

UNECE

Reversing direction in the used clothing crisis:

Global, European
and Chilean perspectives



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Foreword

In recent decades, the advent of fast fashion has boosted the production and consumption of textiles, mainly due to inexpensive synthetic fibres and the significant mobilization of low-wage labour. This global trend has profoundly impacted our societies and planetary resources. A substantial body of evidence highlights the fashion industry's contributions to environmental degradation, notably through pollution, chemical discharge from manufacturing processes and significant carbon emissions.

The surge in the production of low-cost, disposable apparel has led to consequential effects at the end of these garments' lives. Notably, exporting second-hand clothing from developed to developing countries has intensified, with global trading volumes of these discarded garments increasing almost sevenfold over the past 30 years, as reported by the UN Comtrade Database.¹

This joint report by the United Nations Economic Commission for Europe (ECE) and the Economic Commission for Latin America and the Caribbean (ECLAC), with support from the European Union, shows how extensive volumes of textile waste end up in the Atacama Desert, releasing microplastics and chemicals and transforming the landscape into a veritable open-air landfill. In 2022 alone, 124,000 tons of second-hand textiles entered Chile, according to Chilean National Customs Department data, many of which were eventually disposed of. This issue, however, is not isolated to Chile but indicative of a broader trend.

This report offers an in-depth examination of the global trade flows of second-hand clothing, focusing on Europe and Chile. Through meticulous field and desk research, it elucidates the complex web of actors involved. It highlights the often-overlooked consequences of trade dynamics, consumer behaviours and waste management strategies, uncovering some pressing challenges.

Several potential solutions for a responsible fashion industry are discussed. These include improving laws and regulations, ensuring traceability and transparency throughout supply chains to facilitate sustainable trade flows, and designing clothes to have longer life cycles to reduce waste. The report presents policy recommendations to address the export of second-hand clothing from Europe and the import of large volumes of low-quality garments into countries such as Chile. Action needs to be taken by both exporting and importing countries, and this will involve cooperation.

Furthermore, this report should serve as a wake-up call to policymakers, industry stakeholders, and consumers alike, urging a collective re-evaluation of the textiles sector in favour of greater resilience and the sustainable use of natural resources, leading to a circular economy of the future.



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¹ See [online] <https://comtradeplus.un.org/>.

Open letter from Lily Cole

Climate Activist and Advisor to UNECE

A mountain range of kaleidoscopic colours has recently risen from the Atacama Desert in the north of Chile – a range so vast it is visible from space. Mountain climbers – often immigrants from Bolivia and Venezuela, sometimes locals – traverse these summits of textile waste, looking for clothes to dress their families, or to make a humble living from. Three-quarters of these textile hills will slowly degrade over the coming centuries or sometimes be set on fire, turning the colourful textile mountains grey and black amidst clouds of petroleum smoke.

These mountains of fabric have emerged quickly – appearing on satellite images in a matter of years – as testament to the fast nature and shallow time of our society's desires. They are backdropped by the Andes, a range tens of millions of years old, which, over thousands of years, inspired the indigenous Andean cosmovision, which sees humanity intricately connected with ecology and the cosmos. "When viewed in deep time," Robert MacFarlane writes in his book *Underland*, "things come alive that seemed inert. New responsibilities declare themselves [...] Mountains ebb and flow."

In 2022, I visited Santiago, Chile, under the auspices of an initiative spearheaded by the United Nations Economic Commission for Europe (UNECE), for a mission that aimed to demonstrate the need for increased traceability and transparency of value chains and trade flows in the garment sector. Whilst there, I travelled to the Atacama Desert, where my attention was brought to the textile mountains and the shifting cultural, economic, and political landscapes that birthed them.

Inexpensive synthetic materials, mechanised factory production, and global trading patterns that exploit wage gaps have made material goods cheaper, lower quality, and more disposable. It is often now cheaper for customers to buy new goods than repair existing ones. Fast fashion is emblematic of these economic and consumer trends. In recent decades, as the world (mostly the Global North) has produced and consumed fashion at an unrelenting rate, a handful of countries (mainly in the Global South) have become cemeteries for the world's unloved - sometimes unworn – clothes.

The surge in the production of low-cost, disposable apparel has led to an almost sevenfold increase over the past 30 years in the volumes of discarded clothing traded internationally¹. Fast fashion is estimated to produce 92 million tonnes of waste each year². Many fashion garments are binned; some are given to charity shops or dropped by hopeful consumers into textile bins. However, only a tiny fraction of the clothes that are disposed of are recycled or reused. When did we normalise throwing clothes away? And where does most of it end up? Increasingly, second-hand clothing is exported from high-income countries to lower-income countries like Chile, Ghana, Kenya, and Pakistan. Ultimately, as William McDonough, author of *Cradle-to-Cradle* says, "there is no away."

1 UN Comtrade data.

2 Niinimäki et al. The environmental price of fast fashion, *Nature Reviews Earth and Environment*, Vol 1, April 2020.

Furthermore, the waste rendered visible in clothing mountains reveals only a small proportion of the waste produced in manufacturing processes: “What most people see in their garbage cans is the tip of the material iceberg,” write McDonough and Michael Braungart, “on average, the product contains only 5% of the raw materials involved in making and delivering it.” How have our economic and political rules enabled waste to become this prolific?

The textile mountains reveal just some of the broader “negative externalities” not currently priced in our economic system. Our economy does not factor in the true costs of manufacturing (whether, for example, the impacts of chemical pollution, greenhouse gases, or excess waste) to our wider society and the environment, now and in future.

Consumer awareness and cultural discourse are very helpful in driving voluntary corporate action on these topics. Yet, ultimately, we need policies to curb these wider systemic trends, which is why this report and its recommendations are so necessary.

Following our mission in Santiago, UNECE and the United Nations Economic Commission for Latin America and the Caribbean (ECLAC) commissioned this comprehensive report to examine the global trade flows of second-hand clothing, with a particular focus on Europe and Chile. Informed by meticulous field and desk research, the report highlights the often-overlooked consequences of trade dynamics, consumer behaviours, and waste management strategies, thereby uncovering some pressing challenges we face.

Potential solutions to these challenges are explored in detail in the report. Beyond these policy and technical recommendations, I would like to see a comprehensive cultural conversation on returning to a slower version of fashion that takes full account of local circumstances.

In the Atacama Desert, I met indigenous communities who spoke to me of the Andean cosmovision and changes to the local ecology. An older indigenous woman, Feliciano, lamented that she struggled to find customers for her ceramic pottery since imports of cheap factory-produced ceramics had flooded the local market. Only the most observant tourists might notice the ceramic plates, branded with the name of the town “San Pedro De Atacama”, were manufactured not in or near San Pedro De Atacama but in another continent entirely.

Meanwhile, I bought beautiful antique textiles handwoven by indigenous communities on the Bolivian border and traded over the Andean mountain range that divides Bolivia and Chile. The history of craft, including textiles, has often involved women in work that can be empowering, culturally embedded, beautiful, and slow. There remains a way of making things that we can return to if we learn from the ebbs and flows of mountains, old and new.

Lily Cole

Acknowledgments and notes

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Definition of second-hand clothes

In this report, clothing traded between countries under the Harmonised System (HS) codes 6309 (worn textiles and clothing – used for textiles fit for reuse) is referred to as “second-hand clothing”. This reflects the reality that some clothing exported to developing countries is used and fit for reuse, some is unused (e.g. excess stock), and some is used but unfit for reuse, either in the importing country in particular (e.g. because, for instance, it is unsuitable for the climatic conditions there) or in general, because it is in too poor a state.

Definitions of imports and entries

Goods that enter the free trade zone ZOFRI are not officially classified as imports under Chilean law since they are not subject to import tariffs, excise duties, or other taxes. In this report, they are referred to as ‘entries’. See Chapter 1 for more information on the split between second-hand clothes that arrive in Chile as ‘entries’ and those that arrive as ‘imports’. See Appendix 3 for more information on the latter category.

Exchange rate

The exchange rate between the Chilean Peso (CLP) and the United States Dollar (USD) used in this report is 840.47 CLP per USD, the average for 2023 as provided by [exchange-rates.org](https://www.exchange-rates.org)³.

3 <https://www.exchange-rates.org/exchange-rate-history/usd-clp-2023>



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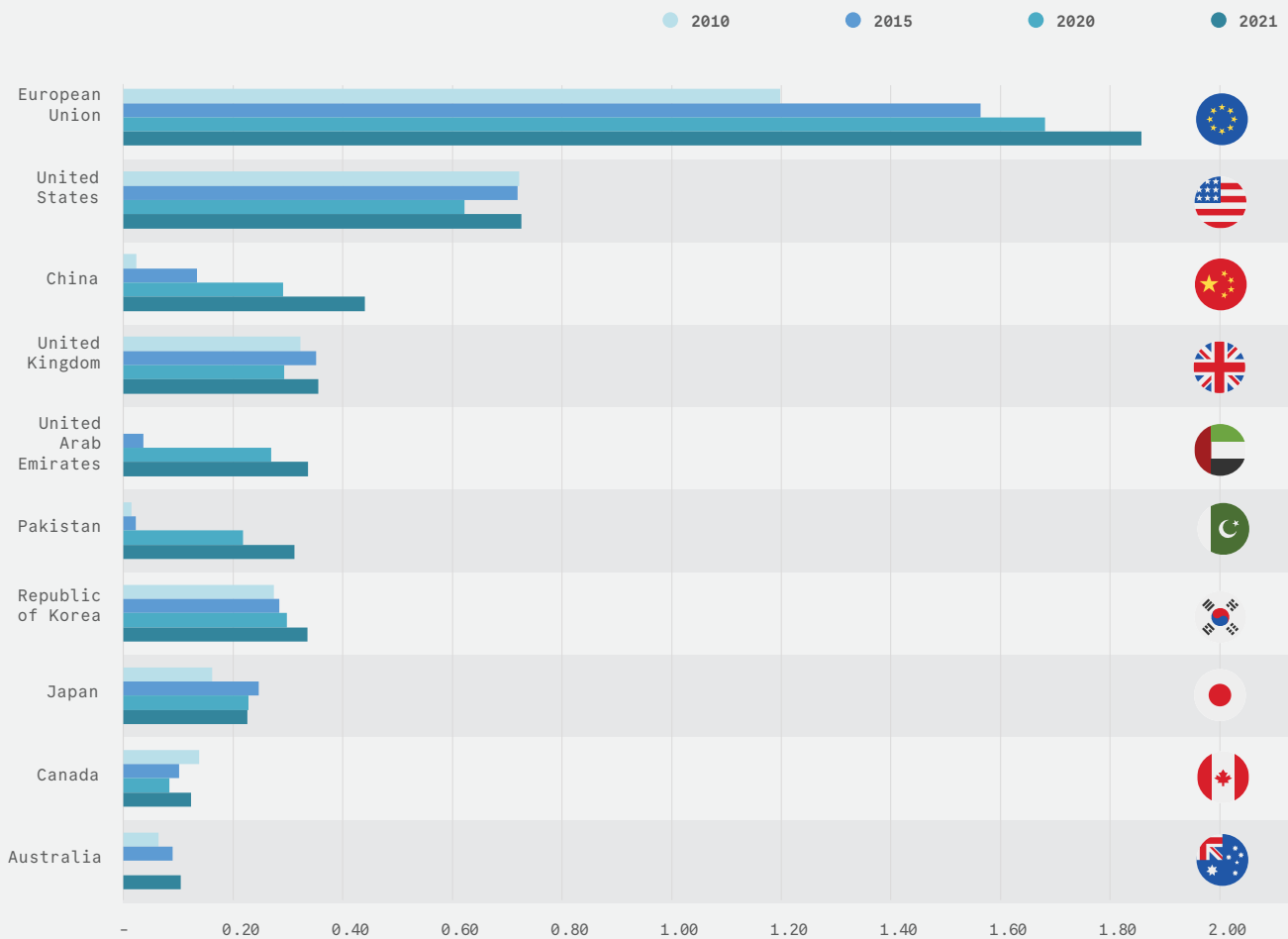


Figure E1. Top ten exporting countries of second-hand clothing by volume (million tonnes) 2010-2021
Source: UN Comtrade

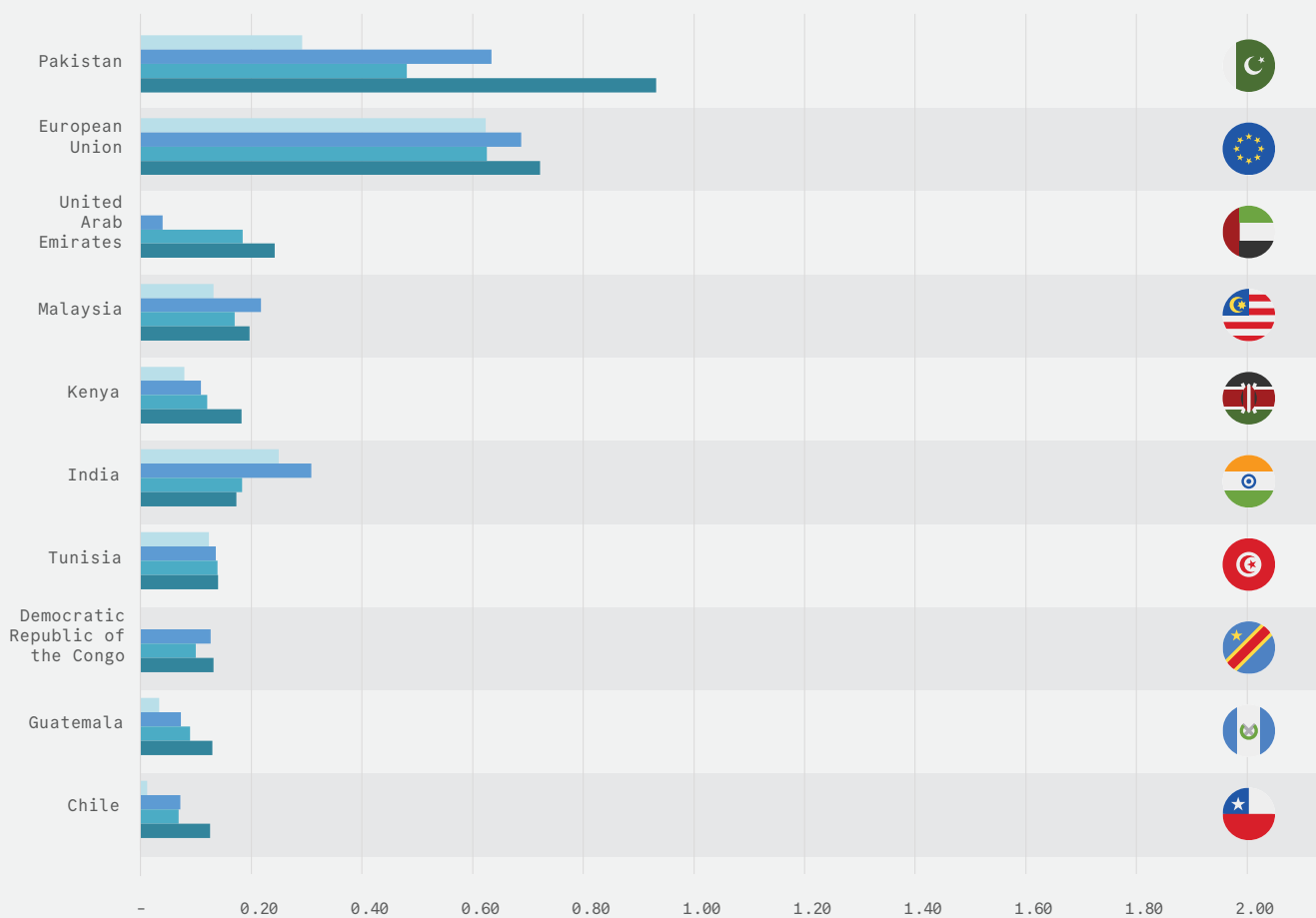


Figure E2. Top ten importing countries of second-hand clothing by volume (million tonnes) 2010-2021
Source: UN Comtrade

Executive Summary

Since 2012, the Alto Hospicio Municipality in the Chilean Atacama Desert has witnessed the fast growth of large illegal dumps of discarded clothing and textile products. Several tens of thousands of tonnes of textile waste cover around 300 hectares, some of which are burned on-site. Most clothes are made of synthetic fibres, and their incineration releases heavy metals, acid gases, particulates, and dioxins, harming the health of people nearby and damaging the local environment.

