INTEGRATIVE REFLECTIONS ON SOCIAL, LOCAL, BIOBASED & CIRCULAR CLOTHING: PERSPECTIVES FROM SUSTAINABLE TEXTILE STAKEHOLDERS FROM THE HEREWEAR PROJECT

Anca GHEORGHICĂ, Ph.D
Asociația Mai bine
Iași, Romania
anca@maibine.eu

Rebecca EARLEY
Chelsea College of Arts, University of Arts London*
London, United Kingdom
r.l.earley@chelsea.arts.ac.uk

Rosie HORNBUCKLE*, Ph.D
r.hornbuckle@chelsea.arts.ac.uk

Jesse MARSH
TCBL Association
Amsterdam, Netherlands
chair@tcbl.eu

Laetitia FORST*, Ph.D
l.forst@chelsea.arts.ac.uk

Abstract
This paper explores the integration of social innovation within the circular and biobased textile industry, focusing on the HEREWEAR project—funded by the European Union - aimed at creating a sustainable market for locally-produced circular textiles. The study addresses the gap between the technical and logistical advancements in sustainable fashion and the often-overlooked social dimension. Through interviews with project partners, including researchers, social entrepreneurs, and industry practitioners, the paper investigates their perceptions of sustainability, localization, and social enterprise. The findings reveal diverse views on what constitutes sustainable and socially responsible textiles, highlighting the need for a more cohesive understanding and collaboration among stakeholders. Key themes include the progress and challenges of localizing textile production, the complex social and environmental benefits of such initiatives, and the potential for social enterprises to drive systemic change. The study underscores the importance of integrating human and social factors alongside

technological advancements to achieve more holistic sustainability outcomes for the fashion industry.

Introduction

The research hypothesis in this paper is that, despite the ambitious and specific environmental sustainability goals for achieving material circularity, localization, and low impact production, the *social innovation* dimension is still an ambiguous factor for the stakeholders of the fashion and textile industry.

In this paper the authors suggest that this is not only true of the industry and the academic community in the broadest sense, but also present in the HEREWEAR (HW) project. As the latest EU funding strategy shifts to the Industry 5:0 vision (European Commission 2021) – a social, human lens on future productivity and development in alignment with technical and economic goals - the authors of this paper seek to better understand the potential for positive social change that could be achieved in the biobased and circular textiles and clothing industries. An exploration of the *human* dimension as the main driver for change was undertaken by the authors, through a set of interviews with project partners.

This study was conducted with the aim of directly supporting the HW community - founded as part of the project aims – in its ambition to build capacity for a European market for locally-produced circular textiles and clothing made from bio-based (agricultural biomass) waste. The project brief evolved with the premise that the textile sector can only be truly sustainable if it integrates the social/human dimension, alongside the logistical and technical challenges of *local, circular* and *biobased*.

Textile academics and activists often stress that we need an interdisciplinary, holistic, and integrative approach to sustainability; especially as new dimensions, models and technologies emerge to help the textile industry close its loops (McQuillan 2020); Earley & Vuletich 2015). However, while this was acknowledged by the members of the HW project and community, it was found that they did not necessarily share a common understanding of the meaning of the terminology, intentions or implications. This paper attempts to fill this gap via an exploration of the human dimensions of the HW community, with a retrospective survey on the different visions of sustainability that have guided the work of its members. This retrospective analysis of the actors and

activists working in the field of sustainable textiles is needed for more impactfully developing the sector.

This article first discusses the current relevant literature in the field to date through four themes: sustainability and the textiles-for-clothing industry; transparency and social equity in the clothing industry; the circular economy for textiles for clothing; and the role of the social enterprise business in research projects in the sector. Next, the authors set out their methods, which used qualitative data gathering via 17 interviews with HW project partners with a different background and with interest and activities in various areas of the value chain. In the results and discussion section, the authors explore insights from the interviews which are structured into the following subsections: perspectives on the progress in the textile and clothing industry; the vision for a local textile and clothing industry; how are we thinking about the benefits of localization: environmental, social or economic?; The understanding of the social economy and enterprises amongst circularity researchers and practitioners; and the collaboration potential with social businesses. In the concluding section the authors offers the reader a summary of the key findings and proposes future action to be taken up by others interested in the field of social innovation.

