



SECOND-HAND CLOTHING TRADE: ACHIEVING CIRCULAR ECONOMY IN THE FASHION SECTOR THROUGH INTERNATIONAL COOPERATION

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Highlight

The import and export of second-hand clothing require international cooperation to overcome circularity gaps and reduce the associated environmental and social issues.

Abstract

This paper explores the global dynamics of second-hand clothing (SHC) in light of the circular economy to identify gaps and suggest pathways to reduce negative impacts on the sector. The analysis identifies current global patterns of SHC international trade and the main hotspots, in order to build a framework for action. The framework incorporates the main stakeholders and a set of actions aimed at reducing the environmental and social issues associated with the international trade of SHC. The analysis suggests that the framework may reduce risks and facilitate the transition to a just circular economy in the SHC sector.

Keywords

Circular economy; sustainable fashion; second-hand clothing; international trade; cooperation.

Introduction

Sustainability and (ultra) fast fashion

In recent decades, studies have shown that current consumption patterns are contributing to environmental degradation and natural resource depletion, endangering both the global equilibrium and well-being. Production and consumption are based on a take-make-dispose model, associated with increased material extraction and waste. Accordingly, the global material footprint has been growing, with research estimating an increase of 113% between the years 1990 and 2000, outpacing growth in population and economic output [1]. Annual waste generation is also showing an upward trend, and scholars have estimated that it will increase by 70% between 2016 to 2050, achieving a final level of 3.40 billion tonnes [2]. These trends reflect that contemporary patterns of consumption have become a threat to sustainable ways of living. The 2030 Agenda of the United Nations emphasises the importance of moderate levels of consumption and production, to achieve sustainable development [3]. Sustainability further implies the minimal use of natural resources and toxic materials and the minimal emission of waste and pollutants over the product life cycle [4]. Therefore, there is an acute need to transform consumption and production through a more efficient use of resources and the reduction of waste.

Fashion is a key sector for sustainability efforts due to its significant environmental and social impact. Studies have shown that many practices throughout the value chain are unsustainable due to their high resource usage and waste generation. In more detail, scholars have estimated that the fashion sector is responsible for 8 to 10% of CO₂ global emissions [5]. Additionally, the sector uses a large amount of fresh water for different processes in the value chain, and this water is subsequently discharged without treatment, with a significant impact on aquatic ecosystems [6]. Textiles further account for approximately 9% of annual microplastic losses to oceans [7]. Moreover, the apparel industry has been criticised for its poor performance on social sustainability markers with regards to human rights and labour conditions [8]. Despite the above-mentioned issues, the fashion sector continues to grow, driven by rising consumer demand. Currently, an average of 26kg of textiles per person are consumed each year in European households, and approximately 11kg are discarded [9]. Studies have estimated

that, by 2030, the consumption of clothing and footwear will increase by 63% [10]. The 'fast fashion' phenomenon has contributed to accelerating these consumption patterns. This model, which is characterised by a high number of product collections each year, stimulates overconsumption and the frequent replacement of garments, leading to significant textile waste. As a result of affordable prices and the drive for newness in the fashion sector, clothing consumption has doubled over the past few years, whilst the utilisation of garments has decreased [11]. Moreover, the emergence of so-called 'ultra-fast fashion' has placed the achievement of a sustainable fashion industry at further risk. Ultra-fast fashion is characterised by the provision of fashion items at an even faster pace relative to fast fashion [12]. While fast fashion introduces 2,000 to 11,000 garments to the market annually, ultra-fast fashion introduces 11,000 to 200,000 garments, supported by lead times as short as only a few days [12]. Thus, while ultra-fast fashion might present some advantages in terms of material efficiency (i.e., reduced inventories, local production, on-demand manufacturing), the large number of items introduced to the market encourages overconsumption, creating new issues in the sector.

Currently, the end-of-life (EoL) phase in the clothing life cycle demonstrates low sustainability, driven by the excessive waste generation attributable to fast and ultra-fast fashion. According to some sources, only 20% of clothing is reused or recycled at the EoL, with the rest deposited in landfills or incinerated [13]. The linear consumption model that is currently evidenced in the fashion industry is not sustainable. Rather, production and consumption models must be redesigned to decelerate resource usage and waste generation in this industry.

Circularity Gaps in the Fashion Sector

The circular economy (CE) represents an alternative to the linear economy model, aligned with environmental sustainability and economic development [14]. Specifically, the model aims at maintaining materials' economic and environmental values for as long as possible, through recirculation, prolonged usage or reuse [15]. This is accomplished via three main principles (i) 'designing out' waste and pollution, (ii) keeping products and materials in use and (iii) regenerating natural systems [16]. Thus, these processes serve as effective guidelines for strategies aimed at transforming production and consumption systems. For technical cycles, the CE proposes different strategies to minimise systematic leakage and negative externalities [16]. The aim is to ensure materials and products are recirculated for as long as possible, by maintaining or prolonging product lifespans, refurbishing or remanufacturing, and recycling [17].

The European Commission aims at scaling up the CE to reach mainstream economic players, in order to support efforts to achieve a climate-neutral society by 2050 and decouple economic growth from resource use [18]. The EU New Circular Economy Action Plan classifies the textile industry as a target sector for such initiatives, since it is among the most resource-intensive sectors and has high circularity potential [19]. To date, some implementations of the CE have emerged in the fashion sector. Resale, rental, repair and remake are increasing. Such business models have the potential to grow from a current market share of 3.5% to achieve 23% of the market by 2030 [20]. However, despite the interest of many stakeholders in moving towards a circular fashion industry, the sector faces numerous challenges. The following section explores a relevant gap in the transition to a circular textile sector, represented by the international second-hand clothing (SHC) market.

Issues in Current Circular Schemes: International Trade in Second-Hand Clothing

The past decade has seen several developments in circular strategies in the fashion sector. Among these, some frameworks have focused on reducing environmental impacts through material recovery (e.g., 'design-for-recycling' strategies [21]), while others have employed a life-cycle perspective to improve production practices and reduce the risk of harm [22]. Still other circular strategies have explored ways of recycling textile waste. However, due to the complexity of these processes and the fact that most of the materials in clothing are mixed [23], less than 1% of clothes are actually recycled as clothing [24]. Sandin and Peters [25] concluded that, in many studies, reuse has been considered more environmentally beneficial than recycling. For this reason, the recovery, redistribution and reuse of garments have been emphasised as the most sustainable and circular alternatives with the lowest environmental impact. However, despite efforts to engage in these activities, the fashion sector still faces many challenges. One of these is the EoL of products, when observed through the lens of global networks.

Economic globalisation has changed the dynamics of value chains. According to the UNCTAD, 80% of international trade is structured through global production networks [26], representing 'organizational platforms through which actors in different regional and national economies compete and cooperate for a greater share of value creation, transformation, and capture through geographically dispersed economic activity' [26]. This fact is useful for unveiling some of the gaps in the CE framework linked to the current imbalance

between garment consumption and production. The fashion supply chain is built upon a complex set of operations (e.g., cultivation and creation of raw materials, fibre processing, clothing manufacturing) that are frequently carried out in different parts of the world [27]. Thus, a global production network approach may contribute insights into the CE and sustainability of the fashion industry by shedding light on the dynamics of the international trade in SHC.