Such dumps – also present in Ghana, Kenya, and Pakistan, among other countries – are symptoms of the problem of developing countries importing large volumes of low-value textiles, which they struggle to use in economically and environmentally beneficial ways. While local circumstances in each importing country are unique, the underlying cause is the export of large volumes of second-hand clothes from developed countries, driven by changes in the global fashion industry in recent decades.

In this context, in 2023, the United Nations Economic Commissions for Europe (UNECE) and for Latin America and the Caribbean (ECLAC) conducted a global study on second-hand clothing flows and the business models driving them, with a focus on Europe as an origin and Chile as a destination. The study contributes to the theme of the 69th session of the UNECE, “Promoting circular economy and sustainable use of natural resources”, and to the work of the United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT). The study includes the results of fieldwork undertaken in the second-hand clothing markets of the Tarapacá region of Chile. It formulates policy recommendations that aim to improve the economic, social, and environmental outcomes of the global trade in second-hand clothes.

Main findings

International trade in second-hand clothing has boomed, predominantly from the Global North to the Global South, driven by the advent of fast fashion

There has been a rapid increase in the global trade of second-hand clothing. According to UN Comtrade data, globally traded volumes of discarded clothes increased almost sevenfold over the past three decades. In 2021, the European Union (30%), China (16%), and the United States (15%) were the leading exporters, while Asia (28%, predominantly Pakistan), Africa (19%, especially Ghana and Kenya), and Latin America (16%, mainly Chile and Guatemala) were the leading importers (see Figures E1 and E2).

Multiple entities are engaged in the intricate cycle of relocating second-hand clothing, as illustrated in Diagram E1. Globally, 73% (62% in the EU) is disposed of as general garbage, which is incinerated or landfilled (EMF, 2017; EuRIC, 2023b). The remainder is collected through donation boxes and second-hand shops. Two trends that increase the circulation of second-hand clothes are their sale through e-commerce sites and thrift shops, primarily by young people, and their collection for resale or recycling by retail brands. However, to date, both represent small percentages of second-hand clothing flows. The central role of sorters in exporting and importing countries can be seen in Diagram E1. Once sorted, clothes are sold to intermediaries and local merchants who market them to consumers. However, large quantities of low-quality, unsaleable items remain in the bundles purchased by these market players, which find their way to dumps. Recycling rates, especially closed loop (clothing-to-clothing) are low in both exporting and importing countries due to a lack of infrastructure and the difficulty of separating the blended textiles often used in producing modern clothing.

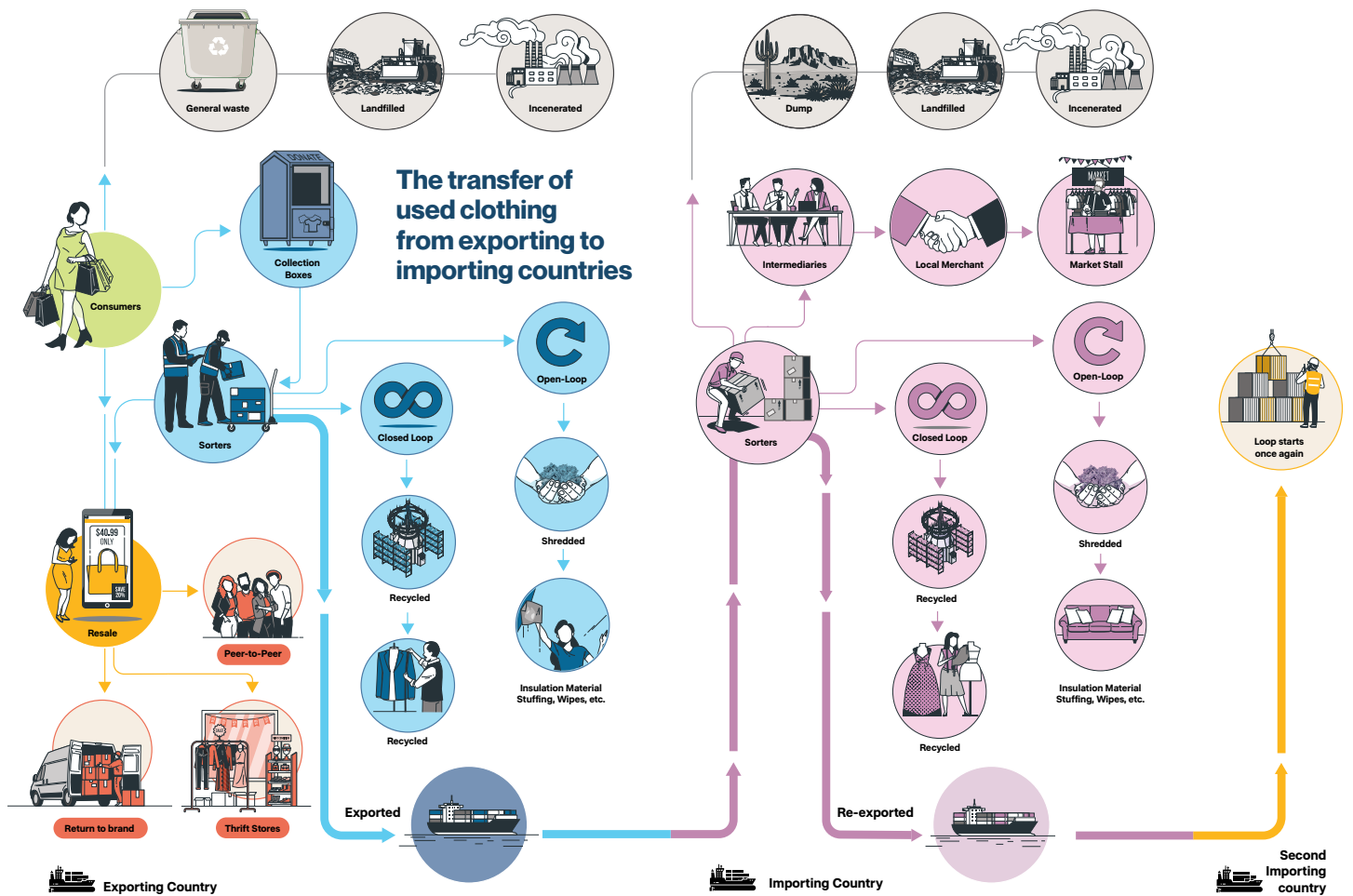


Diagram E1. The transfer of second-hand clothing from exporting to importing countries

Source: UNECE / ECLAC analysis

Increased global trade in second-hand clothes is driven fundamentally by shifts in the fashion industry in recent decades that have boosted the production of garments and reduced their quality, making them more difficult to circulate after use:

- The fast-fashion revolution of the past several decades, characterised by rapid style turnover, has led to large increases in the production and disposal of low-quality textiles.
- This model is facilitated by the increased use of low-cost synthetic fibres and trade liberalisation, which allowed the offshoring of production to countries with low-wage labour.
- Large proportions of clothing are made from difficult-to-separate blended fibres, making opportunities for economic reuse and recycling rare, particularly in developed countries.

Importing countries struggle to deal effectively with large inflows of low-quality second-hand clothing : the example of Chile

About two-thirds of the second-hand clothes that enter Chile arrive, after customs checks, in the Iquique Free Trade Zone (ZOFRI), where more than 50 companies employ a manual sorting process, performed primarily by women, to separate clothes into first-, second-, and third-quality. Subsequently, they are assembled into bundles, of which roughly 5% are re-exported, 20% are sold in the rest of Chile, and 75% are moved to the port's surrounding areas (see Diagram E2).

Many of these clothes end up in landfills in the nearby Atacama Desert, as they have no market value locally or are too numerous for the local markets to absorb. Intermediaries, which seek to buy high-quality second-hand clothes from companies at ZOFRI for resale on local markets in the northern Tarapacá region, can only purchase large quantities of primarily third-quality clothes mixed with a few first- and second-quality items. Most clothing and textiles are in this third category, so most end up being dumped.

An accommodating regulatory regime facilitates the large volumes of second-hand clothes entering the country. Chile mostly levies zero tariffs, applies no quantity restrictions, and only requires shipments (from certain countries) to be fumigated. In contrast, most countries in Latin America (including Argentina, Brazil, Colombia, Mexico, and Peru) have clothing import bans to protect their national textile and fashion industries, which has also had the unexpected benefit of helping avoid the threats to human health and the environment posed by clothing dumps.

Trade in second-hand garments provides mainly informal employment and income for national and migrant populations in established stores and open-air markets across Chile, though predominantly in the North. Efforts to address the human health and environmental aspects of second-hand clothing imports must consider this socioeconomic context.

The arrival of used clothes in Chile and their onward journey

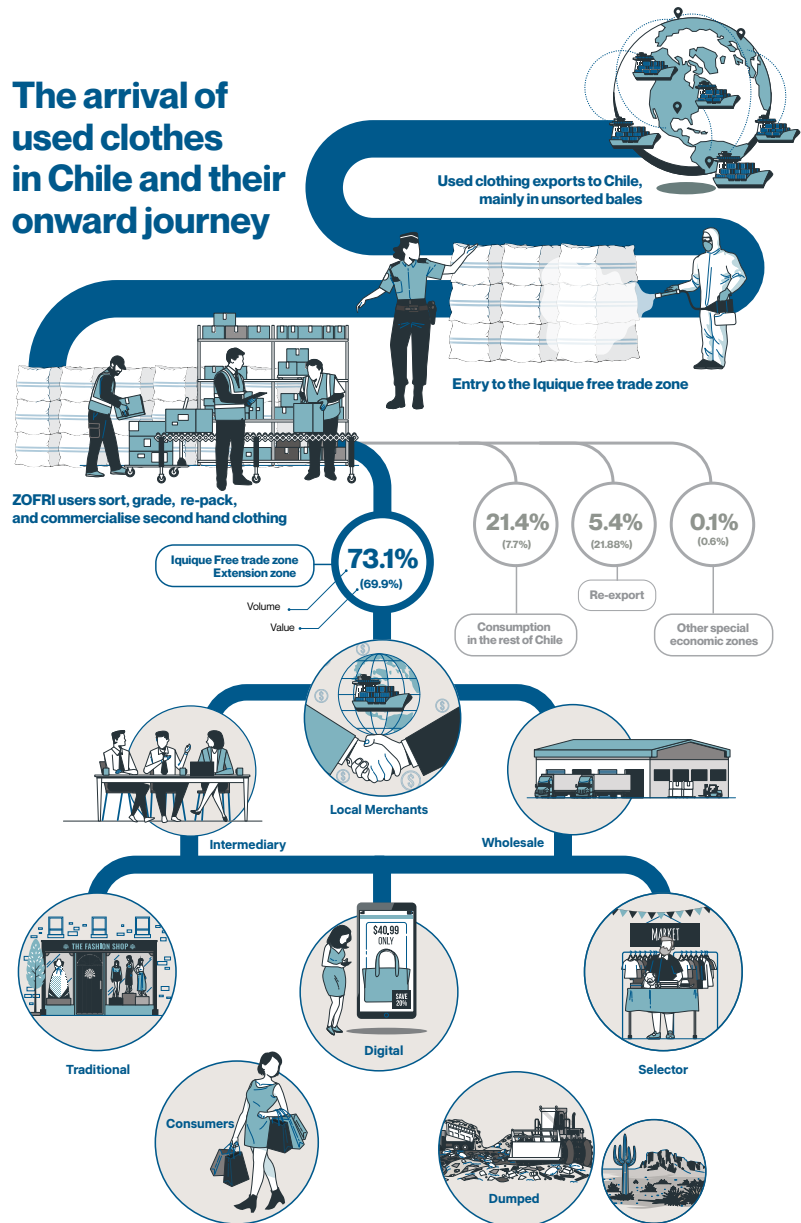


Diagram E 2. The arrival of second-hand clothes in Chile and their onward journey

Source: UNECE / ECLAC analysis

Exporting countries struggle to deal effectively with second-hand clothing and end up exporting textile waste to developing countries: the example of the EU

In Europe, about a third of disposed textiles are collected (McKinsey, 2022). Usually, municipalities grant licences to firms, charities, and NGOs to collect second-hand clothes using containers, door-to-door collections, and donations. The collected textiles – both reusable and non-reusable – are primarily transported to manual sorting hubs in Germany, the Netherlands, Poland, and the United Kingdom where non-textile products and dirty clothes are removed, often by women, and items suitable for resale in Europe are separated.

This intra-EU trade indicates a lack of infrastructure to deal with second-hand textiles. Germany, for example, collected 1 million tonnes of second-hand textiles in 2022 but can recycle less than a quarter of that figure, while the UK can sort less than half of the textiles it collects. This reflects a lack of technological progress in separating and recycling blended fibres and the high cost of manual sorting.

About half of the collected textiles are downcycled to be used as, for example, insulation, filling, and single-use industrial wipes. Only 1% is recycled into higher-value outputs such as new clothing (EMF, 2017). This reflects the fact that, of the 55% of reusable collected clothes, only five percentage points have a value on second-hand markets in the EU. The remaining 50 percent is exported to mainly developing countries.

A design-led circular economy approach to clothing is still in its infancy in Europe. The EU Circular Economy Action Plan (CEAP) was adopted in 2020, the EU Strategy for Sustainable and Circular Textiles was adopted in 2022, and the proposal for the EU Ecodesign for Sustainable Products Regulation was adopted in 2023. However, these policies are still to bear fruit in the form of large-scale upstream solutions to the problems of textile waste. There remains too little dialogue between sorters and recyclers, a lack of recycling capacity, and insufficient large-scale digital sorting infrastructure.

Recommendations

1. Make changes to international trade agreements: EU-Chile example

- ✎ **As part of the 2023 Interim Trade Agreement between the EU and Chile**, which includes a chapter on Trade and Sustainable Development, step up bilateral cooperation on initiatives covering sustainable consumption and production, circular economy, green growth, and pollution reduction. These efforts would be facilitated by adjusting the trade policies of both parties:
 - **Develop minimum international criteria for second-hand clothing exports** to ensure that Chile and other importing countries only receive garments that have a market value or that can be recycled. Such criteria would incentivise the automatic classification of second-hand textiles and increase the effectiveness of sorting operations.
 - **Agree between both parties on legal definitions of ‘textile waste’ and ‘second-hand clothing’** and establish quality restrictions on their import from the EU and other exporting countries.
- ✎ **Use this agreement as a template for other bilateral trade agreements** between the EU and other countries to which it exports textiles and between Chile and other countries (such as the United States and China) from which it imports textiles to help reduce global trade in textile waste.
- ✎ **Set internationally agreed standards to clearly distinguish between second-hand clothing and textile waste and establish mechanisms to track their trade flows** by building on existing UN work in partnership with international and regional players, including the EU.