Literature review

Sustainability and the Clothing Industry
Whilst the sustainability of the planet is increasingly explored by a wide range of stakeholders - researchers, authorities, business representatives, policymakers and consumers - the state of the world, both in terms of environmental and social crises, clearly reflects an increase of unsustainable practices that consistently compromise the earth's essential supporting ecosystems. This reality is the direct result of the developed nations persisting in prioritizing economic growth above social wellbeing and environmental preservation, despite scientific findings spanning many years (IPCC 2023).

In order to build sustainable environments and economies, researchers argue that we have the opportunity to redefine business practices by using circular economy and social entrepreneurship models. (EMF 2017). When we consider the textiles and clothing industry – vast in scale and impacts - researchers would say a true metamorphosis is needed. (Fletcher & Grose 2012).

Several stages of the textile supply chain, from harvesting to finishing, impose a high social impact, mostly via low-paid jobs and continuous cases of modern slavery. The fashion industry is (in)famous for exploitative labor conditions. It has become a recurrent topic for academia, and, whilst most lived realities are still under-researched and invisible to us, we now know that they are not only present in the Global South but

are also in developed countries such as the USA, Japan or Europe (CCC 2022; 2020a; 2020b).

While the circular economy has reached "megatrend status", with an enormous increase in the volume of debates and articles - almost tripling over the past five years according to the 'Circular Gap Report' (Circle Economy Foundation 2024:8) - global circularity is still in decline. This recent report indicates that the share of secondary materials consumed by the global economy has decreased from 9.1% in 2018 to 7.2% in 2023—a 21% drop over the course of five years. This is due to production volumes continuing to grow. In the same 5-year period we have consumed over 500 gigatonnes of secondary materials, representing 28% of all the materials humanity has produced since 1900 (ibid).

A Circular Economy for Textiles

As part of overall sustainability targets for the textile industry, circularity is put forward as a strategy to reduce waste and impacts of clothing. The WRAP textile 2030 roadmap (WRAP 2023) which aims for a 50% reduction in carbon, water, and energy use allocates 9% to 12% of impact reductions to the use of recycled fibres in new garments. Reaching a circular economy for textiles doesn't stop at fibre recycling, the Ellen MacArthur Foundation (2017) lays out a range of principles including phasing out substances of concern, increasing clothing utilization, improve recyclability, make effective use of resources and move to renewable resources. This points to the fact that a shift to circularity takes systemic and behavior change as well as technological improvements. Currently, the industry is less than 1% circular, meaning that less than 1% of clothing reaching end of life is regenerated into new textiles or similar value products. The challenges to increasing this number are multiple. Similarly, while repair and upcycling practices are increasing, they remain at an artisanal scale for the most part, in contrast to the large scale of garment production globally. Therefore, understanding and bridging the gaps between small and large stakeholders' aspirations and needs is a key component of a transition to circularity (Forst et al. 2021).

Transparency and Social Equity in Fashion

An underlying challenge to achieving circularity and social equity in the fashion and textiles sector lies in its lack of transparency. Fashion Revolution's yearly transparency index (Fashion Revolution 2023) ranks a range of international fashion brands and highlights the gaps in supply chain transparency. The complexity of fashion production hinders improvement to garment recovery at end of life. The implementation of digital product passports is seen as a promising policy development which can increase traceability, not just in the supply chain to limit exploitation, but also in the products' lifetime to enable lifecycle extension and efficient recovery for recycling at end of life.

<u>The Role of the Social Enterprise Business in Research Projects</u>

Recent reports evidence that research on social enterprise has increased substantially in the last two decades, as the contribution they make to global problems is given more weight, yet it is also acknowledged that the lack of systematization and categorization of knowledge often hinders the advancement of specific research (Jayawardhana *et al,* 2022; WEF 2024). Design and production of fashion textiles which entails a more holistic, social approach has been discussed and visioned in design research for some time (Fletcher and Grose 2012; Earley & Vuletich 2015). EU programs have funded projects that explicitly explore multi-stakeholder collaborations for circular fashion (Tubito *et al* 2018); although the role of the social enterprise partner has most often been the collection charity. The discourse around fashion textiles, circularity and the active making of materials towards social change is beginning to be evidenced (Earley & Hornbuckle 2022). In the HW project this was integrated into a workshop model through the Bio, User, Repair, Reuse, Recycle workshops, hosted by social enterprise partner MaiBine (Earley *et al* 2023).