While much previous research has explored the CE concept, less attention has been given to its social dimension, relative to its environmental aspects [28,29]. In particular, only a few studies have analysed the relevance of international trade to circular models. However, researchers have started to explore asymmetries between the Global North and Global South in different sectors (including the fashion industry) [30,31], highlighting the limitations of current models of international trade – particularly in the export of waste, which poses environmental and social justice issues.

Government bodies have also begun to acknowledge the implications of unsustainable practices in the fashion sector. As an example, the European Commission envisioned a pathway to sustainability and circularity in the textile sector by the year 2030 [10], addressing several issues, including improvements in garment durability, green claims assurances, and EoL strategies (i.e., repair and recycling). More recently, a harmonised Extended Producer Responsibility (EPR) scheme for 2030 across European states was proposed. Additionally, the proposal for the amendment to the Waste Framework Directive [32] outlines problems linked to the sorting, commercialisation and export of used textiles, highlighting the need for greater consistency in waste classification and harmonised quantification systems across the region. These legislative initiatives indicate the need for a deeper understanding of current issues pertaining to circular models at the international level, identifying risks and opportunities for closing the loop in the textile sector.

Methods

This section describes the methodology employed for the current research. The study was based on desk research, integrating different qualitative and quantitative sources to gain a broad understanding of the issue. The research proceeded in three main stages: (i) identification and review of the relevant literature, including the scientific and 'grey' literature; (ii) analysis of data from trade databases and (iii) definition of a framework for action based on the results of the analysis. The first stage involved the identification and review of the relevant literature. In this process, grey literature provided an important source of information, given the increased attention to the fashion sector evidenced by NGOs and civil society organisations in recent years. The identification of relevant literature (both scientific and grey) was guided by the aim of deepening our understanding of trajectories of SHC market and relevant stakeholders throughout the value chain.

The second stage involved the analysis of trade statistics, using the United Nations Comtrade database [33]. This database provides detailed global trade statistics for individual products and trading partners, shedding light on the dynamics of global trade in the SHC. The database employs a specific 'Harmonised System Code' (HS Code 2017) for 'used textiles' (No. 63), referring to 'Textiles, made-up articles; sets; worn clothing and worn textile articles; and rags'. Since the focus of the research was SHC, the analysis used data specifically from subsection (No. 6309), describing textiles in the form of 'worn clothing and other worn articles', while excluding other subcategories (e.g., bed and table linen, curtains, blankets, travelling rugs, furnishing articles, tents, rags). Due to data asymmetries with regard to import-export value, an additional analysis was conducted comparing bilateral SHC trade values in an effort to shed light on the observed differences.

In the third stage, all of the collected data were analysed to classify the main issues in the value chain and their relative levels of risk. This analysis informed the development of a framework for action accompanied by a set of recommendations. The framework was organised according to individual agents and their potential areas of intervention.

Results and Discussion

International Trade of SHC: Trajectories and Trends

Before proposing alternative practices aimed at increasing the sustainability of the textile sector, it is important to first acknowledge the environmental and social impacts of all steps in the value chain, including post-consumption, and issues associated with current models of circularity from a global perspective. This section presents the results of the analysis of the literature and trading statistics to determine common trajectories in the international trade of SHC. Additionally, it reveals some global asymmetries in the SHC trade flow. Finally,

it explores relevant cases to illustrate important facets of the issue. Excess clothing production and consumption driven by fast and ultra-fast fashion models is the starting point for the global network. In the Global North, discarded items become raw materials for the value chain, with “a vast surplus of used clothing” [34] deposited in the Global South, creating complex dynamics that will be further discussed below. Figure 1 illustrates the stages of the fashion value chain, also showing the geographical locations in which operations occur. It can be observed that, while most of the manufacturing processes are located in the Global South, the products are generally consumed in markets in the Global North – particularly within the United States, the United Kingdom and the EU [5]. This indicates an unbalanced distribution of environmental impacts in the production phase. In addition, once unwanted garments are discarded by consumers in the Global North, there is a high probability that they will travel to the Global South as second-hand items.

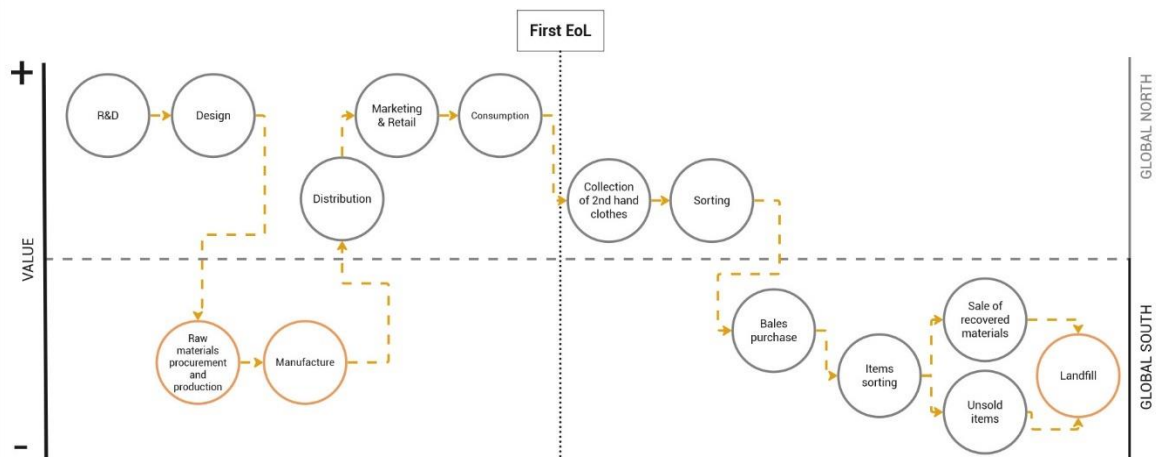


Figure 1. Stages of new and second-hand garments. *Source: own elaboration based on [5,34–37].*

Trajectories: From donation to markets in the Global South

A closer look at the SHC market reveals intricate nodes within a larger global network. Research has identified some of the issues regarding the international trade of SHC, highlighting a dominant trade flow from the Global North to the Global South [34,37,38]. However, the dynamics of the trade activities, as well as the involved agents, have been here analysed with the aim of proposing some cooperation strategies. From the different sources analysed, we were able to unravel the complexity of the international trade of SHC, identifying the main actions and the points at which significant issues arise. Figure 2 presents a synthesis of the findings, illustrating the relevant steps taken by SHC goods from the collection point to the final destination.

Typically, collection occurs in the Global North – normally as a donation [34,36]. These goods are later commercialised when charities sell the majority of the donated goods to private companies, which subsequently export them [39]. Recently, for-profit organisations (particularly in the United Kingdom) have begun to systematically collect SHC, often through textile banks or door-to-door collection [40]. Where SHC is donated to charities, the charities conduct an initial selection of the goods, keeping the best quality items for direct-to-consumer sale and selling the remainder to wholesalers, who initiate a new sorting process. Some companies outsource their sorting processes to operators in other countries [36,41], in order to minimise costs. However, the energy required to transport the merchandise abroad adds to the carbon footprint.