2. Pursue domestic policy action in importing countries: **the example of Chile**

a. *Minimise future imports of waste textiles*

- **Step-up customs controls:**
 - **Improve customs procedures at ZOFRI** and mandate their integration into the Foreign Trade Single Window (SICEX).
 - **Adopt administrative measures at the port of Iquique** to ensure digital traceability of second-hand clothing and textile waste flows from there to ZOFRI and other parts of Chile, based on international standards (i.e., the UNECE-UN/CEFACT traceability standard).
- **Establish a Circular Economy Strategy for Textiles** covering the entire process from import through incorporation into new production processes to delivery of recycled products and repair services.
- **Set up public-private alliances for recycling projects** through tax-extension schemes and funds to support entrepreneurship, innovation, and job creation for vulnerable groups, particularly in the Tarapacá region.

b. *Address the harmful effects of previous – and any future – imports of waste textiles*

- **Improve the legal framework for waste management**, including textile recycling, by speeding up the preparation, approval, and enforcement of laws on Extended Producer Responsibility and recycling (Law 20.920).
- **Implement a regional solid waste control plan involving inspections of sanitary landfills, clean points, and dumps** to increase regional health authorities' enforcement capacity.
- **Accelerate the adoption of the Chilean draft law on the environmental quality of soils** to provide the mechanisms and resources necessary to restore soil in the Atacama Desert contaminated by textile waste.

3. Pursue domestic policy action in exporting countries: the example of the EU

- **Make circular economy considerations central to clothing design**, with mandatory fibre content targets to improve garments' quality, durability, reparability, and recyclability.
- **Introduce an Extended Producer Responsibility (EPR) system**, which holds producers responsible for the products they put on the market, thereby incentivising improvements in quality and higher rates of repair, reuse, and recycling.
- **Expand the number of sorting and recycling plants** through financial incentives together with the development of more affordable technologies and solutions that support the separation and recycling of blended fibres.
- **Incentivise and facilitate increased levels of traceability and transparency** in fashion value chains through the expanded use of DPPs, improved labelling, and more significant collection of data on flows of items domestically and internationally.
- **Take measures to tackle fast fashion and ultra-fast fashion** by, for instance, levying a fee per garment to take account of its environmental impacts and charging consumers for returning clothes after a short period (to reduce the number of second-hand clothes going to waste)
- **Run awareness-raising campaigns** to encourage consumers to make more informed choices about their clothes, such as buying fewer items of better quality, renting rather than buying some garment types, and circulating clothes to peers after use.

Conclusion

No single solution can reduce the massive volume of used garments, most of which have little economic value, that end up as textile waste around the developing world, including in the Atacama Desert. A multi-level approach, well coordinated between exporting and importing countries and involving national and sub-national authorities alongside affected communities, is needed.

Implementing this mix of measures requires the engagement of multiple authorities and stakeholders concerned with local environmental and social issues. As this study reports, their members are aware of the multidimensionality of the challenges to be addressed and have already implemented solutions on a small scale.

In the end, systemic solutions are needed to reduce the volume of new clothes put on the market, ensure clothes are designed to be free of toxic chemicals, and encourage longer use phases and multiple cycles of reuse—a circular economy for fashion.

Following this report, UNECE and ECLAC will engage with governments in the EU and Chile on the issues raised in it, reach out to stakeholders across the value chain to convene working groups on systemic solutions and seek to align legislation in the EU and Chile to enable the increased circularity of textile flows domestically and internationally.

An example of outreach to government partners is ECLAC's technical assistance to the Chilean government. This assistance aims to incorporate an international trade dimension into Chile's National Strategy for Circular Economy in Textiles (ENECT), promote complementarity between Chile's EPR Law and ENECT, and develop public-private cooperation to increase levels of traceability and transparency in the fashion industry value chains.



Introduction

Ensuring sustainable consumption and production patterns is the goal of UN Sustainable Development Goal (SDG) 12. This objective seeks to promote consumption and production patterns that are more efficient in their use of resources, less harmful to the environment, and more socially responsible. It encourages adopting sustainable production and consumption practices that align with the principles of the circular economy. Adopting these principles leads to implementing measures such as encouraging the reuse of products and materials, increasing efficiency in production processes, promoting recycling, and minimising waste.

International trade may facilitate achieving SDG 12 by enabling the circulation and reuse of products and materials across borders. It can also drive the adoption of sustainable practices by transferring technology, knowledge, and best practices to use resources effectively. It can generate impetus for adopting circular economy approaches in sectors that span many countries and contribute to the global transition towards sustainability.

In the current linear 'take-make-waste' economy, however, trade is a vehicle for transporting waste. This is evident in the global fashion industry. Alongside many studies documenting how the fashion industry pollutes air, water and land and abuses human rights in garment production, recent reports have highlighted the problems of clothing dumps in developing countries. However, there has been little research on the nature of the trade flows of used and waste textiles, the value chains in exporting countries that drive them, and the socioeconomic realities in developing countries that receive them. This study aims to deepen knowledge of all three elements by taking the EU as an example exporter and Chile as an example importer, emphasising the value chains in the northern part of Chile that contribute to waste textiles being dumped in the Atacama Desert.

The study is structured as follows:

Chapter 1 analyses the second-hand clothing trade in Chile, with a focus on what happens in the Atacama Desert in northern Chile by drawing on fieldwork undertaken in the area in 2023. It analyses the value chain, formal and informal, that exists in the Iquique Free Trade Zone (ZOFRI) and local markets in the surrounding area. It also includes an assessment of trade regulations regarding second-hand clothing in Chile.

Chapter 2 provides the European perspective of second-hand clothing exports. It outlines the main actors and stages in the value chain, the trends and underlying business models driving trade flows, and examines some initiatives to increase circularity in textiles in Europe.

Chapter 3 gives an overview of the global trade in second-hand clothing and the main drivers of its recent development: the globalisation of the fashion industry, the emergence of the fast fashion model, and the increased use of low-cost synthetic fibres.

Finally, the study sets out recommendations for improving the quality of trade flows of second-hand clothes globally by recommending changes to international trade agreements and taking domestic policy action in both exporting and importing countries – using the examples of the EU and Chile.

Chapter 1.

The Chilean perspective

Introduction

The findings of this chapter are based on primary and secondary sources. Primary sources mainly consist of interviews with government officials at the national and sub-national levels from the Ministry of Environment, Ministry of Finance, Customs, the Undersecretary of International Economic Relations (SUBREI) and the Regional Government of Tarapacá, representatives from the Municipality of Alto Hospicio and stakeholders from the private sector, such as ZOFRI and the Port of Iquique, among others, including market stall holders, business owners, and representatives of local civil society organisations. The secondary sources include references from literature reviews and statistics from UN Comtrade⁴, WITS (World Bank)⁵, and the Chilean National Customs Service.

Major textile dumps have appeared in the Atacama Desert in recent years

In 2021 and 2022, the Atacama Desert in Chile drew the international community's attention due to the pollution caused by textile waste mainly from the United States, China and the European Union. In 2022, Chile received approximately 124,000 tonnes of second-hand clothing and textiles⁶. Around two-thirds entered the country through ZOFRI in the Tarapacá region. Some of these clothes had not been sold in the market of origin and still carried their original labels, while others were torn and damaged. They entered the country as second-hand clothing packed in 900 kg bales.

According to satellite images, the problem started in 2012 in the town of Alto Hospicio, with the establishment of illegal dumps of tyres, clothing, and textile products. These dumps cover approximately 300 hectares and are estimated to contain around 30,000 tonnes of textile waste. The geographical characteristics of the region, with vast desert areas, make it an ideal place to discard clothes or other waste since they can be placed far from large residential neighbourhoods, seemingly disconnecting them from any environmental impact. Textile landfills, also known as garbage dumps or micro-dumps, are scattered outdoors near the town of Alto Hospicio. They are characterised by being collection centres for large amounts of

4 The United Nations Comtrade database aggregates detailed global annual and monthly trade statistics by product and trading partner.

5 The World Integrated Trade Solution (WITS) software from the World Bank provides access to international merchandise trade, tariff and non-tariff measures (NTM) data.

6 Chilean National Customs Service data.

clothing and footwear, as well as other types of waste including tyres, construction materials, glass and plastic containers, and household garbage (see Box 1).

Since there are no authorised places to dispose of second-hand textiles and clothing, the only solution has been to burn them, which can cause air pollution for up to 10 days and negatively impact the health of individuals in the surrounding area. Emissions from textile incineration include heavy metals, acid gases, particulate matter and dioxins, which are harmful to human health and contribute to various types of cancers, birth defects, lung and respiratory diseases, strokes and cardiovascular diseases, among others. They also damage the environment by releasing microfibres (microplastics), leaching toxic chemicals into the soil and groundwater, and releasing methane into the atmosphere.

→| Box 1. Account of a field visit to the textile dumps around the town of Alto Hospicio

In our field visit, we could show that some clothing found in the landfills of Alto Hospicio is initially in good condition, meaning it could have been sold or reused. However, once garments are under the sun in arid conditions, they degrade.

Desierto Vestido (Clothed Desert), a civil society organisation that makes the practices of waste and incineration of clothes in the region visible and denounces them, estimates that there are 104 micro-dumps in the area, of which three are large and exclusively made up of textile waste: the landfills Paso La Mula, Caleta Buena and El Boro. The organisation estimates that throwing away excess clothing in the area has been going on for at least fifteen years and has increased over the last five. Bastián Barriá, Co-founder of Desierto Vestido says: “The clothing waste problem has had a lot of media coverage in recent years, showing what is happening in the region. This has made some of those responsible for discarding clothes change their behaviour. They usually go up (to Alto Hospicio) during the night or early morning and often set fire to the clothes immediately after throwing them there.”

Paso La Mula was the largest textile dump in the region and the country for several years. In June 2022, the mega garbage dump caught fire completely. According to neighbours, it burned for several days until the Municipality of Alto Hospicio covered the fire with earth and sand to prevent it from spreading and contaminating the surrounding area. Today, large piles of sand, earth and clothing can be seen in the dump. The clothes are either incinerated, semi-incinerated or free of evidence of having been in a fire. After the burning of the Paso La Mula dump, the Caleta Buena and El Boro landfills began to receive more textile waste, continuing the practice of disposing of rubbish in the desert.

Mrs. Manuela, her disabled husband, and her son, who suffers from drug addiction, live in a makeshift house of lightweight construction on the grounds of the Paso La Mula landfill. She told us that the fire harmed her since she used to earn some income by searching for clothes near her home that she sold to merchants.

The perception of what is garbage and what is not depends primarily on one's social status. What for some is waste for others is a resource that still has value. The town of Alto Hospicio has a high share of people living in precariousness and socioeconomic vulnerability who dig through the clothes abandoned in the desert to find those in good enough condition to be resold. Many of these people are homeless or live in land occupations; some have addictions, and others are migrants who have recently arrived in the country and live in extreme poverty. In most cases, the garments they manage to rescue are sold to other merchants in La Quebradilla's market.

The head of Environment of the Municipality of Alto Hospicio, Edgar Ortega, said in an interview that, even if there were a recycling plant in the area, textiles that have been in the desert for a long time cannot be recovered. The municipality explored the possibility of incinerating textile waste in a double-filter chamber. However, air quality measurements were insufficient, so it was ruled out as a viable option for waste disposal. Despite the problems that textile landfills have caused to the local area, the authorities do not have scientific studies on the environmental and health impacts.



Photo 2. The Caleta Buena Textile landfill in Alto Hospicio
Source: *Desierto Vestido, March 2023*



Photo 1. The Paso La Mula textile landfill in Alto Hospicio
Source: *Field visit, March 2023.*



Photo 3. Textile burning, Paso La Mula landfill
Source: *Desierto Vestido, June 2022.*

The arrival of used clothes in Chile and their onward journey

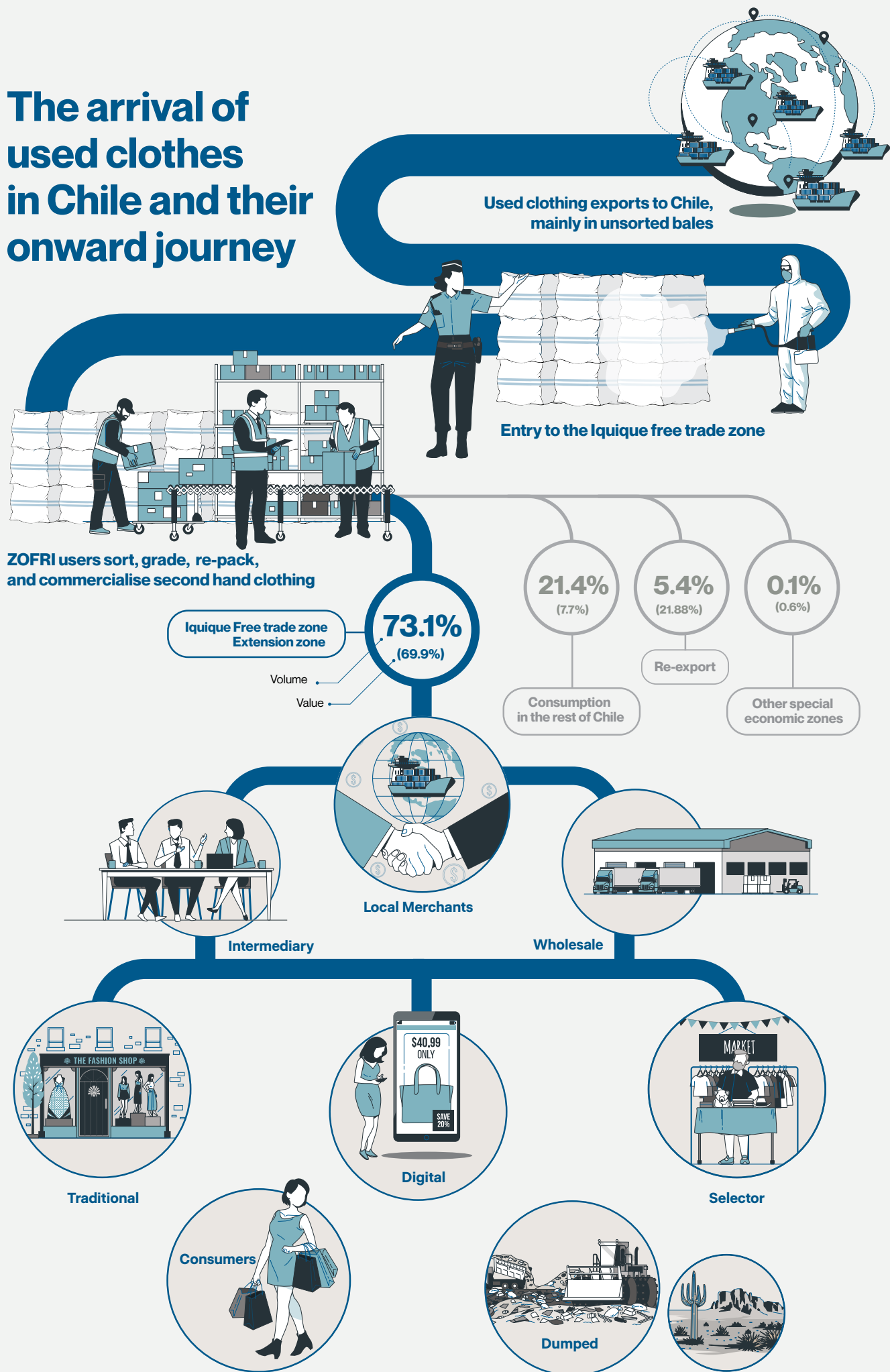


Diagram 1: The arrival of second-hand clothes in Chile and their onward journey

The route of waste textiles to the dumps is via a web of second-hand clothing traders in the Tarapacá region

For second-hand clothing to end up in the Atacama Desert, it will likely have arrived in Chile via ZOFRI. From there it has a potentially complex onward journey via the web of merchants and traders that operate in the port and surrounding area – either to a customer in the local area or a dump in the desert. It could also be transported to another region of Chile or re-exported to a third country. Diagram 1 gives an overview of the three main flows and their sizes.