Methodology

The main corpus of data for this paper was gathered via online and physical interviews with 15 members of the HW project, and 2 workshop participants. The methodological principle of the interview questions was inspired by David Kolb's Circle of Learning (Kolb, 1984) and followed the consideration that the activists/actors *"*views and/or approaches of sustainability were constructed as a result of a process of informal experiential learning determined (also) by actual practices - rather than (only) as a result of 'didactic training' in an academic environment or formal working experiences." (Ibid:21). The interview questions were structured in four categories according to the 4 stages of the learning cycle, as reflected in Figure 1.
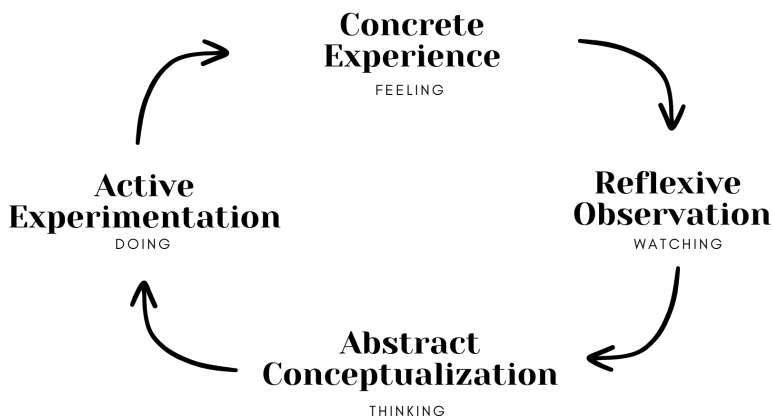

Figure 1. Kolb Cycle
(Kolb, 1984:21)

A total number of 17 interviews were conducted during a period of ten months from 9 October 2023 to 8 July 2024. Table 1 below reflects a summary profile of the interviewees. The interviews were conducted by author1 and then transcribed. A synthesis of the main, most relevant insights was compiled under the four main topics - local, social, the future and perspective of/for the HW community.

Table 1. Summary profile and background of the respondents

	Profession/ Occupation	Type of stakeholder	Field of action/ sector	Country
1	Business developer, Project manager	Private Enterprise	Circular and Biobased Textiles	France
2	President, Project manager, Designer	Non-governmental Organization and Green Social Enterprise	Social Entrepreneurship, Circular Textiles	Romania
3	Researcher	Public University	Design for Sustainable Textiles	United Kingdom
4	Project manager	Private Research Institute	Sustainable Textiles	Belgium
5	Researcher	Public University	Sustainable Design	United Kingdom
6	Researcher	Private Research Institute	Systems analysis and Life Cycle analysis	Sweden
7	Innovation manager	Private Research Institute	Biobased Textiles	Holland
8	Project manager, Designer	Nongovernmental organization and Green Social Enterprise	Social Entrepreneurship, Circular Textiles	Romania
9	Researcher, Project manager	Private Research Institute	Sustainable Textiles	Greece
10	Business developer	Private Enterprise	Circular and Biobased Textiles	Germany
11	Researcher, Project manager	Public Research Institute	Sustainable Textiles	Germany
12	Circular Design Consultant	Private Enterprise	Circular Textiles	Germany
13	Innovation manager	Non-Governmental Organization	Sustainable Textiles and Clothing	France

14	Master student	Public University	Sustainable Fashion and Textiles	United Kingdom
15	Master student	Public University	Sustainable Fashion and Textiles	United Kingdom
16	Researcher, Designer, Project Manager	Public University	Sustainable Textiles, Circular Design	United Kingdom
17	Architect, Industrial Designer	Private Company	Sustainable Textiles and Clothing	Italy

Results and discussion

Perspectives on the progress in the textile and clothing industry
Most of the respondents shared a feeling of enthusiasm rather than fear regarding the future of the industry. However, ambivalent feelings were predominant; without the enthusiasm, they would not be able to continue. Though this positive feeling is often heightened by the fear that the solutions are coming very slowly, and real change or improvement is not yet palpable.