The classification of garments prior to export has become a complex process. Items must be ranked in quality to determine their potential for local resale or, conversely, their potential for export due to specific characteristics. Some companies employ up to 400 categories in their sorting process [37]. The sorting aims at determining a grade for the quality of items to determine their final destination: items with better quality reach higher-value markets (i.e., East Europe) while those with lower quality reach countries in the Global South (i.e., African countries, Pakistan, Syria) [34]. Although sorting centres have operational rules, their sorting process remains unclear, particularly for importers and local buyers of second-hand clothing.

Sorting and exporting (in the form of bales weighing up to 50kg) is a high-risk activity, due to information asymmetry. Exporters, who design and manage the textile sorting system, hold significantly more information about the characteristics and quality of the items they are selling than the customers who are buying them [42]. Since bales of SHC are sold ‘closed’, buyers are unaware of what they contain, often with negative effects. Studies have shown that buyers of bales often declare that a large proportion of the contents lack sufficient quality for

sale. Thus, there is a high probability that retailers will discard unsellable items. For example, Rivoli found that many retailers obtained 90% of a bale's value from only 10% of the content [37]. Similarly, Brooks observed that, since the quality of donations is very limited in the United Kingdom, textile merchants commonly include low-grade clothing in high-quality bales in an effort to maximise profit [34]. Such practices hinder the possibility of achieving a fair CE. Improving information symmetry would not only ensure that buyers get what they pay for, but also reduce shipping waste.

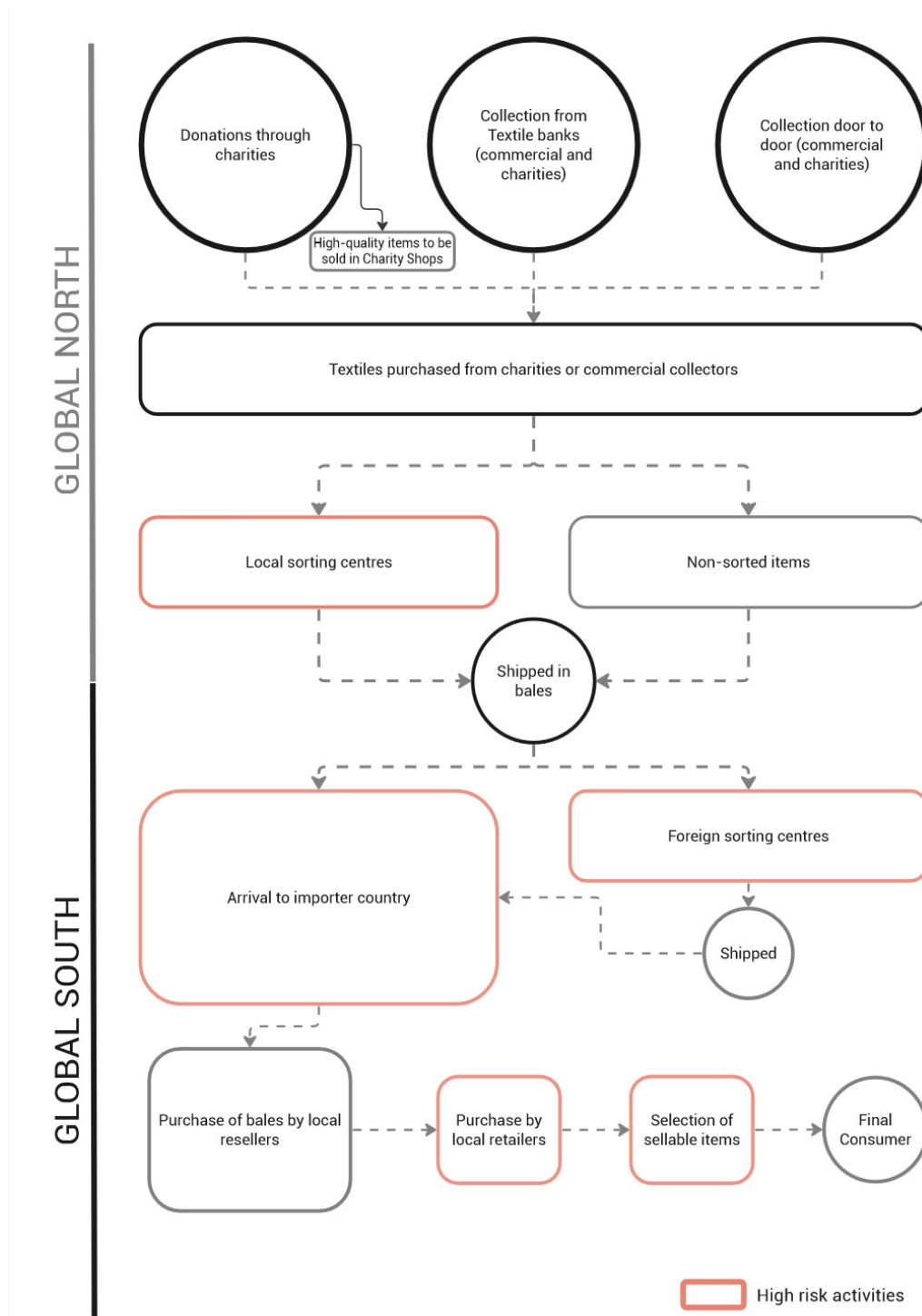


Figure 2. The trajectory of second-hand imported clothing. *Source: own elaboration based on [34,36,37,40].*

Our analysis of the flow of imported SHC highlighted the main risks to achieving a closed loop in the value chain. Figure 3 shows a circular model for goods on the outer circle and, on the inner circle, the real cycle of imported SHC. As previously discussed, SHC does not travel along a closed loop. Instead, many items are discarded during the first process of sorting and, after the bales are acquired by local retailers, more items are discarded in a second process of selecting garments with resale value.