The following section presents the volume and value of second-hand clothing entering the Port of Iquique and sets it in the context of imports of these products into Chile. It then describes each of the main markets in the region that plays a vital role in the second-hand clothing value chain, including by presenting first-hand accounts of some of the traders gained as results of field work undertaken in the area in March-April 2023.

The main entry point of second-hand clothing into Chile is ZOFRI

Note on data: *there are differences in the methodology and inclusion criteria applied to trade data, both by volume and value, reported by UN COMTRADE and by the Chilean National Customs Service. It is essential to bear these differences in mind when comparing statistics reported by the two sources in this section of the report and in Appendix 3.*

The city of Iquique, in the Tarapacá region of northern Chile, has a free trade zone known as ZOFRI. Free trade zones correspond to geographical areas where business development is promoted by exempting income tax, value-added tax and import levies. Once containers of clothing are inspected in the Port of Iquique by the Chilean Agricultural and Livestock Service (SAG by its acronym in Spanish) and reviewed by customs officials, and the relevant documents are found to be in order, the cargo is moved from the port to ZOFRI in trucks. The containers enter ZOFRI and are delivered to the companies responsible for their admission. The containers are unloaded at the companies' warehouses, and the clothes inside are checked, sorted, and repacked into bales for distribution inside and outside the region. See Appendix 2 for more information on the history and legal status of ZOFRI.

Between 2019 and 2022, ZOFRI received an average of 64,876 tonnes of second-hand clothing per year (see Table 1). Most of these clothes, by volume and by value, stay in the nearby Iquique free trade extension zone (see Diagram 1). Those clothes dispatched to the rest of Chile are relatively low value, while those redirected to other special economic zones in Chile or re-exported to other countries are relatively high value (see Tables 1 and 2). Of those goods re-exported from Chile, many go to countries belonging to the “The Axis of Capricorn” such as Bolivia (P.S. of), Paraguay, Argentina, and southern Brazil (Muñoz, Garcés & Morales, 2022). A smaller proportion are exported to Asia, Europe, and Africa. Table 3 shows that ZOFRI accounts for the entry into Chile of around two-thirds of all second-hand clothing, while Appendix 3 presents more details on the remaining third. Appendix 4 provides detail on the second-hand clothing trade from the perspective of the Latin American region.

Table 1. Entry of second-hand clothing to Chile through ZOFRI, tonnes, 2019-2022

	2019	2020	2021	2022	Average 2019-2022	Average 2019-2022 (% of total)
Iquique Free Trade Extension Zone	45,430	25,887	51,606	66,746	47,417	73.1
Consumption in the rest of Chile	15,646	10,542	15,884	13,577	13,912	21.4
Re-export	4,340	2,200	3,076	4,365	4,340	5.4
Other Special Economic Zones	97	36	44	30	52	0.1
Total	65,512	38,665	70,610	84,718	64,876	100

Source: Chilean National Customs Service

Table 2. Entry of second-hand clothing to Chile through ZOFRI, USD thousand, 2019-2022

	2019	2020	2021	2022	Average 2019-2022	Average Participation (% of total)
Iquique Free Trade Extension Zone	51,360	35,740	75,622	99,894	65,654	69.9
Consumption in the rest of Chile	6,875	4,926	9,129	7,883	7,203	7.7
Re-export	23,546	11,522	15,401	31,527	20,499	21.8
Other Special Economic Zones	553	467	512	571	526	0.6
Total	82,334	52,654	100,664	139,876	93,882	100

Source: Chilean National Customs Service

Table 3. Total entry of second-hand clothing to Chile, tonnes, 2019-2022

	2019	2020	2021	2022	Average 2019-2022	Average share
ZOFRI entry	65,512	38,665	70,610	84,718	64,876	64.30%
Other imports	28,022	31,062	45,801	39,178	36,016	35.70%
Total entry	93,534	69,727	116,411	123,896	100,892	100.00%

Source: Chilean National Customs Service

Trading companies in ZOFRI receive shipments of second-hand clothes

The ZOFRI Wholesale Business Centre houses over 2,000 entrepreneurs of about 40 nationalities, particularly Chilean, Chinese, Indian and Pakistani. According to the information reported by ZOFRI, the centre has 1,032 sites covering an area of 871,466 m² which together generated revenues for ZOFRI of CLP 13 billion (USD 14.3 million).

The Business Centre has walled premises and an industrial quarter. The walled premises have infrastructure to store, market, and distribute products, security, and controlled access. They are divided into two sectors, with 681 sheds (mostly warehouses) distributed across 33 blocks used for depositing goods. In the industrial neighbourhood, there are 351 sites distributed across 8 blocks that blend with the city, so they are freely accessible and have streets for public use.

According to our interviews, ZOFRI houses approximately 50 companies engaged in importing and marketing second-hand clothing. Box 2 details a field visit to one of these companies in 2023. The number of companies importing textiles varies as many do not focus on this product and adjust their stock according to seasonal changes in demand. For example, during the summer break in January and February, demand for second-hand clothes is low, so they import other products.

The entry cost of second-hand clothing amounts to transporting the container and having it fumigated on arrival. The average cost of shipping a container of second-hand clothes to the port of Iquique is approximately USD 7,500. Each container has between 19,000 and 21,000 kg of second-hand clothing, which gives an estimated average cost of USD 0.38-0.42 per kg of second-hand clothing entering the port of Iquique⁷. Imports from the United States require fumigation costing approximately USD 500 per container.

→| Box 2. A field visit to Sardes Ltda., a trader of second-hand clothing

Sardes Ltda. is a company located on Santa Cruz Street in the Industrial District of Iquique. It imports and exports second-hand clothing. Samet Hozer, the owner of Turkish descent, has been doing business in Chile for almost 10 years, an activity that he previously developed in Spain. The company's warehouse is spacious and has two floors.

Strategy

Since the companies in ZOFRI must account for what happens to each of the products they receive, the business model of Sardes Ltda. includes a series of strategies to recover, repair and reuse second-hand textiles that arrive in poor condition. For example, pillows are delivered to a woman who washes them and reuses the filling for other pillows, cushions, or other products to be marketed within the fairs and markets of the region. Similarly, suitcases that arrive broken or without wheels are repaired by a worker and sold at fairs. According to Hozer, approximately 2% of the clothes entering Chile are not recoverable and are sent for recycling as wipes for the mining industry of Antofagasta. "This is a business; we try to recover and obtain value from all the cargo we import; we will not throw away clothes if we can find a second use [for them]," says Hozer.

⁷ It should be noted that the prices quoted here were current during the COVID-19 pandemic and have since fallen.



Photo 4. Exterior view of the company Sardes Ltda.
Source: <https://www.sardes.cl/>

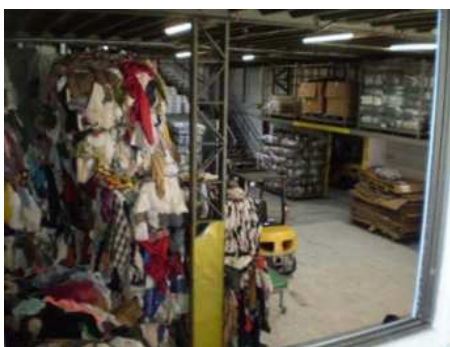


Photo 5. Overview of the second-hand clothing warehouse
Source: Field visit to the company, March 2023



Photo 6. Tied packages of second-hand clothing before classification
Source: Field visit to the company, March 2023

Arrival of second-hand clothes

Second-hand clothes arrive in large bags of over 100 kg each or wrapped in cardboard and tied with wires. In both cases, they have no formal packaging but are wrapped in ways similar to how they were bundled together at the collection points in the cities where they were deposited. The clothes arrive without a selection process to sort out the garbage and are not classified by quality. They require a local selection and classification process, which increases their estimated average cost to USD 1.2 per kilo. On average, a typical importer can process between 10 to 12 containers per month.

Preparation for sorting

The containers are opened and unloaded on the shed's ground floor. At the time of the visit, the merchandise received came from the United States, and the cardboard boxes holding the clothes had the names of the cities of origin written on them by hand. The process begins with the opening of the clothing parcels. The male workers break the bags and remove the wires and cardboard and the clothes are arranged in metal cages. In the containers, clothes are loose, piled up, and transferred by elevator to the first floor.

The sorting process

On the first floor, the clothes are reviewed twice and packed. During the first review, done by women, garments are separated according to categories: men's clothing, women's clothing, children's clothing, household linen, shoes, or others. The separated clothes are again arranged in cages and manually transferred to the sector where the second review will occur.

During the second review, clothing is classified according to the following categories: sex, size, quality, fabric type, fashion trend or season, etc. This classification, also done by women, can reach up to 120 different categories, which are divided into three or four groups, depending on each importing company, from which the garments become "first-selection clothing", "second-selection clothing", "third-selection clothing", and "fourth-selection clothing". First-selection clothing considers clothes in good condition, fabrics without failure, clean and without stains and includes new and labelled clothing. The second category may have dirt and fabrics with some faults from use or rubbing. The third and fourth categories include clothing in poor condition (stained or torn) and incorporate shoes and other garments. In some cases, and at customers' request, bales of "premium" category are made with clothes of luxury or vintage brands.

The air is dense in the warehouse due to fibres and dust from clothes. Most workers wear masks to avoid breathing in the particles. 120 people work in the company, of whom about two-thirds are women and one-third men, with a marked division of labour by gender. Most women overseeing garment selection have worked in the field for years and have the experience or “the eye” to select quickly, according to the above criteria. Men engage in tasks that require greater physical strength, such as moving cages from one section to another and compressing clothes into bales.

Most workers acquire some specialization and are trained on the job based on the selection criteria established by the importers. Labour mobility between companies is high; workers usually move from one company to another and have years of experience in the field. In contractual terms, the employment relationship is not the same for everyone; some work with fee slips, and others have fixed-term or indefinite contracts, depending on their work.

The packaging process

After the manual selection, male operators transfer used garments in smaller cages to the packaging process. The packaging process involves preparing bales of 40x40x60 cm by compressing the clothes, wrapping them in transparent plastic, and securing them with plastic ties. The bales sold to the public can weigh between 15 and 45 kg, depending on the importing company and the selection of clothing, and sometimes as requested by the customer. According to the law, bags must not exceed 25 kilos if carried by people. Bales of greater weight must be moved with manual carts or forklift trucks.

The path followed by the bundled garments is diverse. Some products are sent to the company’s branches elsewhere in Chile (Santiago, Concepción, and Puerto Montt). Others stay in the region to be sold to retailers who sell the clothes in markets and free trade fairs. Other bales are re-exported to countries such as Madagascar.



Photo 8. Female workers engaged in selection tasks
Source: Field visit to the company, March 2023



Photo 7. Cages with classified clothing
Source: Field visit to the company, March 2023

Merchants in the Tarapacá region conduct the onward trade of second-hand clothes

Depending on the route followed by the garments in the region, this study has identified five categories of intermediary merchants between ZOFRI and the final consumer:

Traditional merchants: These buy bales directly from ZOFRI and sell them at trade fairs to other merchants or to the final consumer.

Selector merchants: These buy from other trade fairs, in the same trade fair or in other free trade fairs and markets in the sector.

Intermediary merchants: These buy from wholesalers at points of sale outside trade fairs or markets.

Wholesalers: These buy bales in ZOFRI and open them in different places so that their customers can select the garments. They are usually installed in the vicinity of final points of sale and sell to retailers.

Digital merchants: These buy from any of the above and sell through e-commerce platforms and social networks such as Facebook, Instagram and Mercado Libre. Through this mechanism, they can sell anywhere in Chile.

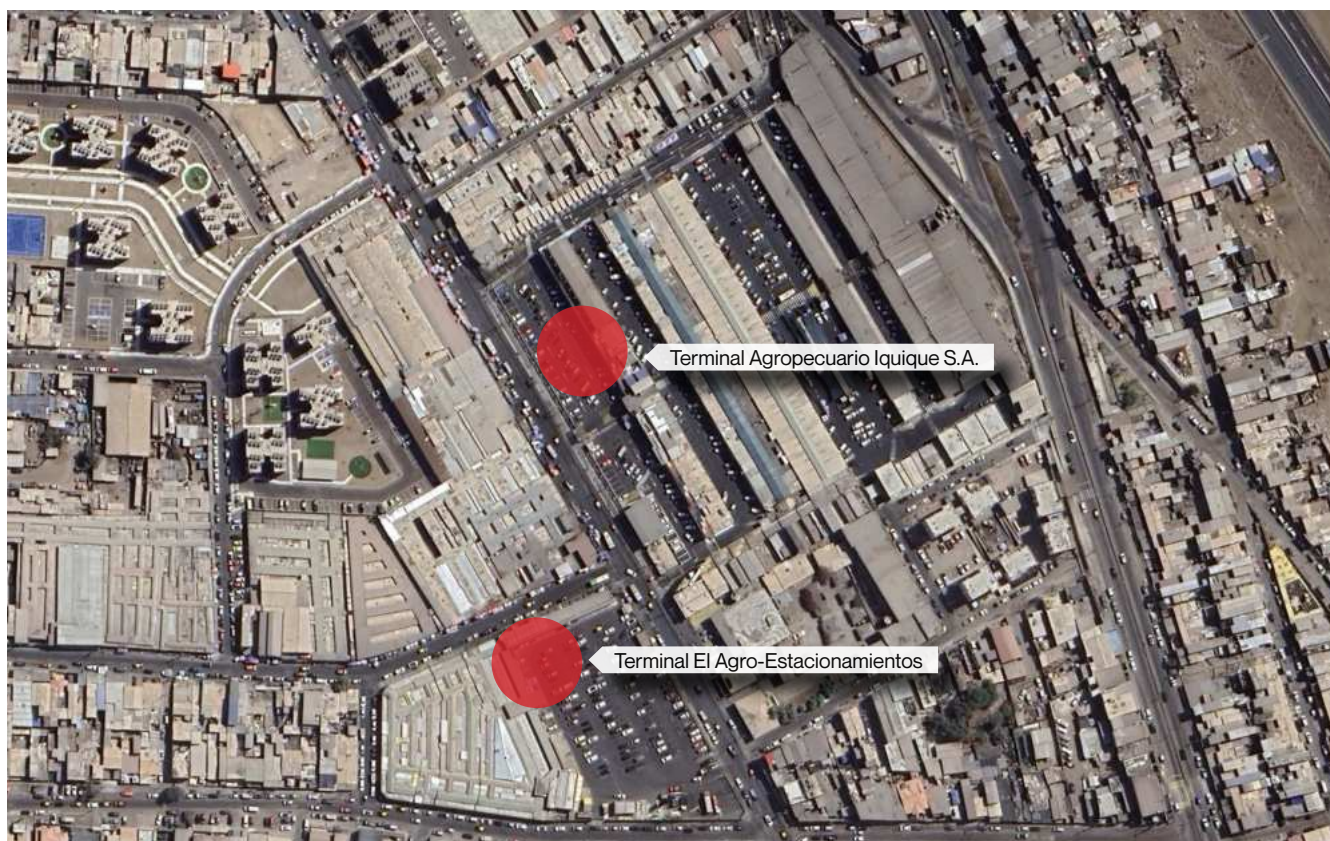
According to information collected in the field, the value of a bale will depend on its weight and the category of clothing it contains, and this value will vary considerably from one year to the next. At the time of the field visit, a 36 kg bale of first-class women's clothing was worth CLP 220,000 (USD 262) and a second tier in the same segment CLP 180,000 (USD 214). Bales of household linen usually weigh 45 kg, contain fewer, heavier items, and cost around CLP 180,000 (USD 214). The third- and fourth-category bales of 36 kg can cost between CLP 20,000 and CLP 40,000 (USD 24 to 48). The most expensive bales are sportswear for women and men, costing up to CLP 480,000 (USD 571). Bale prices fluctuate weekly. Many traders regularly buy bales from two or three ZOFRI importers.