The enthusiasm is mainly given by the myriads of alternative initiatives and the significant volume of people who have joined forces globally and want to contribute to the metamorphosis of the fashion and textiles industries. "This exercise with fast fashion will slowly disappear", mentioned one person. Another expressed that big brands will survive because they have the money. "For small and medium-size enterprises, it will be hard to survive without financial support". The latter interviewee, nonetheless, expressed the belief that in the long run, conventional fashion cannot continue: "it is just a question of time, but the price to get there is paid by the small ones".

Hope is found partially in the evolution of sustainable fashion over the last decades. A researcher in the field shared the opinion that "...the topic has matured, it is more detailed, more concrete, focused, and has significantly changed from the conferences and talks at the beginning of my studies". This positive view on the evolution was shared by other interviewees as well: "...sustainability has become more strategic, less fluffy and more concrete; in the past, there were a lot of buzzwords, but now there are more requirements on having concrete data and concrete standards". Examples of concrete measures are the advancements of European policies such as the Strategy for Sustainable and Circular Textiles and the new regulations regarding extended producer's responsibility (European Commission 2023a), green claims and greenwashing (European Commission 2023b), digital product passports and microplastic pollution regulations (UNEP 2016).

Another major change is the evolving sustainability radar of the companies. While cost is still a big issue, "...companies wanting to change to more sustainable solutions,

without increasing costs…", multiple reflections shared by the interviewees showed the rise of corporate interest in sustainability. For instance: "Now, all the companies care or are obliged to care, they are interested now in our research, whereas in the beginning, about a decade ago, it was not the case at all." "Brands are understanding more. While they were rather curious to learn in the beginning, now they want concrete solutions." Interviewees noted: "The approach to more sustainable practices in companies switched from "nice to have" to "must have" and now they need to prove it, they are held more accountable."

Interviewees also reflected on the progress made over the longer term. "Twenty years ago, there was not so much plastic and polymers, now they are more and more used, and even more composites, difficult to recycle; about 10 years ago the interest started from researchers and about 5 years ago consumers started as well showing interest in sustainable products and were willing to pay a little bit more money to support the environment." "There is a lot of progress, but the context gets worst faster; 10 years ago it was very hard to find people in sustainable fashion; everything (in sustainable fashion alternatives) evolved pretty rapidly."

The progression in language was also noted. Fashion implies perceived obsolescence, an anathema for deep sustainability. From this premise, according to one interviewee, the term *sustainable fashion* is an oxymoron: a contradiction in terms. The same respondent was very positive about the fact that the textile industry can be decoupled from the fashion industry: "…fashion designers often make an argument for their industry, but there are people in this world that can do very well without it, fashion is not at all essential for our future; a lot of opportunities can be opened via this decoupling for sustainable textiles". Not everyone would agree that fashion is not essential, however. Researchers have found that the change in a person's aesthetic appearance is positively linked to mental health (Suganya *et al* 2024).

Other respondents are more critical about the proper advancements in the right direction. For instance, referring to social enterprises, a respondent mentioned that "…in the last decade, we did not advance politically, with no support whatsoever at local or national level. Only European funds are allocated for the social economy; investments needed in sorting and recycling and social economy need to be operationalized to support the social enterprises. Moreover, only very, very recently social and environmental goals of enterprises started to be integrated". In addition, regarding environmental sustainability and materials, one researcher mentioned that *"…not even in professional circles is there still not enough awareness of biobased; people do not yet understand its meaning and its circularity potential."* Consumer behavior is seen as a big challenge as it does not change fast enough and industry claims it continues to drive the acceleration and the volume of production. Technical opportunities might arise to help,

and better policies might be developed, but interviewees widely believed that behavioral challenges that make people continuously buy things must be tackled.

While there is general acknowledgement that education is one of the most impactful avenues to a better future, the answers were divided on the details around this. Some interviewees were rather positive about the future, seeing people becoming more aware, and more interested, in making a change. While others shared viewpoints that there is a long way to go for raising awareness on the hidden costs of industry and determining behavioral changes. As mentioned by an innovation manager from a research institute: "…we need to team up with behavioral scientists to generate the desired change, to assess how people are thinking and how we can transition to more sustainable behavior; we, (..) can develop the most sustainable fiber, clothing item, or system to bring it back, we can make it far more sustainable, however, if we do not take the social and behavioral scientists into account it is completely useless, because you have in parallel to change the behaviors of the consumers."