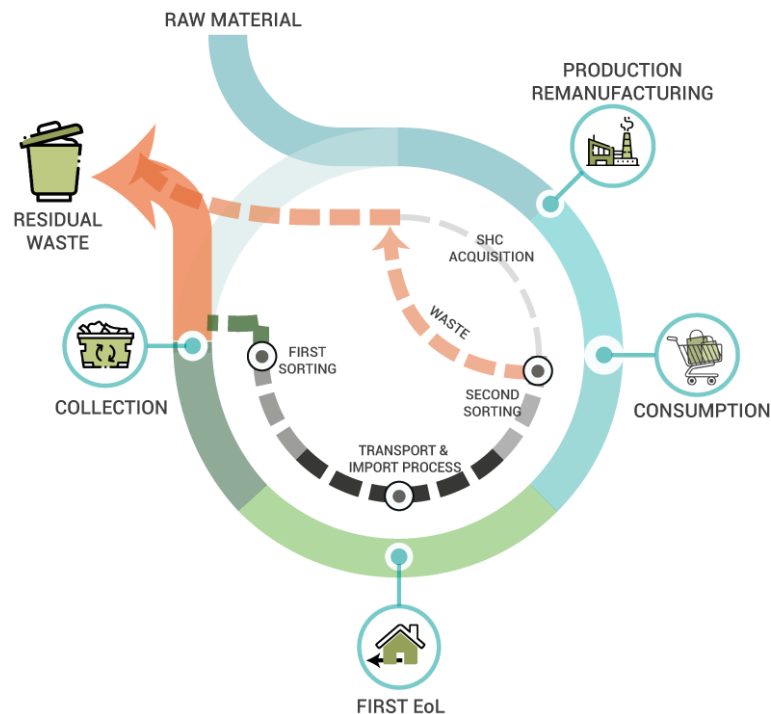


Figure 3. Circular model and the trajectory of second-hand clothing. *Source: own elaboration using Freepik sources.*

Due to the large amount of clothing arriving in destination countries and the constant decrease in clothing quality, it has been estimated that up to 40% of each imported bale ends up in a landfill within a week of receipt. However, one recent field study observed that, in a bale containing 200 garments, only 7 items were considered sellable [43], with the remainder (95%) sent straight to a landfill or illegally dumped. Such numbers help to illustrate current environmental burdens linked to this industry.

Some regions have developed more fair ways of trading SHC. For example, in an effort to reduce the information asymmetry between exporters and importers, Igbo apprentices from West Africa sent apprentices to British exporting companies to inspect items and select those with the greatest probability of being successfully commercialised [42]. Despite the effectiveness of this strategy (in which the importer becomes an active agent of quality assurance), it is infrequently operationalised within the sector, and there are few other alternatives.

Evidence of an Increasing Problem: Trends in the International Trade of Second-Hand Clothing

An analysis of trade data from the UN Comtrade database – specifically with regard to category 6309 (i.e., ‘worn clothing and other worn articles’ [33] – aimed at identifying the scale of global imports and exports of clothing over the past 10 years. Figure 4 shows the trend in SHC trade between 2011 and 2021, showing a steady increase in both imports and exports over the period, with the exception of the year 2020, which documented a decrease in both exports and imports. This outlier presumably relates to the restrictions on international trade associated with efforts to counteract the spread of COVID-19 as other studies have found significant effects of this phenomenon on international trade [44]. However, the global trade in SHC increased significantly in 2021, showing that, despite the slowdown in 2020, the value of imports and exports quickly recovered, and the upward trend continued.

Of note, Figure 4 also shows significant differences in the reported values for imports and exports. This phenomenon, known as ‘bilateral asymmetry’, is frequently observed in official statistics. While there are many reasons for such asymmetry, it is commonly attributable to differences in the valuation of goods. Considering

SHC, imports usually include the cost of insurance and freight (CIF), while exports are valued free on board (FOB). However, this variation does not account for the total difference observed in the final quantities, as CIF and FOB margins typically account for approximately 5% of the total value [45], whilst the data for 2011–2021 show an average difference of 22.11%. For this reason, an additional analysis was conducted, comparing the values reported by each country via bilateral trade data for tracking value differences in each import-export transaction, in an effort to identify the source of the observed differences ¹.

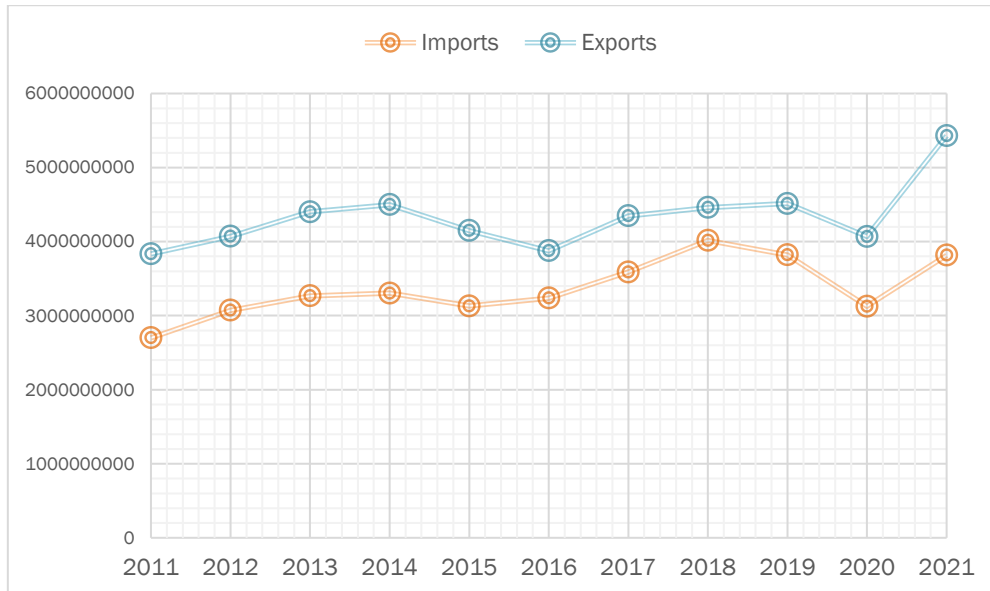


Figure 4. Second-hand clothing global trade value (USD) in the years 2011–2021. *Source: own elaboration based on UN Comtrade data.*

Although this was not the central focus of the analysis, the results helped us to identify issues in the SHC international merchandise trade statistics. Asymmetry in trade statistics is a central concern, as it can lead to misconceptions about trade balances [46]. With respect to the present analysis for the SHC market, the largest asymmetry was demonstrated in the years 2014 and 2015 between Mexico and the United States, whereby the United States reported a large SHC export value while Mexico consistently reported a value of 0 for SHC imports from the United States. Since SHC import is illegal in Mexico, this asymmetry may indicate that illegal imports took place. Another case of consistent asymmetry occurred between Ghana and the United Kingdom, with the United Kingdom reporting a larger export value compared to the import value reported by Ghana. Finally, another interesting case emerged between the United States and Chile, with the United States consistently reporting greater export values than the import values reported by Chile. Although no reason can be identified for such asymmetries from the numerical data alone, the asymmetries may nonetheless point to problematic transactions, especially when they persist over multiple years.

The UN Comtrade data contains not only trade values but also trade quantities. In the case of textiles, quantity was measured in kilograms. Since the present study aimed at identifying the amount of waste derived from the international trade of SHC, we also tracked patterns in the quantity of traded clothing, in consideration that this quantity might not be linked to the financial value of the imported goods. In this analysis, asymmetry once again emerged between the declared exports and imports. As shown in Figure 5², the declared imports were lower than the declared exports. This asymmetry may be linked to the factors previously mentioned (i.e., underreported activity, illegal trade). The literature on waste trade (and particularly SHC trade) describes that illegal imports may occur on borders with weak regulatory measures and in countries that have banned the importation of SHC [36,47]. However, such asymmetries are not visible in Figure 4. This might be explained

¹ For this analysis, the import and export data were processed using R Studio, which generated the differences in value reported by the exporting versus importing countries, including the bilateral trade flows of all countries.