Most stallholders buying simultaneously first- and second-category bales at ZOFRI are also forced to buy lower category clothing. This is called "hooking" and involves buying clothes that are not chosen and for which a sales strategy is challenging to find. For example, a dealer may specialise in women's clothing and the "hook" involves buying a bundle of children's clothes or linen. The number of garments obtained from a bundle of clothes depends on its weight and the type and size of garments it contains. On average, a bale of 36 kg may contain 120 t-shirts and 50 pairs of men's trousers in smaller sizes (S-M-L), a bale of 45 kg may contain 100 pairs of jeans, and a bale of 25 kg may contain 50 garments.

The second-hand garments that remain in the area, and have the tax benefits of ZOFRI, are sold through intermediaries who finish the distribution process through informal sale in free trade fairs.

Terminal Agropecuario S.A, Iquique

Popularly known as 'El Agro', this agriculture terminal is the largest market in the Tarapacá Region. It is the largest roofed market in the city of Iquique. It was founded in 1979 and moved to its current location in 1982. It operates from Tuesday to Sunday, brings in merchants from



Iquique, Alto Hospicio and localities outside Chile, especially Bolivia (P.S. of) and southern Peru, and has smaller headquarters in the city of Arica. It has high economic, commercial, and heritage value for the area.

Photo 9. Aerial view of the Agricultural Terminal ('El Agro')

Source: Google Earth, April 2023

Agricultural products, fruits, vegetables, and general groceries are the main products sold at the market, but other items, including large volumes of second-hand clothing, can also be found.

The Agro is a unique trade fair with fixed infrastructure, including a roof, paved corridors, and bathrooms. Merchants can close their premises and leave their merchandise inside overnight, facilitating stock management. Agricultural tenants pay a monthly rent of CLP 80,000 (USD 96) and CLP 5,000 (USD 6) for the right to electricity. The fair has an administration.

In the Agro, clothes are ordered inside the stalls, which operate as sales spaces and storage. Agro merchants specialise in a specific clothing category – such as women's, men's, children's – or in footwear or homewear. Sale prices range from CLP 5,000 to CLP 30,000 (USD 6 to 36) depending on the garment, which has usually been washed and ironed. The price must cover the fixed expenses and the profit margin for the dealers. Merchants also have crates with much lower quality clothes for prices ranging from CLP 500 to CLP 1,000 (USD 0.6 to 1.2).

The clothing marketed within the Agro comes mainly from the purchase of bales in ZOFRI (traditional merchants) or retail purchases in La Quebradilla, the Itinerant Fair or Intermediaries (selector merchants or intermediary merchants). The merchants interviewed told us that they buy fewer and fewer bales and prefer to select clothes in the free trade fairs or buy from intermediaries because: "The quality of clothes is worsening. Even clothes from bales labelled first quality are often not. So, it is no longer convenient to buy bales because the clothes end up not being sold and then you must get rid of them" – Miriam, trader of second-hand clothes in the Agro since 2002.



Photo 10. Miriam at her stall in the Agro fair
Source: Field visit to the Agro fair, March 2023



Photo 11. Crate with María's offers in the Agro fair
Source: Field visit to the Agro fair, March 2023



Photo 12. Itinerant Fair of Iquique
Source: Field visit, April 2023

Returned clothes are also sold in the Agro. These are new clothes, usually from well-known brands, left unsold in fast-fashion chain stores or on e-commerce marketplaces. In ZOFRI, the cost of one bin of 50 garments that have been returned unused costs CLP 700,000 (USD 833), while the value of each returned garment in the Agro ranges from CLP 15,000 to CLP 40,000 (USD 18 to 48) since in ZOFRI such clothes are sold in bulk while in the Agro they are sold individually.

María has been a stallholder at the Agro for over twenty years and specialises in selling men's clothing. She sells garments including blazers, gilets, trousers, and leather jackets. Opposite the stall she has had for decades, María has set up a second return-clothing business. "Second-hand clothes are coming out very bad; it's not what it used to be; we used to receive quality. That's why I decided to buy these boxes of clothes for youngsters sold to me by the same importers. They're much more expensive, but people like them because they're new, 'good brand' and fashionable, so I still sell."

Itinerant Fair, Iquique

The itinerant Fair, as its name indicates, is a mobile free trade fair that moves through the city of Iquique from Tuesdays to Sundays. The fair is where Iquique's population can buy anything from fruit and vegetables, new and second-hand clothes, various household items, tools and machines. The merchants interviewed indicate that they have two ways of purchasing second-hand clothes. The first is buying bales in ZOFRI, and the second is buying clothes individually at La Quebradilla Fair in Alto Hospicio. At the itinerant fair, you do not pay the municipality for permission to have a stall, thereby reducing costs; you must arrive early and look for a good space to settle. Each garment sells for between CLP 3,000 to CLP 10,000 (USD 4 to 12).

La Quebradilla fair, Alto Hospicio

The La Quebradilla fair is located in a natural ravine, originally a garbage dump that the nearby inhabitants began to recover with the support of the local government. The land is owned by the Housing and Urban Planning Service (SERVIU), which ceded its administration to the Municipality of Alto Hospicio to relocate the old free trade fair of "Las Parcelas" and group other informal points of sale scattered around the city.

The fair is about 1 kilometre long and 40 to 100 metres wide and is located between the ravine to the east, the Alto Hospicio waterfront to the west, Los Nogales street to the north and Los Damascos to the south. In the first three rows to the west are the stallholders with second-hand clothes, who present their wares on counters and hangers.

La Quebradilla fair is organised through an administration composed of the stallholders themselves. The fair is open from Tuesday to Sunday with the busiest days being weekends and holidays. The space used by each stallholder is marked on the ground with chalk in areas of 3x3m and has retractable blue

Photo 13. Aerial view of La Quebradilla fair

Source: Google Earth, April 2023



awnings to protect clothes from the sun. There are two types of stallholders in La Quebradilla: the partner stallholders who pay the Municipality of Alto Hospicio a permit of CLP 16,000 (USD 19) per month for a site, and the temporary stallholders who rent stalls for CLP 2,000 per day (USD 2).

The second-hand clothes offered at this fair come from bales purchased at ZOFRI via three main routes: selected directly by the stallholder, purchased from intermediaries installed on the edge of the ravine who allow stallholders to buy individual garments, or through the acquisition of third-quality bales from other stallholders or online.

The product offer is diverse. Some stalls specialise in specific categories of garments or textiles, such as cotton t-shirts for children or household linen. The products are selected, washed and ironed before being arranged on hangers or countertops. These dealers sell garments ranging from CLP 1,000 to CLP 10,000 (USD 1.2 to 12). Other stallholders offer batches of women's, men's, or children's clothing and household linen. These clothes are not sorted or washed and are only arranged in large piles; they command a price from CLP 100 to CLP 5,000 (USD 0.12 to 6).



Photo 14. Second-hand clothing stand at La Quebradilla fair

Source: Field visit, March 2023

Supply of merchandise and strategies for its sale and storage

The traders at free trade fairs that we interviewed in the field tell us that the quantity and regularity of their supply of merchandise is variable. Not all vendors buy bales in ZOFRI. Many have established diverse supply chains with an array of other market players. Their objective is to sell clothes to customers as quickly as possible as they do not want to be stuck with clothes of no value. Merchants are therefore frequently renewing their stock; if they have unsold garments or textiles, they store them in their homes. They then take new merchandise to their stalls and once this is sold, they fetch the merchandise stored in their homes. For the clothing offer to be attractive to customers it must be constantly renewed.

Due to the volumes of clothing involved and how they are purchased, merchants site their homes on the fairgrounds and operate them as authentic product warehouses. The women we interviewed in the field told us that the selection of clothes they take from their homes to the stalls depends on the season, the types of clothes most appreciated by customers and, in some cases, specific orders from regular customers.

Chile's regulatory regime influences the entry of second-hand clothing

The arrival of large volumes of second-hand clothes in the Tarapacá region is influenced by the trade regime in these products, both at the national level and in relation to ZOFRI. The section below reviews the main elements of the relevant regulations that apply to the rest of the country. Import regulations of other Latin American and Caribbean countries are presented in Appendix 3.

Import tariffs and quantity restrictions

Chile's most favoured nation (MFN) tariff for all imported goods, including second-hand clothing, is 6% with few exceptions. However, as Chile has free trade agreements with its main trading partners, the effective tariff is only 0.77% (National Customs Service, 2021). In addition, a value-added tax of 19% is charged on the CIF value (cost, insurance, and freight) of the products⁸, plus the *ad valorem* duty. Used goods, including worn clothing, are charged a surcharge of 50% above the relevant import duty, which results in a combined tariff of 9%⁹.

When Chile imports goods from a country with which it has a trade agreement, the *ad valorem* duty may be zero or subject to a tariff reduction.

⁸ For more information see <https://comtrade.un.org/data/MethodologyGuideforComtradePlus.pdf>

⁹ Goods exempt from this additional duty include used ambulances, armoured cars, public-road-cleaning vehicles, mobile homes, prison vans and cement-making vehicles.

The Ministry of Economy in Chile establishes freedom of import. It does not allow the establishment of quotas for imports (or exports), so Chile cannot apply quantitative restrictions. Chile does not have any import licensing regime. However, importing certain products requires approval, authorisation, or a certificate from an official entity to be submitted at any customs destination. Chilean legislation indicates that these documents are granted as a routine procedure.

Sanitation and fumigation

The Ministry of Health's Decree N°2389/1995 establishes that any worn clothing, regardless of the type of material (wool, cotton, nylon, polyester etc.), must have a sanitation certificate issued by the competent authority in the country of origin or by a certification entity authorised for this purpose. The aim is to prevent the spread of diseases through second-hand clothing.

The certificate must indicate that the sanitation procedures were carried out before shipment. This sanitation certificate must be presented duly legalised. Decree N°2389/1995 also shows that sanitation is defined as:

“Any process before its commercialization that guarantees the sanitization of the product, a process that can be fumigation with formaldehyde, methyl bromide or another fumigant with similar effects or previous effects or washing with dry or humid heat carried out with different physical or chemical agents.”

If second-hand clothing violates the sanitation process, its entry will not be authorised.

Additionally, SAG Resolution N°971 of March 2018 stipulates that, for phytosanitary purposes, worn clothing, used toys and used footwear from the United States require prior control before being cleared to enter Chile. The resolution requires the products mentioned above to be subject to fumigation treatments in the country of origin by companies authorised by the Animal & Plant Health Inspection Service of the United States, Department of Agriculture (USDA/APHIS) or by authorised companies or by the competent federal or state agency. The importing company must also prove that the fumigation treatment has been carried out by issuing an original certificate. The objective of this measure is to avoid the entry and propagation of the Halyomorpha Halys pest into the territory, as it is dangerous to vegetable crops.

Labelling

Once the second-hand clothing has entered the country, it must comply with some conditions to be sold. Decree N°26 of 1984 of the Ministry of Economy sets labelling requirements for textile and apparel products. Articles 23 and 24 establish that the labelling for used imported clothing must include the following information in Spanish: i) the country from which the garment was imported, at the extreme top of the label; ii) the importer's name or importer's company name, at the bottom; iii) an indication that it is “Second-hand clothing” in the centre of the label in clearly written characters; and iv) a size code (small, medium, large or extra-large), located somewhere on the label.

Import declaration

Once the import declaration of imports (DIN by its acronym in Spanish) has been accepted for processing, the National Customs Service may inspect the document, conduct a physical inspection or assess the value of the goods to verify the information declared by the importer.

The entry of goods into ZOFRI is accredited by a declaration of entry issued by The Customs Inspection Department (document Z), which is assigned to a company for the type and volume of product entering the country. This document allows the transfer from the port to ZOFRI. The Customs Inspection Department maintains an inventory of all merchandise entering the country and conducts random checks on importers. Customs is legally authorised to destroy merchandise or allocate it to recycling to remove it from the inventory, in the case, for example, of counterfeit clothing.

Inspections at ZOFRI

Second-hand clothing importers in ZOFRI receive surprise inspections from the Regional Representatives of the Ministries (SEREMI) of Environment, Health, Labour and Transport, along with Iquique Customs and Investigation Police (PDI by its acronym in Spanish). These inspections verify that the information in the DIN forms matches the merchandise and physical stock. Some of these inspections revealed that certain bundles of second-hand clothing enter ZOFRI as “garbage”. Often, these bundles are transported directly to illegal dumps¹⁰. Through these multisectoral inspections, used-clothing importers that do not comply with current regulations on occupational safety, hygiene and sanitary conditions are closed until they can do so¹¹.

These inspections sometimes find differences between declared vs physical stocks, meaning they are not registered in the customs system. Apart from perimeter control duties, no permanent customs officials are deployed within the free zones to conduct regular inventory inspections. Instead, the usual controls of the cargo movement and inventory are the ZOFRI administrators’ responsibility and Customs deals with ex-post controls, when necessary, based on risk-profile inspections.

10 SEREMI of Environment, Tarapacá region. Retrieved on February 9th, 2023. https://twitter.com/MMA_Tarapaca/status/1623724110344847361?ref_src=twsrc%5Etfw%7Ctwcamp%5Eembeddedtimeline%7Cwterm%5Escreen-name%3AMMA_Tarapaca%7Cwcon%5Es1

11 La Mañana Por Paulina. (2023, February 15). LA MAÑANA POR PAULINA [Video] at https://www.youtube.com/watch?v=6J0_HqL2ea8

Waste management legislation at national, regional, and local levels is insufficient to deal with the quantities of textile waste received

Once unwanted second-hand clothes have been dumped or otherwise disposed of, they are considered waste and subject to national, regional, and local waste management legislation. This section reviews all three.

National

In Chile, unlike in other countries, textile waste from second-hand clothing is not considered hazardous waste. However, the Health Authority has the power to verify “that any waste is dangerous because it presents some dangerous characteristic under the provisions of articles 12 to 18” of Decree No. 148/2004.

Chile’s legal and institutional framework for waste management started in 1967 with the promulgation of the Sanitary Code. During the 1980s and 1990s, the framework was refined and expanded with the enactment of further pieces of regulations such as the Sanitary Regulations for the Operation of Garbage Dumps¹², the Constitutional Organic Law of Municipalities, the regulation that affects the transport of hazardous cargo, and the ratification of the Basel Convention (Supreme Decree No. 685).

In 2005, the Comprehensive Policy on Solid Waste Management was enacted. It aims “to ensure that solid waste management is carried out with minimal risk to the health of the population and the environment by promoting a holistic view of waste and ensuring a sustainable and efficient development of the sector.” One of the policy’s actions was to harmonize and complete the existing regulations and evaluate the need for additional legislation.