A shared opinion on how to drive behavioral change is by challenging consumers to individually interrogate the realities of the industry that they buy from, and that this might be driven by climate change concerns. People will rethink their consumption choices, because they will be hit by the reality, unfortunately: "Only a radical change will reset people to rethink their consumption patterns, and the climate urgency might be such a systemic change generator. Still, we might need at least 40 years to see its results".

The vision for a local textile and clothing industry
The interview insights indicate a big permeability of the concept of local that needs to be further contextualized. When referring to an industry, a practice, an identity, a community, etc., as being local, a boundary or a limit must be set. It can be broad, but it must exist. This is the same in the case of the textile industry. According to most interviewees, local is an old word in terms of textile use. For the future industry, if we want to have the full value chain from raw material to the end-product within a local European context, we must extend, spread and involve several regions and more than one country.

This continental size appears as the maximum radius when referring to local, but also as the most realistic one. However, there were conflicting meanings amongst the respondents. For instance, for the ones putting into practice the most popular slogan in political ecology - *think globally, act locally* - the local level of action normally refers to the city or town level. The original semantic of local seems somehow altered and a tension appears between the feeling of an ideal level - city level - 5 to 10 km radius maximum, and the thinking of the realistic level for the entire value chain - continental, European level.

As one respondent underlined: "If I buy it in Stockholm and it was produced in Portugal, with cotton from Turkey it does not feel correct to me to say that it is locally produced." Or as another one mentioned: "You can have a local specialization, but you always want to go to global markets. Only very recently the idea that you produce locally to consume locally emerged again. But if you ask anybody, any of the over 100 HW community members who signed up and put as part of their number one priority to be part of a local production chain, they still want to sell in China if they could."

How are we thinking about the benefits of localization: environmental, social or economic?

According to some community members, we have to approach localization in terms of the availability of natural resources, otherwise, it is very abstract. Then, apart from using biomass resources and circular models, we should also pay attention to transportation distances, the overall uses of energy and raw materials and what and how we give back to nature. We should clarify what the concepts of value and borrowing from nature mean. What returns to earth, what is the real final value at the end of a product's life, and what is our common understanding of value?

The challenging issues of scale are often mentioned by interviewees, and degrowth was invoked by some respondents. For instance, referring to the environmental impact, a project manager and business developer in textile engineering, mentioned that "…too much quantity produced of something is not good, be it recycled or organic, not producing is the best; we have an increase in technology and science for biobased and recycled products, but we cannot say necessarily that it is a good thing."

On the other hand, a designer with experience in social entrepreneurship, referring to the potential for increasing social impact in the industry, stated that "…scale of production influences a lot, impossible to have the control in huge companies, even if you want it, when you have good intentions; we really have to scale down and put a limit on how much a company can grow." Current models indicate that if we want to close the circle on textiles at the end-of-life stage, recycling and sorting facilities need a certain volume to be profitable. This can only happen at the European level. These realities lead to a paradox: while economic degrowth and downsizing are seen as the solution for a better future for the industry, big quantities are needed for running the recycling factories, implying that the economic growth imperative will still have to be followed.

Socially speaking, localization of textile production in Europe implies not only an increase in the number of jobs in the sector but also giving back to the European population means of production embedded in communities that are connected to citizens with an increased quality of life.

The real social benefits envisioned by the interviewees are:

- An increase in opportunities for developing creative skills and abilities
- A less impersonal relationship between producers (all along the value chain) and between producers and consumers
- An increased (and measured) transparency of companies
- Fairer prices paid to farmers and to all the actors working on the first stages of the value chain
- A better awareness of the lifecycle of a product, including its origin and afterlife
- An enhanced sense of belonging, for companies and consumers
- The revival of local tradition and limiting of cultural appropriation

The social and the material are intertwined. As one member of the HW consortium stated, "…you can't think about climate change unless you think about social action." Even with the enormous overlap between climate change and social causes, people are not motivated to act on climate change as much as they are for social causes that are more direct and perceived as less distant. As expressed by one respondent, "…we always underestimate the opportunity in human endeavor and social actions; there is a huge wealth of untapped resources there. Apart from being the right thing to do, people are fed up with acting for big businesses. If they were given the opportunity, people would prefer to act for someone who gives back to them, to their community". An opportunity is seen as well in aligning social issues with climate change for motivating people to act: "People don't do anything if it is only for climate change, they cannot relate to the threat, even though it starts to be felt more real, it is not well received when one spoils the joy of warm autumns reminding [us] of climate change".