² For this analysis, Mozambique was excluded, as the reported amount for this country was not coherent with the other reported numbers in the data.

by either difference in the prices per kilogram reported by the exporting and importing countries or a loss of monetary value during the process of importation.

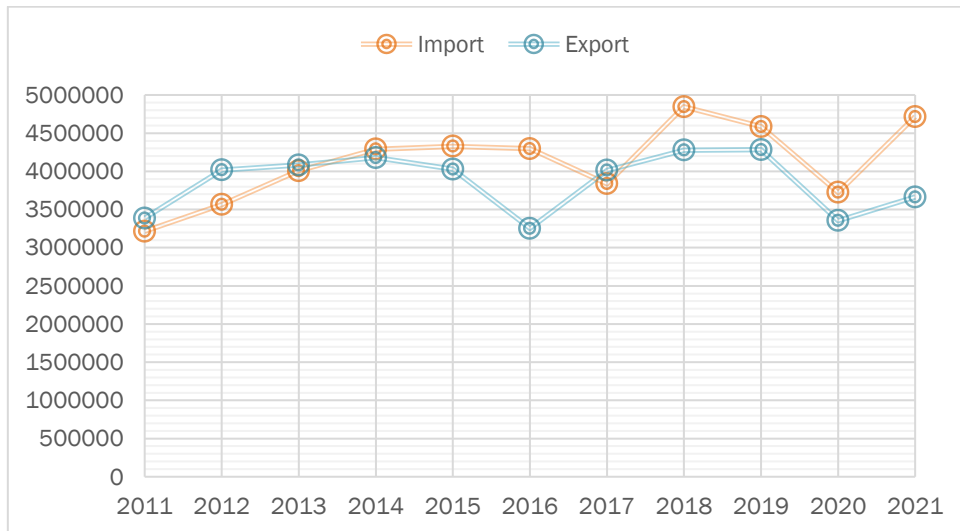


Figure 5. International trade of second-hand clothing by weight (tonnes) in the years 2011–2021. *Source: own elaboration based on UN Comtrade data.*

Both figures (i.e., Figures 4 and 5) contribute to a full picture of SHC trade. What is remarkable is that, despite any asymmetries they reveal, both point to a similar trend: SHC trade has consistently grown (aside from in 2020, when all trading activity decreased). In addition, the combined data on value and volume suggest that, although patterns can be identified, the quantification of clothing imports and exports must be improved, in order to generate a precise picture of activities in each country. The observed asymmetries further highlight the need for an improved and shared system for collecting and reporting relevant statistics.

In terms of the leading export countries, the results of the present analysis corroborate previous research, showing a dominant SHC trade flow from the Global North to the Global South [34,38,43]. However, some new insights may also be gleaned. As shown in Figure 6, the top exporting countries remained relatively stable between 2015 and 2021. In particular, the United States was the main global exporter from 2015 to 2020, followed by the United Kingdom, Germany and the Republic of Korea (all located in the Global North). China represented the sole exception to this pattern as a dominant exporter located in the Global South. This country has rapidly increased its export volume, and the value of its exports has also risen significantly in line with its economic power. This generates uncertainty about the SHC trading situation and its potential environmental and economic impacts, due to the complexity of multilateral international cooperation.

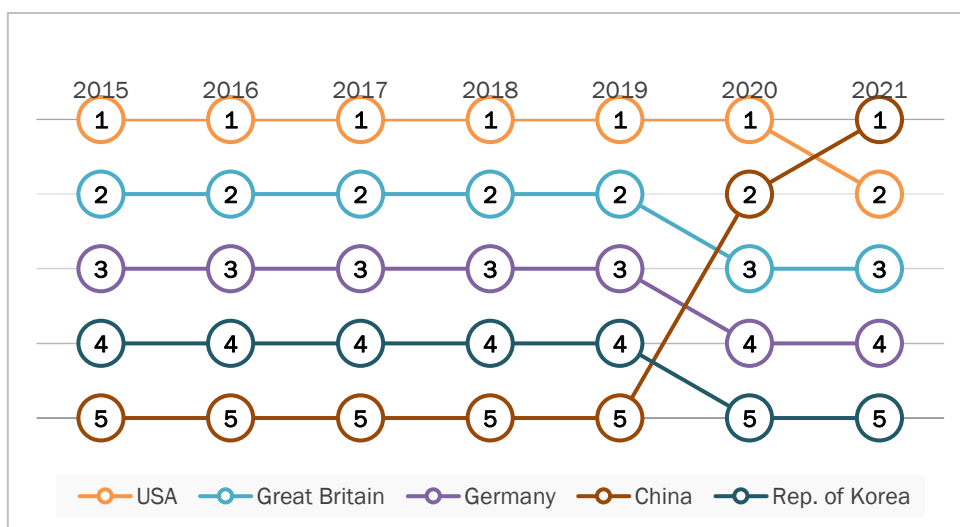


Figure 6. Main exporter countries in the years 2015–2021 (according to value). *Source: own elaboration with data from UN Comtrade.*

Figure 6 further shows that the top exporting countries were dominant throughout the entire period. In the year 2020, most SHC was exported by only 24 countries [48]. Considering also that the leading exporting countries make use of specific geographically and economically convenient trade routes [34], the data helped us to consider specific cooperation frameworks by region, taking into account the characteristics of the involved parties. Different global regions face similar situations, but two countries that have gained recent relevance by increasing their SHC imports are Ghana and Chile. Figure 7 presents the import data for both countries in the years 2007 to 2018 (the latest available data), which show an upward trend (particularly pronounced in the case of Chile). To estimate the potential impact of increased imports on these countries, it is essential not only to acknowledge the recent surge but also to consider the cumulative effect on textile waste resulting from imports that do not achieve a second use. This situation poses a risk for these countries, as well as for others experiencing a rising trend in SHC imports."

Between the 1980s and 1990s, economic liberalisation policies emerged in both Chile and Ghana. These policies helped to open the respective markets to foreign goods, including second-hand items. In Chile, restrictions on the import of second-hand items were – and continue to be – very limited [49]. Ghana also has nearly no restrictions on trade in SHC, except for one prohibiting the import of undergarments. From these examples, it can be concluded that certain characteristics may make countries more vulnerable to issues caused by a surplus in SHC imports and their associated waste.