In 2018, the Ministry of Environment’s National Solid Waste Policy 2018-2030 established guidelines for comprehensive waste management. The policy’s main objective is to prevent waste generation and encourage its recovery and proper management.

The Chilean government is drafting the first standard for the environmental quality of soils. It aims to establish a regulatory framework to help fill the current gap in soil management. This gap specifically pertains to handling contaminated soils or those with the potential presence of contaminants. The goal is to protect people and ecosystems by establishing measures to manage contaminated soils. The lack of a dedicated regulatory framework for soil management and remediation has had a significant impact. It is challenging for public environmental institutions to effectively prevent, assess, remediate, and manage contaminated soils or soils with the potential presence of contaminants. A regulatory framework will allow the State to address the environmental liability caused by second-hand clothes and textiles pollution in the Atacama Desert. This will ensure that the land and surrounding areas are properly restored.

¹² Resolution N° 2444 published on July 31st, 1980, and updated on July 1st, 2005 through Law 20.033.

In addition to laws, norms and regulations, the Institute of National Standards (Instituto de Normalización) has issued a series of standards related to the management of solid waste, such as NCh 3321:2012, which characterises Municipal Solid Waste, and NCh 3376:2015 on the design and operation of Municipal Solid Waste reception and storage facilities.

Regional

Regional authorities have specific responsibilities related to applicable regulations for textile waste management. For example, SEREMIs of Health are responsible for taking action to protect the population's health from environmental risks and for the conservation, improvement, and recovery of the essential elements of the environment that affect it¹³.

SEREMIs of the Environment are responsible for proposing policies and formulating standards, plans and programmes on waste and contaminated soils, as well as for assessing the risk of chemical products, genetically modified organisms and other substances that may affect the environment, without prejudice to the powers of other agencies in public health matters, under the provisions of letter g) of the first article of Law No. 20,417¹⁴.

In 2018, the SEREMI for Environment of Tarapacá convened a public-private working group to address the micro dumps and textile waste problems affecting mainly the Alto Hospicio commune. The working group comprises the Regional Director of Customs, ZOFRI, the SEREMI of transport, the SEREMI of Health and the municipalities of Iquique and Alto Hospicio. The lines of work developed by the working group are:

Inception and generation of textile waste: a diagnosis of the situation with the information of each participating public service and the information available in the Free Zone on imports, discards and disposal of second-hand clothing as waste, etc.

Inspections: the Ministry of Transport and the municipality of Alto Hospicio will execute joint inspections of waste transport regulations

Waste disposal and reuse: a study of initiatives for eliminating waste through its collection and subsequent destruction with economically and environmentally viable alternatives.

Local

At the municipal level, the regulations applicable to solid waste management are:

DFL 725, Sanitary Code (1967), which establishes that municipalities must collect, transport, and eliminate by appropriate methods, as per the National Health Service, the garbage, residues and rubbish that are deposited or produced on urban roads¹⁵.

¹³ In accordance with the provisions of numeral 2, of article 12 of decree with force of law No. 1, of 2005, of the Ministry of Health, which establishes the Consolidated, Coordinated and Systematized Text of decree law No. 2,763, of 1979, and Laws No. 18,993 and No. 18,469.

¹⁴ Law No. 20,417 creates the Ministry of Environment, the Environmental Assessment Service and the Superintendence of the Environment.

¹⁵ The DFL /25 was published in the official gazette in 1968.

D.L. 3,063, Law Decree on Municipal Income¹⁶, which establishes that municipalities should collect residential and industrial solid waste. The law establishes exemption criteria for charging (which results in an exemption for about 70% of the community), environmental programmes (including recycling), and frequency of collection (depending on volumes, accessibility, and further criteria to be established by each municipality through local ordinances).

Law No. 20,879 penalises the transport of waste to clandestine dumps. Under the provisions of article 192 bis, the Ministry of Transport and Telecommunications and the SEREMIs are responsible for supervising motorised, non-motorised or animal-drawn vehicles that transport, transfer or deposit garbage, debris or waste of any kind towards or on public roads or vacant lots, in landfills or clandestine or illegal deposits, or national assets for public use.

Law 20,417 (1988) grants municipalities the power to propose and execute measures related to the environment, apply the environmental norms in the commune that are within its competence, and prepare draft environmental ordinances.

In 2017, the Municipality of Alto Hospicio approved the Municipal Ordinance through mayoral decree No. 982, which regulates the authorisation to transport garbage, debris or waste and establishes the obligation to request prior approval for the transport of waste. Likewise, the ordinance defines the specific routes along which waste is allowed to be transported. The fact that the ordinance does not specifically mention textile waste is not a coincidence, as there is no definition of textile waste or waste in the overarching regulations.

Government initiatives on a circular economy for textiles aim to prevent waste in the first place

While waste management legislation and policy initiatives are crucial in dealing with the results of textile (and other) waste, and the environmental and health effects it can produce, another angle for public policy is to prevent waste from being generated in the first place. Circular economy approaches aim to design out waste by considering all materials to have value either by being returned to productive use in the economy or safely returned to the biosphere.

The following section sets out national and local programmes to further the aims of the circular economy in Chile, including efforts to upcycle materials that would otherwise be considered waste.

National

Framework for Waste Management, Extended Producer Responsibility and the Promotion of Recycling

In 2016, Law 20,920, establishing the Framework for Waste Management, Extended Producer Responsibility and the Promotion of Recycling, marked a milestone. It raised the standard in terms of waste management by incorporating the recovery of waste as a primary element. The law also established guiding principles essential for minimising environmental impacts

¹⁶ It was published in the O.D. on November 20th, 1996, and updated on November 26th, 1999.

Clean Production Agreement Model



Conception



Sectoral Diagnostic and Proposal

Negotiation

Signature

Implementation



Initial Diagnostic

Compliance with Actions and Goals
Monitoring and Control, Intermediate Audits

Final assessment and certification



Final Audit

Validation

Certificate and Maintenance



Final Conformity Assessment and Certification

Diagram 2: Clean Production Agreement Model
Source: Agency for Sustainability and Climate Change

and paving the way for gradually advancing to a circular economy. The law establishes the basis for progressively implementing instruments such as eco-design, certification and deposit-return schemes for a set of priority products: tyres; packaging; electronic and electric devices; lubricants; oils; and batteries.

National Circular-Economy Roadmap

Chile's Circular Economy Roadmap, released in 2020, clarifies and reviews the environmental impacts of certain imported products. The proposed measures include regulating admission criteria for importing plastic products, such as barriers to products that contain oxo-biodegradable plastics. The same measure could be adapted to imported second-hand clothing.

The roadmap also proposes developing minimum standards for importing used products and waste, expanding the range of products subject to the Extended Producer Responsibility Law (EPR Law), and updating the regulatory framework for waste management to facilitate reuse and recovery.

One measure that deserves special attention is the proposal to update customs and tax regulations on the transport of waste from special economic zones, such as ZOFRI.

Regarding the EPR Law, the government has announced that used textiles could be incorporated as a priority product in the medium term after conducting comparative feasibility studies.

Clean Production Agreements

Clean Production Agreements (APL by its acronym in Spanish) are voluntary agreements between the private sector (a group of firms within an industry) and public authorities responsible for matters such as the environment, health, labour safety, energy, water efficiency and productive development. The agreements set objectives, goals, actions and verifications to help achieve clean production. The results of the APL are published annually and reported biennially to the Ministry of Environment. Once the firms fulfil the agreement, they receive a Clean Production Certificate, valid for three years. Diagram 2 sets out the APL work model at a glance.

The APL work model is divided into three stages:

Conception: a sectorial or territorial diagnosis of the productive capacity and environmental reality. This analysis identifies the main gaps and defines a proposal with goals and actions. The negotiation and signing of the agreement follows it.

Implementation: this includes an initial audit to define the baseline, determine the work plan's conformity, and assess impact by reviewing compliance with the goals and actions committed to in the APL.

Final assessment and certification: an independent third party reviews the companies. The companies that receive the validation obtain the APL certificate.

Currently, an APL in new textiles is being prepared that originated from a proposal from the company Cámara Diseña Sostenible. This shows the interest in working on textile material management, not only on waste but also on process.

The initial analysis concluded that managing used and new clothing has different processes. Therefore, the APL focuses on new clothes, including retailers and niche companies importing sportswear.

The central gap identified by the Ministry of Environment and the Agency for Sustainability and Climate Change is the need to agree on basic definitions to ensure every stakeholder has a common understanding.

Regarding imported second-hand clothing in Iquique, the government is considering an APL with ZOFRI and ZOFRI users. However, to progress in this direction, there is a need to quantify the textiles dumped in the desert, carry out an environmental assessment of the textile waste and develop a plan to mitigate the environmental damage caused by the illegal landfills in the desert.

Regional and local

Along with alerting and warning of the environmental impacts in the Atacama Desert, local social organisations have developed a series of initiatives that seek to reduce textile waste, reuse it, and recycle it into new products that can generate income.

Trade Association of Circular Economy of Tarapacá (AGEC)

The AGEC of Tarapacá is a group of entrepreneurs working on reuse, recycling, upcycling and the revaluation of waste. They promote the development of the circular economy in the region and aspire to a more sustainable future for communities. The thirty ventures that are part of AGEC are mainly from Iquique and Alto Hospicio. They are primarily led by women working in textiles, wood furniture, and glass crafts. Casa Circular, a collaborative physical store located in the city of Iquique, has space for the promotion of the products of these partners.

Tarapacá Circular and Regional Executive Waste Secretariat (SER Tarapacá)

Tarapacá Circular is a digital platform that promotes actions that regulate waste disposal, follow the National Waste Policy in the Tarapacá region, and relate to sectoral instruments on waste issues.

SER Tarapacá was created in 2005. It includes representatives of the regional government of Tarapacá, presidential delegates, the Undersecretary of Regional Development, the Ministerial Secretary from the SEREMI for Environment, and representatives of the SEREMI for Health, SEREMI for Housing, the SEREMI for National Goods, and the SEREMI for Social Development and Family.

Desierto Vestido

This organisation seeks to make the socio-environmental consequences of textile waste in the desert visible and search for solutions through the circular economy. It was created by four young leaders trained in the “Territory and Circular Economy” school, which was organised by the NGO CEUS in 2020.

It has worked with various national and international media to show the consequences of clothing overproduction and overconsumption. Desierto Vestido is committed to mitigating the region's waste problems, especially those relating to textiles, by finding solutions that generate employment and position Tarapacá as a centre of circular economy nationwide.

Thanks to their work, the textile landfills have received substantial media coverage, which caught the attention of national, regional, and local authorities. For Desierto Vestido, the region's culture and history must be considered when making public policy decisions.

Casa de Oficios

Casa de Oficios, in the centre of Iquique, is a cultural centre managed by entrepreneurs seeking to promote art, culture, and the circular economy. It was created in 2022 and is in the process of being formalised as a Cultural Corporation. It has workspaces for entrepreneurs, develops craft workshops, and implements environmental education programs with an emphasis on school-age children.

Inside the house, five textile entrepreneurs have workshops. They receive clothes from one of the companies in ZOFRI. If they are in good condition they are sold on; if they are in poor condition they are redesigned using artisanal dyeing techniques or made into new products such as bags and accessories. Textile reuse not only prevents clothing from ending up in dumps or landfills in the region, it also stimulates the local economy and generates jobs for the community. The work model of Casa de Oficios integrates people with disabilities, the unemployed, and the elderly.

María, who is severely disabled, works in the Casa disassembling the clothes to be reused. Her functions include unstitching and removing non-textile elements such as zippers, buttons, crochet hooks, linings, and threads so the entrepreneurs can reuse them. The clothes that do not reach the Casa are delivered to a clothing store in the city that employs a group of local seamstresses to fix and modify disused garments and make home textiles to be sold within the region.

The products of the Casa are commercialised through different fairs in the city and sold online to customers within and outside the region. Ángela Astudillo, founder of Casa de Oficios, says she sees a socioeconomic opportunity in the recovery of textiles, which is a valuable resource that can have a second and even a third life and generate jobs in a creative industry in the region to prevent garments from ending up in landfills or being incinerated.

→| Box 3. A brief history of the Chilean textile industry

Having begun in the 19th century, the Chilean textile and clothing industry was, by the 1960s, able to meet 95% of national demand – its “golden age” (BNC, 2023). However, in the same decade, the global textile relocation process began with a production shift to Asia (ILO, 1996) – see Chapter 3. From 1975, as a result of the neoliberal reforms implemented in Chile after the 1973 coup d’état, the process began of dismantling the regime of import substitution policy, tax and credit incentives, and high tariffs on imported textiles that had protected the national textile industry (BNC, 2023). The economic crisis of 1983 and the inability of the textile industry to maintain its competitiveness forced the first companies out of business. From the 1990s onwards, the surviving companies faced strong competition from the Chinese and Indian textile industries, which produced cotton on a large scale at low cost, and saw their incomes decline. Some of the largest and most emblematic companies in the textile industry closed their doors between 1990 and 2010. As Chapter 3 shows, the increase in trade in second-hand clothes took off in the 2000s. While this trade added to pressures on the textile and clothing industries in importing countries, the seeds of their decline had been sown much earlier.

Conclusion

The large quantities of second-hand clothing that enter Chile - primarily through ZOFRI - are not deemed of high enough value to re-direct to other parts of the country or re-export are difficult for local merchants to deal with effectively. Though these merchants are adept at extracting the most value from their stocks through a web of trading relationships at market-places across the region, large volumes of clothes simply cannot be sold. Since insufficient infrastructure for recycling or even controlled landfills or incineration exists, large tonnages find their way to dumps in the desert. While these sites are convenient and a way to solve the problem, their environmental and human health impacts are considerable. A driver of the flow of waste textiles is the liberal approach taken by the Chilean government to their entry into the country. On the other hand, government bodies have put in place waste management and circular economy initiatives to help combat the problem’s symptoms and causes. The current situation of growing dumps points to the need to redouble efforts on both fronts. Since prevention is better than cure, it is instructive to examine a significant source of second-hand clothes – the next chapter’s subject.

Note: this study did not gather data on which parties dump clothes in the Atacama desert. It also did not survey the recycling or controlled incineration infrastructure in Chile. More research is needed on these topics and the pre-sorting of second-hand clothes to restrict exports of those garments with a market value in the importing country. A forthcoming study under the UNECE project “Advancing Transparency and Traceability of Sustainable Value Chains in the Garment and Footwear Industry” to be undertaken in collaboration with UNECLAC will look further into the latter issue.

Chapter 2.

The European perspective

Introduction

Europe has long been the world's predominant exporting region of second-hand textiles in terms of volume, accounting for a third of the global total (EEA, 2023) and was only surpassed in 2019 by Asia. There has, however, been a lack of transparency and reporting of second-hand clothing trade flows, particularly between Europe and developing countries.