As for the economic aspects, localization is seen as a strategic approach to bring back production in Europe, the cradle of fashion and textiles industries, and to increase the competitive advantage of the sector in the old continent. If the economic indicators are prioritized against the environmental and social ones, developing a profitable local economy has a lot to do with the scale at the end of the day. Economically speaking, the main critique for circular craft-based textiles is the lack of scalability. They need a lot of time to assemble and disassemble. It still needs to be explored to see if it can be adapted to industry or commercial scale. As a researcher in circular design stated: "Things that are a bit more exploratory, that don't necessarily directly convert to replacing something made by H&M, but that maybe can get people to think about how materials are made and work, how they can interact and what decorations can mean for them by actually getting their hands on it - a different way of making textiles. They represent a completely different dimension than scaling up and getting commercial." Yet as long as it remains an intense labor practice it's not good for the European businesses that cannot compete with the low prices of production from the Global South.

Local - in a circular way - is challenging not only for garment or fabric making, but for all activities that imply more than one process stage, according to the majority of the participants interviewed. An essential question for the local dimension is the question of the industrial capacity of machinery. Processes and stages need different quantities and have different dynamics. If you look at the production system, different stages of production have different scales, because of the machinery they use. Technically, it is impossible to do circularity in a profitable way that competes with linearity. Usually, when you have automatic production, the output is important, so we have the growth prerogative again. Ideally it would be an on demand, automated production process. In this instance, we must be aware that this technology-provided solution may be in danger of replacing people with machines, leading to less employment in the sector, and to a loss of skills, rather than the increase the sector currently recognizes as desirable on a social level.

However, in the interview data, an emergent field was noted, with the potential to provide new opportunities for circular production: the local biorefinery that uses agricultural waste (biomass), in relatively small quantities, so that they can operate at regional scale. These can potentially produce high value-added products for cosmetics, food additives, medical goods, etc. Many of these outputs could be picked up by local producers. "The value created is so high…", indicated an interviewee that works as innovation manager, "…that all the economic thinking goes out of the window. In a funding proposal I worked on recently, we calculated that we could take agricultural waste for 100 EUR a tonne and your processing outcome stuff can be sold at 1000 EUR a tonne; you don't need to produce at capacity, you can be happy without the imperative of production at 100% capacity, that is an essential part of the overproduction problem."

The understanding of the social economy and enterprises amongst circularity researchers and practitioners
That innovation is a socially constructed ideology, and the social dimension of innovation is in fact the really important element within all new thinking and action, stated a central person involved in building the HW community. However, they referred to the social economy as being quite enigmatic. The enigma metaphor seemed appropriate for the concept of 'social economy', as most of the interviewees stated that they were not familiar with the concept; including one person with an academic background who stated that they had never "…come across it as a term."

The common shared reflections indicated an immaterial perception of the sector as social connections - the interweaving of social capital - close to the concept of a sharing economy. Referring to the social links as the first connotation of the term, several respondents mentioned the need to create a direct relation between all stakeholders

involved in a company: be it employees, collaborators, or suppliers. Ideally, each brand should get to know directly the entity it works with and its workers. Ideally, but "…not easy to get there…", as they underlined that "…in businesses everything is a measure of time and deadlines." Unfortunately, compromises must be made because "…business-wise you cannot wait for years for good social partners…" that appear to many as challenging to identify and choose.

Most respondents expressed statements close to the generally accepted meaning of social economy among the most engaged of the participants*,* be they practitioners or policymakers. They mentioned that it should represent an economy that distributes wealth more fairly, not centralized, *an enterprise that works for the social good*, actively working to support social aspects, such as:

- Work integration: young people who do not have a professional background get a chance to have a job and/or access to space for development; working opportunities for people that have a distance from the labor market; training or education for people who may be stigmatized and/or vulnerable.
- People care: fair prices for farmers, fair wages for employees, being reasonable for most people, workplace ergonomics, provision of a safety net.
- Reviving local communities: a lot of potential through small social enterprises active in the textile industry; a striking example is the one of Greece's small islands where many people lost their jobs and entire small cities and villages were ruined due to the closure of silk factories; via technological advances and simplified production, the social economy is seen as playing a big role in regenerating these communities tributary only to the tourism industry now.
- Craftsmanship revival and preservation of traditions: the sector of social economy, represented mostly by very small enterprises, appears to play a key role in safeguarding traditional craftsmanship and the resurgence of artisanal textiles, impacting substantially the preservation of the cultural heritage and the promotion of sustainable practices within the industry.
- Education and awareness sometimes seen as the primary benefit of social activity, due to the fact that social enterprise practices and spaces remind people that another way to do things – a better world - is possible.