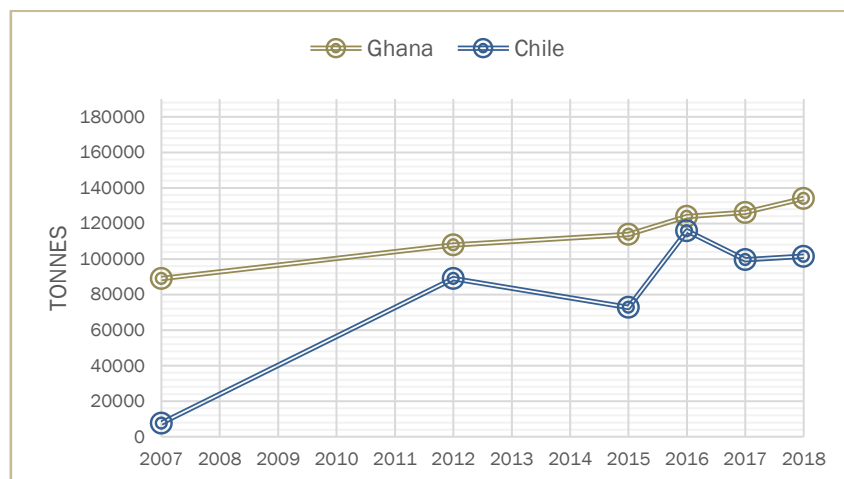


Figure 7. Total imports for Chile and Ghana (2007, 2012, 2015–2018) in weight (tonnes). *Source: own elaboration with data from UN Comtrade.*

Both lesser-developed and developing economies face several market issues, including a lack of formal contract enforcement and information sharing, unorganized retailer systems and low consumer awareness of products [50]. In addition, waste treatment capacity in developing regions is very low [51], due to a lack of resources to establish the required infrastructure [52,53]. Given insufficient infrastructure and a lack of resources to properly treat waste, water bodies in these areas are often polluted with imported items that have not been sold [54]. Indeed, clothing arriving in destination countries can generate a great burden for local authorities, if the quantities of textile waste are unmanageable. More research is needed to better understand the implications of the second-hand market and generate policies aimed at establishing just and sustainable international trade activities under these conditions.

According to Brooks [41], different factors influence the export destination for SHC, including transportation costs, local political contexts and trade liberalisation. In many cases, and as previously discussed for Chile and Ghana, the market liberalisation that occurred widely in the 1980s boosted SHC imports through the removal of trade restrictions. According to the analysed data, the top exporter countries have remained the same since the beginning of the 2010s [33], thereby providing support for Brooks's identified factors in import-export dynamics.

Ongoing Discussion on the International Trade of Second-hand Clothing: Benefits and Negatives

The complexity of the international SHC trade has been shown in previous sections. It is precisely this complexity that fuels ongoing discussion about whether the economic benefits prevail over the environmental and social

negatives associated with this activity. Some studies have explained that SHC imports benefit importer countries by providing access to affordable garments for those living in conditions of poverty and by generating new jobs in retail and importation [55,56]. In East African countries alone, the used clothing sector has created approximately 355,000 jobs, supporting 1.4 million people [39] and improving livelihoods.

In terms of granting access to clothing, trade in SHC may be considered positive. In Africa, worn garments are the major source of clothing in many countries. In Uganda, for example, 81% of clothing purchases are of second-hand items [34]. However, studies highlighting the benefits of increased access to clothing have generally failed to address the dependency that second-hand imports create on internal markets. Of note, research has shown that the benefits of SHC trade may fail to consider its impact on the high-value creation activities occurring in the Global North. However, recent studies have begun to identify fewer positive traits in SHC trade with the aim of identifying possible actions to offset its impacts.

Among the adverse issues caused by large SHC imports is the detrimental effect on local textile economies. Studies have shown that, during the years 1981 to 2000, SHC imports explained approximately 40% of the decline in production and 50% of the decline in employment [57]. Without a doubt, other factors influenced the poor performance of local industry (i.e., ageing infrastructure, weak local production policies) (Collier and Gunning 1999; Easterly and Levine 1997; Fafchamps 2004, cited in 56) However, these do not fully explain the speed with which the reduction in local garment production occurred.

Lacking conclusive evidence for the economic aspects of the international trade of SCH, we may instead turn to the environment and social aspects. The fact that more people can access affordable clothing should not be perceived as a mere act of satisfying basic needs, as, from a social justice perspective, access to quality clothing comes at a high environmental cost. In addition, a small proportion of countries are facing the majority of the negative effects of the waste trade, with implications for fairness and dignity.

Studies focused on the positive aspects of SHC trade have generally failed to consider the environmental issues associated with an excess of clothing, which tend to accumulate. As research has shown, SHC imports are rising. As long as imports are subjected to minimal control, the risk of increased waste production is high. Since 2015, the large increase in imports seems to have been correlated with a large increase in discarded waste in the Global North. Given evidence of an upward trend in clothing consumption, there is a high probability that imports of SHC to the Global South will also rise. The environmental conditions of areas with significant SHC markets are already ecologically critical, with aquatic and land ecosystems presenting alterations caused by the illegal dumping of textile waste. Studies on the environmental aspects of waste dumps and textile degradation have shown that uncontrolled dumping causes land degradation and pollution, since a wide range of pollutants (e.g., leachate) are released into the environment [58]. Research on the structure of fashion value chains has observed that the geographical shift in manufacturing activities to developing countries (in pursuit of cheap labour) has shifted the location of pollution [59]. A similar phenomenon is evident in the international trade of SHC, since unwanted items are not processed in their places of origin. The export of garments that are unlikely to achieve a second life results in the export of pollution to regions that lack the proper structures to transform materials into valuable input. Hence, respecting environmental limits in both the Global North and the Global South is a matter of environmental justice.

Pathways for a Just Circular Fashion Industry through Cooperation in Second-Hand Clothing Trade: A framework for Action

Considering the above-described dynamics of the distribution of SHC and the steps involved in this value chain, we developed a framework to develop solutions based on international cooperation between the Global North and Global South. This framework (Figure 8) encompasses all agents involved in the international trade of SHC and suggests a set of actions to reduce risks and manage identified hotspots.

Role of Agents

The framework presents the main agents involved in the international trade of SHC. Each agent intervenes at a different moment, providing input and output for the other agents, to create synergy. Prior to implementing specific strategies, it is important to first raise awareness – that is, to give visibility to the issues involved in the export of SHC and its implications for circular fashion models. Current evidence suggests that, since the recovery and reuse of clothing are circular strategies, the quantification of exported items might be included as ‘green

numbers' on official reports, without acknowledging the failure to achieve a circularity loop in importing regions of the world.

Role of the Private Sector

One of the strategies that might increase the accountability of fashion brands relates to extended producer responsibility. This strategy relies on the 'polluter pays' principle, which encourages manufacturers to assume responsibility for the impact of their products throughout the lifespan [51]. According to this scheme, producers hold responsibility for the products they produce that are not properly discarded. Fees or cooperation programmes can be used to collect funds in accordance with the environmental pollution connected with companies' profitable activities. Another critical agent in the private sector is the clothing sorter. Studies have shown that the more symmetric and transparent participation of importer countries in the sorting process is likely to increase the quality and appropriateness of the traded garments [42]. Since sorting has become highly profitable for wholesalers, the quality of imported garments has decreased, resulting in larger volumes of textile waste that never achieve a second life. Hence, the private sector must implement quality assurance programmes to guarantee that the items bought by importers are indeed able to be commercialised. To increase the efficacy of this strategy, other agents (e.g., governments, international non-profit organisation) must intervene to ensure implementation of the quality sorting process. In addition, the SHC collection take-back programmes managed by fashion brands may serve as starting points for the classification and quality assurance of items for export.

