. Their ability to bring together formal and informal actors makes them well-positioned to test and refine what works. The alliances studied here already act as experimental platforms, testing different ways to organise repair, and creating conditions for scaling up. Yet the cases also show that moving from pilot to practice is not straightforward. Barriers vary between sectors: repairing textiles is more logistically flexible and suited to home-based or community repairs, whereas large household appliances often require specialised workshops or in-home repairs, creating different training, infrastructure, and business model challenges.

Alliances to scale up repair can only succeed if structural barriers, like limited funding, rigid training pathways, and undervaluation of repair work are addressed. Alliances cannot shoulder the risks and costs of experimentation alone. Experimentation must be structurally supported, with flexible funding for local alliances among organisations that connect partners, create safe learning spaces, and coordinate logistics. Targeted and sustained policy support can play a key role in overcoming these challenges. Practical enablers such as consumer repair bonuses or vouchers, reduced VAT rates on repairs, and more flexible work integration contracts could help make repair more attractive than replacement, while giving people further from the labour market realistic opportunities to build stable livelihoods. For alliances that train people furthest from the labour market, reforming work integration contracts to allow longer learning periods would make skill-building more realistic and stable. The analysis also shows that policies must account for different skill needs, infrastructures and business models when aiming to scale repair across diverse product groups.

The comparison between repair to extend a product lifetime for the same user and refurbishment for resale further underlines that a there are distinct repair practices which require different skills and logistics. Supporting both informal and formal repair that empowers individuals to keep using their own products longer, and refurbishment that prepares items for reuse by others, is key to reach different user groups and product types.

This study, while a snapshot of nine diverse alliances, shows that the persistent shortage of repair skills will not resolve itself through market forces alone. Activating the informal and social economies and backing alliances as experimental spaces are key to overcoming this market failure and ensuring the circular economy can truly deliver on its promise.

Finally, this study has limitations. The findings reflect a snapshot of nine alliances and are context-specific. Some models depend heavily on local networks and trust, which cannot be easily replicated elsewhere without adaptation. More research is needed on how alliances can sustainably connect the informal and formal economy, and how lessons from one sector (e.g. textiles) can be translated to more logistically complex goods like large appliances.

Despite these limitations, the findings show that supporting experimentation and building skills as a social process not just a technical fix will be vital to scaling repair. Alliances are well positioned to lead this. Supporting them is essential if Flanders wants to scale up repair as a viable, inclusive, and resilient part of the circular economy.

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