Collaboration potential with social businesses
"It is a given fact that we should look for social enterprises as collaborators…", stated a member of the HW consortium and "…not only for production support, but in packaging, transport, and selling the textile products…", underlined another. While some interviewees share these points of view, mentioning as well that the social approach is fundamental to HW, not all the partners are influenced by the social impact when selecting their partners. In general, the representatives of the entities working with

fabrics stated that they do not necessarily trace their origin or look at the social impact when selecting them. At the most, they referred to externalizing parts of the production such as embroidery, sewing or packaging as a means of collaboration with social actors. The majority see the social actors of the sector being represented by second-hand charity shops and by collecting and sorting service providers for these shops.

Of the entities that do want to prioritize social enterprises, one representative mentioned that "…sometimes we do not have them around, they are marginalized." Another person shared the challenge of identifying genuine social enterprises. There are, it seems, two extremes: enterprises with very ambitious social approaches and goals, that do their best to integrate social practices but not having enough visibility (being perhaps even completely invisible sometimes); and at the other end of the spectrum, companies with big communication power, promoting relatively small acts. Certifications such as FairWear or GOTS do not seem to work, according to some interviewees. This was found to be in line with what a recent report from Clean Clothes Campaign Network indicates (2022).

A win-win relationship must be evolved, as it is not only the social enterprises who benefit from the collaboration, through increased visibility and more market presence, but also the conventional companies caring about sustainability. These reciprocal benefits need to be recognized, and the designers and brands should move on from the paternalistic attitude of the helper of small social enterprises. As a respondent mentioned "…we need to switch the balance around from a technological project that has social elements tacked on; to having the social project initiative and then saying to technology 'help us with this' instead of 'this is the technology we will test and prove, and these guys are going to help us a bit'".

Even the ones considering that we are in a more advanced stage now - that there is a positive change in the sector, with companies starting to realize the importance of transparency to customers and of sustainability reporting including social impact - underline that there is still a long way to go to reach true accountability on the social risks that are connected to the conventional business, let alone working on social benefits for its stakeholders across the entire supply chain.

Conclusions

This study underscores the importance of integrating social innovation into the textile and fashion industry sector. While technological advancements for circularity and localization strategies are vital, the human and social dimensions must not be sidelined.

The research revealed a lack of shared understanding among stakeholders regarding the implications of social sustainability in textile production. A more unified approach that aligns social, environmental, and economic goals is crucial for driving meaningful change.

The findings suggest that collaboration with social enterprises offers significant potential to enhance transparency, fair labor practices, and local community engagement. However, challenges remain, including the need for policy support and the alignment of stakeholders' diverse visions of sustainability. Moving forward, a deeper focus on the social impact of textile circularity and increasing efforts for stakeholders' education will be critical in building a truly sustainable textile industry. This approach not only benefits the environment but also fosters social equity and community resilience, setting a precedent for other sectors to follow.

References

Circle Economy Foundation (2024). *The Circularity Gap Report 2024.*
https://reports.circularity-gap.world/cgr-global-2024-37b5f198/CGR+Global+2024+-+Report.pdf.

Clean Clothes Campaign (2022). T*he intersections of Environmental and Social Impacts of the Garment Industry*.
https://cleanclothes.org/file-repository/the-intersections-of-environmental-and-social-impacts-of-the-garment-industry_aug-2022.pdf/view.

Clean Clothes Campaign (2020a). *Out of the Shadows: A spotlight on exploitation in the fashion industry.*
https://cleanclothes.org/file-repository/ccc_dci_report_outoftheshadows_sept2020_highres.pdf/view.

Clean Clothes Campaign (2020b). *Made in Japan Report.*
https://cleanclothes.org/file-repository/ccc-made-in-japan-report.pdf/view.

Earley, R. (2020). Circular Fashion 2070: Clothing & Textile Cycles, Systems & Services. In *The Bridge: Linking Engineering and Society*. National Academy of Engineering, 50th Anniversary Issue, 45-47.