Finally, a third strategy may be implemented as a reactive measure to manage the existing textile waste in importer countries: the creation of value from upcycling, recycling and redesigning. Currently, initiatives are in place to foster the upcycling and recycling of garments. This is a positive measure, as long as it provides a source of income for the resellers and manufacturers of these items. However, it should only represent a temporary remedial measure, since it is not sufficient to stop or change the current textile waste stream, but only capable of deviating a minimum percentage of the imported goods. Such activities may provide opportunities for economic growth and innovation if they are managed properly. However, exporter countries should be encouraged to build the basic technological infrastructure to support the specialised labour involved.

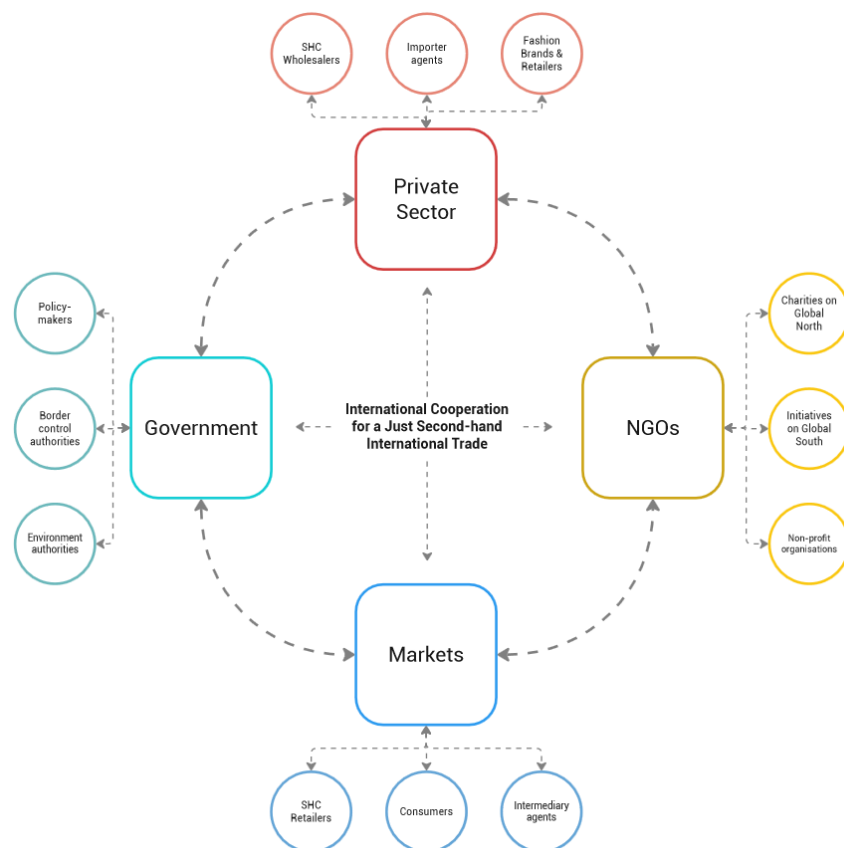


Figure 8. Agents involved in the framework for a just SHC international trade. *Source: own elaboration.*

Role of Governments

Trade policies are decisive for the effectiveness of trade in any given region or country, as advantages, benefits and negative effects are determined by the way in which trade occurs. Evidence suggests that import bans are not effective for local economies, as such prohibitions may create illegal trade. Thus, governments are challenged to find ways to guarantee positive trade growth by establishing a set of preconditions to account for aspects that have historically been ignored. As countries differ in their conditions for trade, a set of regulations must be established to serve as an equity base for trade and global value chain interactions. This idea relies on some examples discussed throughout the paper, demonstrating that aspects such as geographical characteristics, income levels, and power relationships between countries (among others) are significant in determining the positive or negative impacts of international trade.

Additionally, governments must ensure healthy policies and institutions in order to foster, rather than hinder, openness and new ways of doing trade. A country's internal capacity to adopt and implement fair trade agreements also depends on the extent to which its institutions are prepared to do so. Importer countries must ensure a minimum set of preconditions for trade agreements to work, especially in high-risk border areas. The present study has demonstrated that trade data may be used to identify the interactions between specific regions (i.e., the United Kingdom and Ghana, the United States and Chile), which may inform the design of protocols to monitor 'high risk' interactions by the government of the importer country.

Role of Markets

Market regulation must always involve consumers. While one of the long-term strategies for reducing the number of discarded garments is to stop overconsumption, even short-term strategies (e.g., 'polluter pays' systems [23]) must involve consumers, in addition to fashion brands. Critically, governments should establish and administer a waste disposal fee for garments that are discarded by consumers. This strategy may serve to disincentive overconsumption, and the monetary funds collected could be used to support programmes of cooperation between the Global North and Global South. In importer countries, retailers and intermediary agents are pivotal for preventing unsold clothing from reaching landfills or being subject to uncontrolled dumping. However, given the complexity of the challenge, collaboration with local authorities and NGOs is necessary. Retailers and intermediary agents may be able to create value, but they will require support from other institutions in order to successfully divert waste and transform unwanted textiles into valuable items, thereby becoming upcyclers or recyclers of unsold garments.

Role of NGOs

Charities in the Global North play a major role in SHC trade dynamics. Frequently, the journey of a traded item starts with the donation of the unwanted item to a charity. Subsequently, many of these items are sold to wholesalers, which make a profit from exporting the goods. Therefore, charities must improve their system of selecting buyers and redistributors on the basis of responsible behaviour. Some criticism of charities has emerged in connection with their advantageous position in society. Hence, charities should also seek to improve communication with donors in order to make their processes of collection and sale more transparent. NGOs in the Global South can promote different actions to involve relevant stakeholders in fostering on-site circular strategies. It is worth noting that, thus far, NGOs in this region have had a positive impact on promoting changes and demanding assistance from authorities and private companies. Nonetheless, the potential of these organisations is limited, and additional support is required to counterbalance the negative impacts. Local NGOs are a major agent for raising awareness and promoting regional participation.

Other Guidelines and Key Actions: Fair Trade Standards for Second-Hand Markets to Avoid Information Asymmetries and Export Regulations

From an economic perspective, second-hand items are considered 'regular goods' that are able to be locally or globally traded. Similar to brand-new items, second-hand garments are produced (or classified, in the case of SHC), packed, shipped, sold and bought, and they reach retailers and final consumers from different parts of the globe. However, the same items may also be treated as discarded goods, and this may prevent them from being carefully packed or properly sanitised, categorised and, most importantly, traded fairly. Currently, second-hand items are not subject to any kind of voluntary or obligatory certification. However, they have value, a target market and, as with any other type of good, a specific offer-demand dynamic. The World Fair Trade Organisation [60] prescribes ten principles for assuring fair trade, most of which can be applied to the trade in SHC: (i) creating opportunities for the economically disadvantaged, (ii) transparency, (iii) accountability, (iv) fair payment, (v)

ensuring no child labour (vi) ensuring no forced labour, (vii) commitment to non-discrimination, (viii) commitment to gender equity, (ix) ensuring good working conditions and (x) providing capacity building and respect for the environment. Frequently, these principles are not followed in the SHC market. Hence, they may provide the basis for a more detailed framework aimed at ensuring fair trade.