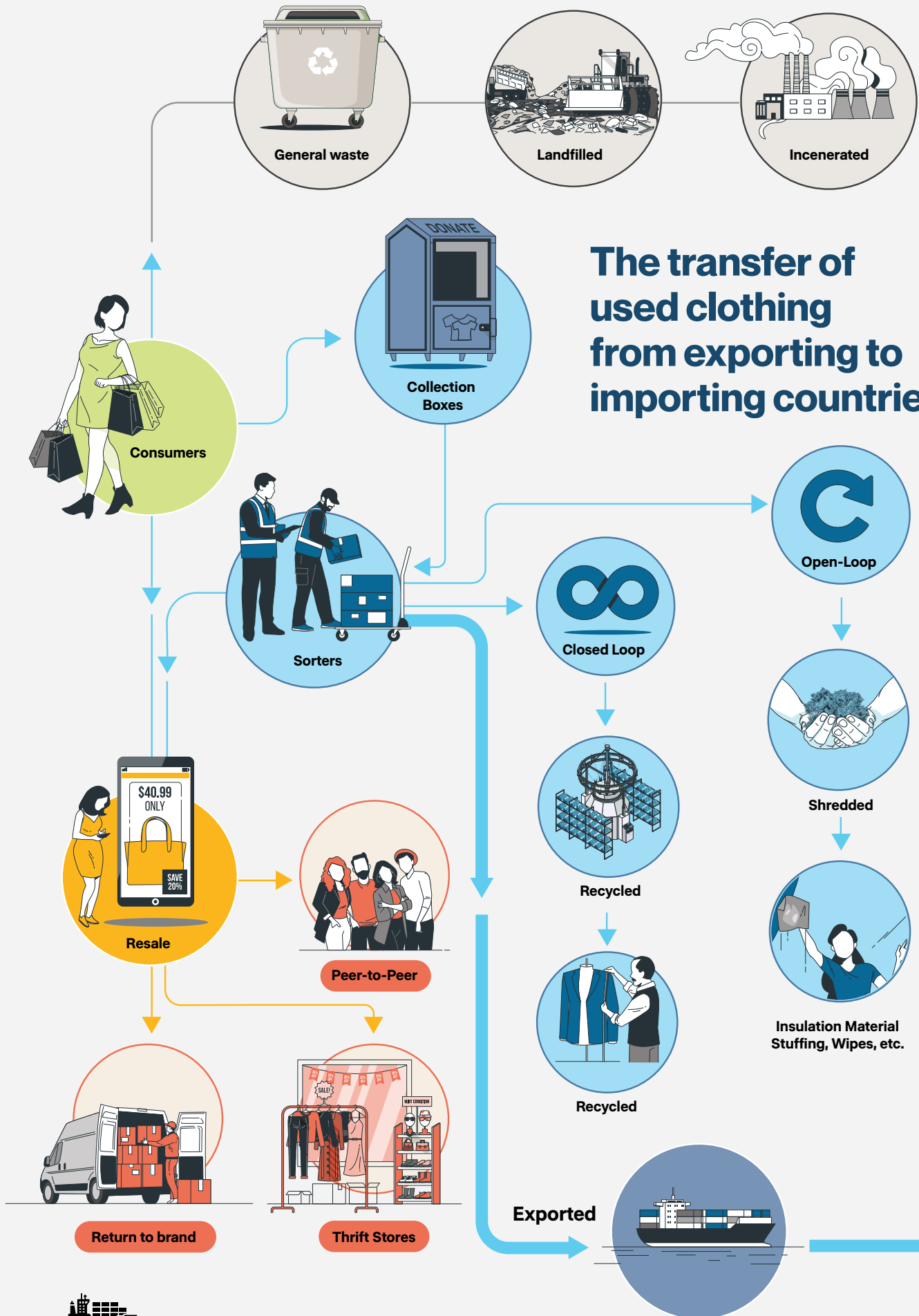
This chapter focuses on the actors, business models, and potential for innovation in second-hand textile processing in Europe. It highlights the barriers European countries encounter in implementing circular systems, which result in exporting discarded textiles to the Global South where they often end up being dumped illegally. It does so by reviewing recent trends in sorting, reusing, and recycling textiles based on existing literature and interviews conducted by UNECE and ECLAC in March 2023 in the Netherlands with representatives from The Hague University of Applied Sciences, Platform to Accelerate the Circular Economy (PACE), Holland Circular Hotspot and independent experts on circular economy in the textile industry.

The cost pressures of dealing with low-value second-hand garments in Europe mean that many are exported

In Europe, discarded clothes can take different paths (see Diagram 3). Most clothes (62%) are thrown away as regular waste, which is then landfilled or incinerated (EuRIC, 2023b)¹⁷. However, a growing share of consumers bring their second-hand clothes to collection boxes operated frequently by NGOs and increasingly also by businesses (Persson and Hinton, 2023). Some consumers promote the reuse of clothes through peer-to-peer platforms, direct sales or rental through e-commerce platforms. Finally, some brands take clothes back for reselling or recycling.

After collection, clothes are usually sorted in the country where they were collected or elsewhere in the EU. Because of its high cost, the sorting process is done according to broad categories: wet and polluted textiles are incinerated or landfilled; high-value clothes are resold or rented within Europe; and clothes for recycling or downcycling are often exported to developing countries (see Chapter 3). This means importing countries receive large quantities of primarily low-quality clothes.

¹⁷ See also EEA, Textiles and the environment: the role of design in Europe's circular economy, 2022.



The transfer of used clothing from exporting to importing countries

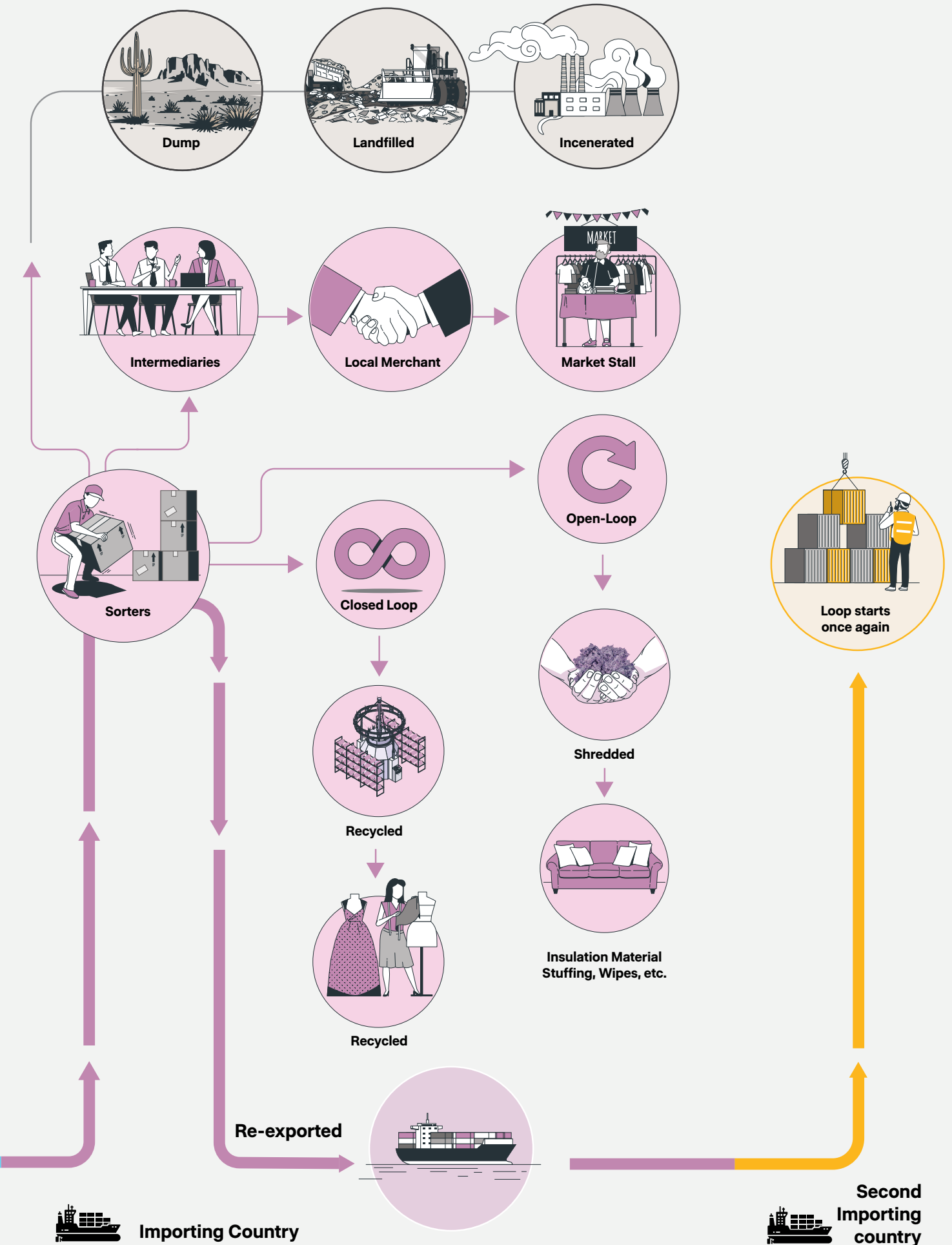


Diagram 3: The transfer of second-hand clothing from exporting to importing countries

Source: UNECE / UNECLAC analysis

Exports have risen strongly in recent years due primarily to limited sorting and recycling infrastructure

In Europe, second-hand clothing exports increased by 31% between 2020 and 2021 (OECD, 2023). In 2021, the United Kingdom and Germany were Europe's major exporters, ranking as the third and fourth largest exporters in the world respectively, just after the United States and China (OECD, 2023). Within the EU, 75% of exported volumes come from five major hubs: Belgium, Germany, Italy, the Netherlands, and Poland (EEA, 2023).

Europe's main export destinations are in Asia and Africa (EEA, 2019), while some locations act as hubs for inter-EU trade, e.g. Poland and the Netherlands (EEA, 2023). The last two decades have seen a steady increase in used clothing exports from Europe (EEA, 2023). It seems that post-consumer textile exports to Asia are mostly recycled into industrial wipes and rags. At the same time, in Africa, only a share of second-hand clothing is reused, with the remainder mostly ending up in legal or illegal landfills (EEA, 2023).

In 2019, the fourth major importer of second-hand clothing from Europe was South America, although the percentage compared to the other continents is small: approximately 2% of the global import of European second-hand clothing (EEA, 2023), with Chile being the only EU trading partner among the top 10 for second-hand clothing, as reported in Chapter 3.

Even though in Europe textiles may be donated to charities, these items often become commodities traded for profit by companies engaged in their collection, sorting, and export. Several factors determine the flows of second-hand textiles within and between countries for a market that is worth USD 36 billion according to the Fashion Revolution Transparency Index (2022). These include the design of clothes, the cost of sorting compared to the value of clothes and available technology, fees on the collection of clothes and regulations and their enforcement in destination countries. These factors are summarised in Box 4.

→| Box 4. Factors driving the export of second-hand textiles

High sorting cost: sorting is not done at a granular level because of its high cost, being a manual and labour-intensive activity. Automatic sorting machines are still being developed in pilot programs and are not yet able to process large volumes.

Low recycling capacity: the recycling capacity in Europe is far below the volume of discarded clothes, thus creating excess clothing that is exported.

Absence of design for circularity: current clothing design hinders reuse and recycling for two reasons. First, the complexity of dismantling components (e.g. buttons and zippers). Second, the growing presence of mixed-fibre clothing, which is more difficult to recycle mechanically. This leads to more clothes needing to be disposed of.

Presence of taxation and fees: many countries still levy taxes and fees on transactions in second-hand textiles, from the collection to the selling phase. This acts as a barrier for the re-sale of clothes near to where they were bought, reducing margins for the players involved and resulting in large quantities of clothes being exported or incinerated.

Lack of regulation or its enforcement in developing countries: while some countries have regulations that prohibit the discarding of waste in illegal dumps, these are often poorly enforced, due partly to complex geographies such as large and scarcely populated areas and long coastlines.

Factors across the second-hand value chain drive a wasteful approach to clothing

The main actors dealing with post-consumer textiles are collectors, sorters, and recyclers, while resellers (and renters) are also starting to play a role.

Collection rates are low

In Europe, only around a third of disposed textiles are collected (McKinsey, 2022). Usually, municipalities grant licenses for the collection of second-hand clothes to firms, charities and NGOs. Clothing and textiles are mainly collected through containers, door-to-door collection and donations, which, in turn, are brought to collection hubs. Collected textiles can be both reusable and non-reusable. Non-reusable textiles are often referred to as post-consumer textiles (PCT), which are unsuitable for the second-hand market since they are usually extensively used, poor quality, damaged or dirty (Fashion for Good, 2023).

Some brands, like The North Face and Patagonia, operate take-back schemes for used outdoor clothing and gear. Customers can return their old clothes to stores that stock these brands, where they will be recycled or reused. H&M has put a garment collecting scheme in place in several of its stores around the world. Customers can bring in any clothes, regardless of whether they were bought at H&M or not, and, after sorting, they are either recycled, re-sold, or exported. In turn, customers receive a voucher, which they can use for another purchase. However, the voucher may be considered an incentive to buy more, meaning it is always important for consumers to be aware of their needs and impacts when buying clothes.

Sorting remains largely low-tech

Most sorting in Europe is done manually and mostly by women. It is a labour-intensive and costly process. At sorting facilities, textiles are usually separated into the following macro-categories:

- Re-usable clothes, divided into sub-categories according to the destination market and resources of the sorter
- Non-reusable textiles, which are either burned in incinerators, downcycled into felt for industrial carpets, filling material, etc. or recycled
- Waste (residual waste, synthetic pillows and duvets, polluted and wet textiles), which is frequently incinerated

Clothes are also traded for sorting from Western European countries to destination hubs such as Poland, where the cost of labour is lower, before being re-exported. According to Fashion for Good (2023), Germany collected 1 million tonnes of second-hand textiles in 2022, with a recycling capacity below a quarter of that figure. The United Kingdom also has a sorting capacity of less than half what it collects according to the same report.

Manual sorting remains the first step for sorting any PCT with re-wearable content. However, manual sorting is not the optimal solution for recycling, especially for high-quality mechanical and chemical recycling, which requires the identification of specific fibre types. To feed such recycling markets, manual sorting is likely to be replaced by automated or semi-automated sorting of the non-rewearable fraction, by fibre type and colour. One example of automated sorting is Fibersort (see Box 5).

Traceability and visibility of the material composition of non-rewearable textiles are needed to guide investments into recycling facilities tailored to particular fibre compositions and large volumes of future textile waste flows (Fashion for Good, 2023, p. 17). UNECE, with its UN Centre for Trade Facilitation and Electronic Business (UN/CEFACT), has developed an information exchange standard for the traceability of textile and leather value chains from raw materials extraction and processing, through manufacturing, to clothing branding and retailing. It is further working on the development of a product circularity data project, which provides a standardised model for enabling information exchange for circular business models (reducing, reusing, recycling), including on fibre composition and on chemicals used for textile processing and finishing.

→| Box 5. Automatic sorting using the Fibersort technology

Experimentation with automatic fibre and colour detection technology is ongoing through pilots such as Fibersort, an EU Intereg-funded project led by Circle Economy and partner organisations such as Smart Fibersorting B.V., Valvan Baling Systems, Stichting Leger des Heils, ReShare, Worn Again Technologies Ltd., and Procotex Corporation S.A.

This project addresses two main challenges: 1) the environmental need to reduce the impact of virgin textile materials and 2) the development of new business models and open markets for the growing amounts of recyclable textiles in North-West Europe.

Sorting is done by combining near-infrared (NIR) and red-green-blue (RGB) camera technologies to identify different fibres such as wool, cotton, polyester, viscose, acrylic and nylon as well as single-colour items (see Diagram 4). This way textiles can be separated based on their material composition and colour. Once these textiles are sorted, the materials become reliable and consistent inputs for high-value textiles to textile recyclers (Fashion for Good, 2023, p.18).