Earley, R., Forst, L., Sandu, E., Spataru, A. (2023) *Bio TEN BURRR: Exploring current use, reuse, repair and recycling practices for bio-based clothing towards guidelines for circular fashion designers.* Crete, 19-21 June.

Earley, R., Vuletich, C. (2015) *Holistic Fashion Design: My Inner/Outer Journey - Elin Lindquist's Acceptance Speech for the Nobel Peace Prize in 2030* in *Fashion Design for the Curious: Why Study Fashion* by Vaidya, K. Curious Academic Publishing, Australia.

Earley, R., Hornbuckle, R. (eds) (2022) *Design Materials and Making for Social Change*. *Design Research for Change* series by Paul Rodgers, Routledge. ISBN: 978-1-032-16826-5.

Ellen MacArthur Foundation. (2017). A New Textiles Economy: Redesigning fashion's future. http://www.ellenmacarthurfoundation.org/publications.

European Commission (2021) *Industry 5.0: A Transformative Vision for Europe*. ESIR Policy Brief No. 3. Directorate-General for Research and Innovation Directorate G – Common Policy Centre Unit G1 - Common R&I Strategy & Foresight Service. Brussels.

European Commission (2023)(a) *Circular economy for textiles: taking responsibility to reduce, reuse and recycle textile waste and boosting markets for used textiles.* https://ec.europa.eu/commission/presscorner/detail/en/ip_23_3635.

European Commission (2023)(b) Proposal for a Directive on Green Claims. https://environment.ec.europa.eu/publications/proposal-directive-green-claims_en

Fashion Revolution (2023) Transparency Index. https://issuu.com/fashionrevolution/docs/fashion_transparency_index_2023_pages

Fletcher, K. and Grose, L., (2012) Fashion & Sustainability: design for change. London: Laurence King Publishing.

Forst, L., Vladimirova, D., Williams, D., Evans, D., (2021) Re-Modelling Fashion through Scenario Planning: Conceptual scenarios informing design practices, *6th International Conference on New Business Models: New Business Models in a Decade of Action: Sustainable, Evidence-based, Impactful*, Halmstad University, Sweden.

IPCC (2023) Climate Change 2023. AR6 Synthesis Report. Intergovernmental Panel on Climate Change. https://www.ipcc.ch/report/ar6/syr/.

Jayawardhana, K., Fernando, I., Siyambalapitiya, J. (2022) *Sustainability in Social Enterprise Research: A Systematic Literature Review*. SAGE Open. July-September 2022: 1–10. DOI: 10.1177/2158244022112320.

Kolb, D. (1984). *Experiential Learning: Experience as the Source of Learning and Development,* Englewood Cliffs, NJ: Prentice Hall.

McQuillan, H. (2020) *Zero Waste Systems Thinking: Multimorphic Textile-forms.* PhD Thesis. Edited by L. Hallnäs. University of Borås.

Real, M., Earley, R., Goldsworthy, K. (2018) *Practices, Places, Projects: Enrolling Stakeholders for Circular Fashion,* Global Fashion Conference Proceedings. In: *What's Going On?* Global Fashion Conference 2018. www.gfc-conference.eu. ISBN 978-989-54263-0-0.

Suganya, S., Rajamani, K., Lakshmi Buvanesweri, S. (2024) *Examining the Influence of Fashion on Psychological Well-Being: Investigating the Correlation between Apparel Selections, Self Confidence, and Mental Health*. International Journal of Research and Analytical Reviews (IJRAR). Volume 11, issue 1.

Tubito, C., Earley, R., Ellams, D., Goldsworthy, K., Hornbuckle, R., Niinamaaki, K., Ostmark, E., Sarbach, V., Tantu, M. (2018) *Applied DDMI: A White Paper on how Design-Driven Material Innovation Methodology was applied in the Trash-2-Cash Project.* Trash-2-Cash project white paper. EU H2020.

UNEP (2016) *Marine Plastic Debris and Microplastics: Global Lessons and Research to Inspire Action and Guide Policy Change.* https://www.unep.org/resources/publication/marine-plastic-debris-and-microplastics-global-lessons-and-research-inspire.

WRAP (2023) Textiles 2030 Annual Progress Report. https://www.wrap.ngo/resources/report/textiles-2030-annual-progress-update-2022-23.