South-to-South Cooperation

The investigated data revealed similarities between countries in the Global South with respect to the environmental and social challenges they face in connection with SHC imports. Shared knowledge and solutions may help to ease these negative effects. In more detail, South-to-South cooperation should involve the creation of 'institutional spaces where actors converge to contest prevailing global norms and construct new visions of development' [61]. Diverse strategies have already emerged in countries facing issues associated with SHC imports. South-to-south cooperation may enhance the potential of these strategies through amplification or development based on partners' experiences.

Research and Development

As described above, the current composition of textiles represents a challenge for the circularity of materials. Thus, research and development into raw materials and post-consumer textile treatments in the fashion sector represents a key multi-sectoral strategy to reduce the negative impacts of trade in SHC and, more specifically, the EoL of garments. To this end, intersectoral cooperation is required between governments, the private sector and other agents.

In the short term, research and development may contribute to improving existing recycling systems. Currently, the composition of fabrics limits the realisation of recycling, as different fabric mixes make recycling difficult and expensive. This is one of the primary reasons why recycled textiles are frequently downcycled. The development of effective recycling systems may reduce the amount of landfilled waste. Furthermore, cooperation between the Global North and Global South may result in the establishment and use of infrastructure to treat existing textile waste. Over the long term, research and development – particularly with respect to circular bioeconomy strategies – may help to decrease the environmental footprint of garments, in the production and EoL phases. In the production phase, such reductions may be achieved by avoiding the use of non-renewables. In the EoL phase, reductions may be achieved by increasing the use of bio-based textiles. While some initiatives in these directions have already begun, further research is needed to increase their accessibility and competitiveness.

The proposed framework only briefly describes the steps needed to implement the different strategies. However, it is significant in at least three ways: First, it provides a comprehensive overview of the relevant issues and agents involved in the international trade of SHC. Second, it suggests new ways of cooperating that may be more effective than traditional international relations. Third, it advocates for a global just transition to the circular economy, with potential benefits for all parties.

Impact

The present study investigated a sector with high potential for contributing to sustainability through circularity. The proposed framework identifies the most important areas of transformation in the international trade of SHC to foster a just and circular transition, including all agents and covering social, environmental and economic aspects. The proposed collaboration between agents will support the creation of multi-stakeholder strategies, promoting interaction, generating additional value for the solutions and acknowledging the voices of all parties – in particular those that have been previously overlooked. This aspect is crucial for transforming the fashion industry into one that is fairer and more circular. In terms of regional impacts, the present study highlighted gaps in the circularity model in the fashion industry. By framing the issue from a Global North–Global South perspective, material flow patterns in the international trade of SHC emerged. In addition to unveiling asymmetries in fashion value chains, the study also identified specific regions in which SHC imports have been mainly detrimental to society and the environment. The identification of these hotspots may inform strategies to address these negative impacts, where relevant.

The study also highlighted the social issues associated with the international trade of SHC, particularly within importer countries – which, due to the current conditions of SHC markets, frequently find themselves at a disadvantage compared to exporter countries. Information asymmetry and the import of low-quality items have not only environmental impacts, but also social impacts on the people who work in this sector.

The proposed framework suggests different actions for improving these social conditions in the transition to a circular and fair SHC trade, seeking to reduce the vulnerability of agents in the Global South.

The reduction of negative environmental impact of the fashion industry is of vital importance to sustainability goals, and the SHC market may represent a critical target for minimising the footprint of this sector. By extending the lifespan of garments in a fair way, the negative impact of the EoL stage may be reduced. More specifically, this transformation of the SHC sector could contribute positively in at least three ways: (i) by reducing the number of items that are disposed of in landfills (or uncontrolled dumping sites) or incinerated, thereby preventing the release of harmful toxins; (ii) by promoting the effective recirculation of items (e.g. recycling, repurposing), in order to close the loop and prevent pollution shifting; and (iii) by promoting the use of alternative materials (i.e., bio-based fabrics), thus reducing the environmental impact of the EoL stage.

In terms of the economic impact, recirculation has the potential to generate new and diversified products and services, creating new jobs and contributing to decoupling economic value from the extraction of raw materials. Hence, both the creation of a positive economic impact and the reduction in asymmetry between high- and low-value creation activities are possible. Although SHC markets are a source of income for many, the present study identified populations that are also harmed by the international trade of SHC, suggesting actions to reduce inequalities. Finally, the results of the present study may provide valuable information for policymakers. Although new regulations for international trade and the CE have been emerging, many factors have not yet been addressed, particularly from the perspective of global sustainability and environmental justice in international trade. By highlighting the gaps in current models of circularity, the present study has provided in-depth information on trade activities to inform new regulatory measures for SHC import and export. As a total ban on SHC imports is not optimal, guidelines and policies are necessary to address the missing aspects of current circularity and international trade policies.

Conclusions

The present study aimed at filling knowledge gaps pertaining to the international trade of SHC, identifying the environmental and social issues that have emerged as a result of outdated market dynamics. The analysis identified how these market dynamics are incompatible with the notion of a CE, as aspects that are critical for ensuring a closed-loop economy are being overlooked by the different actors involved in the international SHC trade. Furthermore, the analysis found that this trade is characterised by asymmetries between the Global North and Global South, in alignment with previous research [34,36,38,41,43]. Therefore, the international trade of SHC can be classified as a form of global inequality and environmental injustice. In addition, the analysis promoted a better understanding of textile degradation and the release of toxic components into the environment as threats to systemic ecological equilibrium posed by textile waste. Because the economic benefits of SHC markets in developing regions are not sufficient to outweigh the environmental costs caused by import surpluses, immediate action is needed to reduce any irreversible damage to global ecosystems. In the literature, trade and its economic benefits have been analysed from various perspectives, encompassing environmental concerns, power dynamics and international justice, among others. While these analyses are gradually extending into the realm of sustainable fashion, the analysis of specific cases may improve our understanding of the main issues involved in the international trade of SHC. Undoubtedly, this trade has some positive effects, including increased access to affordable garments in importer countries, employment generation and environmental benefits associated with longer clothing lifespans. A complete ban on SHC importation is not advisable, given evidence that such prohibitions are associated with illegal trade and corruption at borders [37]. However, as the value chain becomes more complex, involving an increasingly diverse array of agents, further research will be needed to discern both the failures and the successes of past experiences. One useful step in the transition towards a just circular fashion industry may be to consider the participation of different sectors and institutions. The present study endorsed this principle by proposing a comprehensive framework for developing strategies to address current issues and mitigate new potential risks. Future work could focus on developing specific procedures for implementing the suggested strategies, which are currently framed in general terms. Additionally, it may be worthwhile to investigate whether similar patterns apply to different types of second-hand goods traded internationally. Nonetheless, the proposed framework may serve as a promising starting point for the transition towards a more equal and just circular economy.

Conflict of interest

There are no conflicts of interest to declare.

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