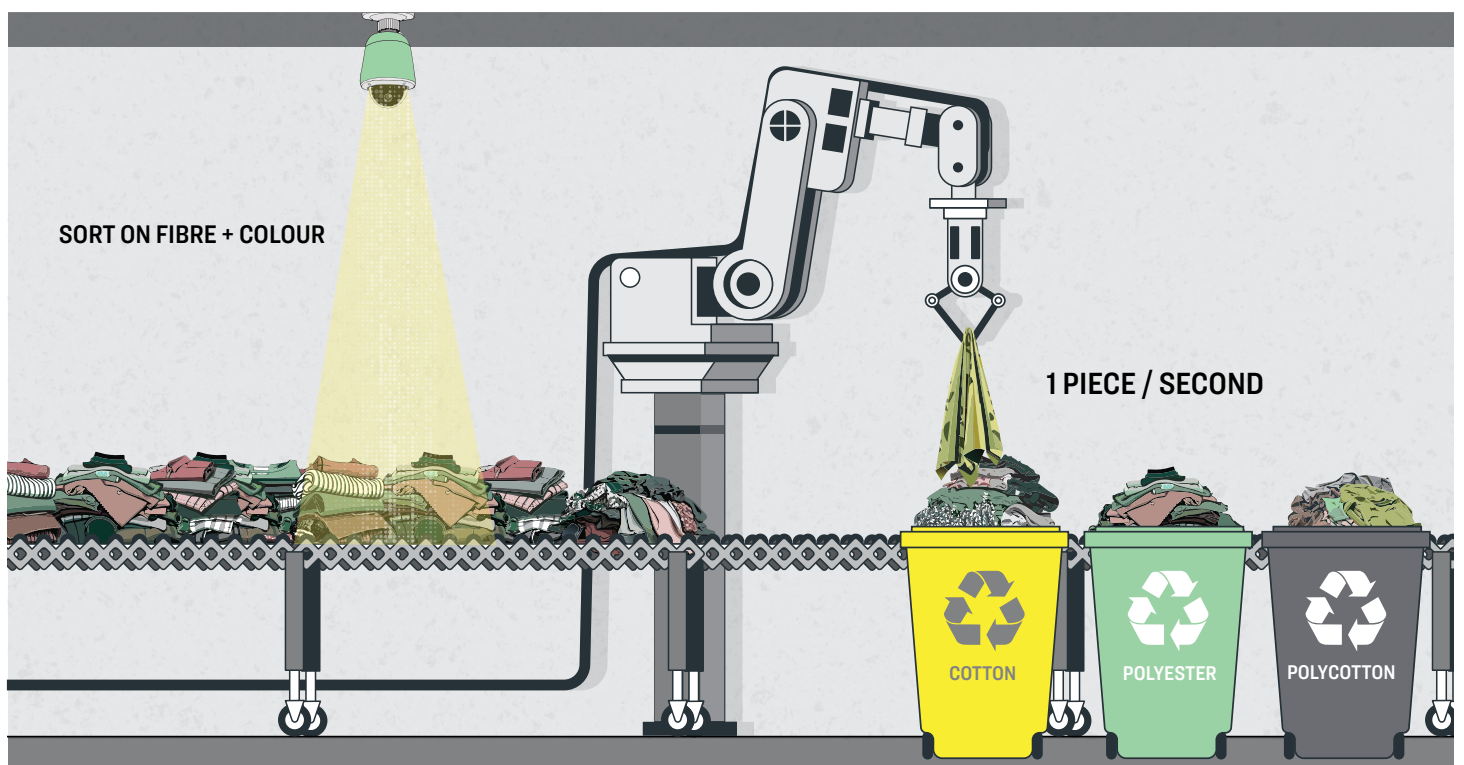


Diagram 4: Fibersort machine

Source: Authors based on information provided by Fibersort.

Recycling adds little value

In Europe, about half of collected textiles are downcycled, for example, to be used for insulation, filling or mono-use industrial wipes (Sandin and Peters, 2018). Only 1% is recycled into new clothing (EMF, 2017), while the remainder is exported to developing countries.

About 74% of low-value post-consumer textiles which are currently downcycled would be suitable for fibre-to-fibre recycling via either mechanical or chemical methods (see Box 6) to recover their material value 'by being reintroduced into the textiles value chain' (Fashion for Good, 2022, p. 9). This requires investment in sorting infrastructure to prepare the clothes for recycling. Lagging technological progress for sorting and separating blended fibres, along with high sorting costs, explains the low recycling rates and high export volumes to developing countries (Sandin and Peters, 2018). Textiles are not yet designed with recyclability in mind. Furthermore, there is little dialogue between sorters and recyclers, although the Fashion for Good (2022) study aims to fill this gap.

Finally, there is a lack of recycling capacity in Europe and elsewhere, though pilot projects are making progress. Examples include Circular and Sustainable Textiles and Clothing (CISUTAC), funded by EU Horizon 2020 to develop sorting capacity (digital repair and dismantling) and infrastructure at large scale, and EURATEX's ReHub project, a business-driven initiative to build up textile recycling capacity in Europe.

→| Box 6. Recycling methods

Mechanical recycling: Mechanical textile recycling means shredding and tearing materials into fibres. Currently this is the predominant method of textile recycling at the industrial level (Reike, 2023, personal communication, March 17th) and the most scalable in the short term, since it is a well-established technology. Mechanical recycling works well for fibre-to-fibre recycling of natural fibres (e.g. wool and cotton) and can be carried out even if there are small amounts of blended fibres. Based on the Fibersort pilot, around 21% of non-rewearable post-consumer textile is suitable for mechanical recycling. One of the downsides of mechanical recycling is that in the process of shredding, the fibre is often shortened, which results in downcycling or in the need to blend the recycled fibre with virgin materials to create a fibre suitable for apparel applications.

Chemical recycling: Chemical recycling is still very energy-intensive and costly, though if done at scale and lower cost it could cover more than half cotton and wool-rich clothes (Van Duijn, 2023, personal communication, March 17th). It usually involves an initial mechanical process of shredding and a subsequent chemical process adapted to the materials. Chemical recycling is also the process used to convert cellulose-based textile-waste textiles into new viscose-like fibre through initiatives such as Renewcell. Chemical recycling is still in its infancy, and only a few pilots have been carried out, such as the RESINTEX (an EU Horizon project), which addresses the chemical recycling of different types of textile fibres, and Worn Again, which addresses chemical separation and recycling of blends of cotton and polyester. Chemical recycling has the potential to return fibres to their original quality, yet the technology is not yet mature nor economically viable (Ellen McArthur Foundation, 2017).

Bio-based processes for recycling: Bio-based processes for recycling textiles use enzymes, which digest material into building blocks that can be reassembled into regenerated material. The only example of such an application currently available is a fibre-to-fibre pilot led by Carbios in partnership with Patagonia, Puma and others, focused on PET fibres, with research ongoing.

Resale still accounts for only a small proportion of second-hand clothing flows

The market of second-hand clothes in Europe represents only a small percentage of post-consumer textile flows. However, a rising trend is the sale or rent of quality second-hand clothes through shops and e-commerce platforms (see Box 7).

→| Box 7. European Peer-to-Peer second-hand clothing e-commerce platforms

The trade of good quality second-hand clothes grows rapidly in Europe through online marketplaces. Consumers post pieces which they no longer need or wear for a recommended price and find interested buyers. This trend is especially relevant for younger generations, who wear clothes for shorter times. Such platforms include:

- **Depop** is a platform specifically designed for selling vintage and second-hand clothing. It is popular among young people and is known for its vibrant community.
- **Drexcodes** provides a rental and sale service for high-end clothes, which are typically worn only a few times in their owners' lifetimes. Customers can request a dress be shipped to their home and try it on for free before deciding whether to buy or rent it.
- **Poshmark** enables users to buy and sell clothing, shoes, and accessories. It charges a commission on each sale but also offers several features that help sales, such as the ability to share listings on social media.
- **Vinted** is another popular option for selling second-hand clothing. It does not charge commission on sales but does charge a fee to list items and takes a cut of the shipping fees.

Source: Authors based on publicly available information from the platforms.

European initiatives to increase textile circularity are in their infancy

The European Union – in particular through the European Green Deal – plays a vital role in setting the legislative direction towards enabling circularity in its Member States.

One of the main building blocks of the European Green Deal is the updated Circular Economy Action Plan (CEAP), adopted in March 2020 by the European Commission. It aims to help achieve climate neutrality and halt biodiversity loss by 2050 by making sustainable products the norm in the EU, reducing waste, and enabling circularity for citizens, regions, and cities.

From a global lifecycle perspective, textiles is the fourth most intensive sector for using primary raw materials, water and land, and emitting GHGs in Europe (EEA, 2022). The new CEAP sets out measures that: provide guidance on separate collection for textiles (to be implemented by Member states by 2025); improve the business and regulatory environment for sustainable

and circular textiles in the EU; boost sorting, reusing and recycling of textiles; and encourage measures such as Extended Producer Responsibility (EPR) schemes (see Box 8). Incineration and landfilling will be reduced to a minimum, and the textile sector will be supported by innovation in fibre-to-fibre recycling.

The new CEAP also led to the development of the EU Strategy for Textiles, based on input from the industry and stakeholders. Achieving the Strategy's 2030 vision entails a set of actions, including: the introduction of a DPP; a set of ecodesign requirements to increase reparability and recyclability; addressing the unintentional release of microplastics; and incentivising the use of innovative business models. The implementation of this vision will be through a series of legislative initiatives, including:

- Ecodesign for Sustainable Products Regulation proposal
- Empowering Consumers in the Green Transition Directive proposal
- Green Claims Directive proposal
- Reset Trend, the Waste Shipment Regulation, the Transition Pathway for the textile Ecosystem
- European Circular Economy Stakeholder Platform
- Ongoing revision of the Waste Framework Directive (WFD) to introduce mandatory and harmonized EPR schemes in all member states.

With regards to textile waste, the main objectives of the Strategy are to reduce waste generation and increase reuse and recycling through the adoption of three policy options:

- Supporting EU Member States in implementing current provisions and improving current stakeholders' guidance and exchange of best practices and exercising existing Commission mandates for secondary legislation
- Clarifying definitions, reporting obligations and minimum requirements and targets for the collection and treatment of second-hand textiles in line with the WFD
- Establishing EPR schemes to secure funding for reuse and recycling systems and R&D to maximise circularity

The Strategy also addresses the challenges related to the export of textiles. Due to the steady increase in textile waste exports to non-EU countries, the export of textiles to such countries will be only allowed if non-EU countries notify their willingness to receive textiles and have the necessary waste management capacity. Moreover, to avoid false labelling of textile waste as second-hand clothing, the Commission is also committed to developing specific criteria to distinguish the two.

In this connection, an essential regulatory act is the Ecodesign for Sustainable Products Regulation (ESPR), under which textiles is a product category that must be prioritised between 2024 and 2027. It stipulates that the destruction of unsold textiles be banned - although this last point will not apply to SMEs. According to the ESPR, sustainable products must be characterised by longevity, reparability, recyclability and upgradability. The regulation also introduces the requirement for a DPP to make available information to actors throughout the value chain to enhance the end-to-end traceability of products (Recital 26). However, this should not be considered a replacement for physical labels, which need to state essential information relating to the health, safety and rights of end-users. The DPP will help consumers make informed choices and give repairers, refurbishers, and upcyclers access to relevant information. The regulation also enforces setting up an online platform that stakeholders could use to compare information included in DPPs (Art. 16).

→| **Box 8. EPR for textiles and footwear: the case of France**

France's Extended Producer Responsibility (EPR) Law came into force in 2007. It aimed at achieving a collection rate of 50% of annual clothing, home textiles and footwear sales, equivalent to 300,000 tonnes per year or 4.6 kg per person per year. Additionally, a target of recovering 95% of all textiles collected was established.

The regulation's implementation requires two compliance mechanisms: the financial contribution to an accredited Producer Responsibility Organisation (PRO) and the individual refund.

The PRO has two functions. The first is to generate the necessary incentives for producers to use recycled fibres as replacements for or additions to virgin raw materials. The second is to supervise the sorting and recycling channels that participate in the production process. These functions are supported by a network of clothing collection points for consumers, ranging from containers on the street to charities and collection shops, and increasing their visibility through public information campaigns and tools such as interactive online maps.

Surplus textiles and footwear products that are collected but not sold are distributed to people in need or exported to countries with textile-sorting and recycling facilities.

Results of the experience

This regulation contributed to tripling the collection and recycling rates of post-consumer textiles in France between 2016 and 2018. Since its implementation, the collection of textiles has increased by 13% per year, and the recovery rate of materials is estimated at 90%, of which 50% can be reused in some way.

EPR schemes encourage collaboration between players and support research and development related to issues fashion producers and recyclers face. In 2016, the PRO collected EUR 17.2 million in fees from fashion retailers, revenue used to support recycling organisations, fund research and development projects to identify solutions for textile producers and recyclers and support the socially excluded workers. In 2017, the textile-sorting task alone provided 1,400 full-time jobs, 49% of which were reserved for workers with difficulties.

However, obstacles related to the flow of garments for reuse persist because their primary market is Africa, where several countries are saturated with imported second-hand clothes that end up being discarded with significant environmental impacts. In addition, sorting processes are costly and labour-intensive, while most garments on the market are made of difficult-to-recycle blended fibres.

In November 2022, the French government updated the EPR policy for the apparel and footwear sector to require producers, distributors, and importers to manage the end-of-life of their products by creating approved recycling programmes or contributing financially to an accredited EPR organisation. A scheme was recently introduced to support textiles and apparel repair services by issuing consumer discount vouchers (BBC, 2023).

Lastly, as part of the French plan to transition to a more sustainable textile industry, new guidelines for clothing labels require manufacturers to disclose the amount of water used to produce their products, list the chemicals involved, assess the risk of creating microplastic pollution, and provide details of any recycled materials used.

Conclusion

The increasing quantities of waste textiles being exported from the EU to developing countries reflects the difficult economics of dealing with discarded clothes that are not designed for reuse or recycling. The low value of many of these items means there are substantial cost pressures in processing them, making it unsurprising that there is too little sorting and recycling capacity in the bloc to deal with them since the business case is frequently not viable. The EU Strategy for Textiles, as part of the Circular Economy Action Plan, alongside other policy efforts at EU and Member State level, have the potential to improve the situation by putting more responsibility on producers for what happens to their products after use. Promoting design for circularity and loops of resale and reuse, supporting advances in recycling technology, and increasing the traceability of clothes and the materials from which they are made will all be crucial to stemming the flow of waste textiles from developed to developing countries.

Note: This study did not examine the landscape of parties in Europe that profit from the collection, sorting, and, export of second-hand clothing to developing countries. Further research on this topic would provide a more detailed picture of the market and its economic drivers which would be valuable in forming recommendations on making its material flows more circular.

Chapter 3.

The Global Perspective

Introduction

The textile industry has evolved from a production model based on natural fibres and protectionist policies for local industry to a model where synthetic fibres have become pervasive, production has been offshored, and the speed of manufacture and distribution of products has increased rapidly. Most of the fashion industry operates under the fast-fashion model, which involves more collections per year, generally at low prices, used for less and less time. This has led to a growing rate of overproduction and overconsumption of clothes.

These excesses have boosted the development of an important market for second-hand clothes, with international trade worth USD 9.3 billion in 2021. These garments largely flow from higher- to lower-income countries. The main exporters (by value) are the EU, China, the United States, and the United Kingdom, and the principal importers are Pakistan, Ukraine, Kenya, and Chile.

The globalised fast fashion industry has driven an environmental crisis

Trade liberalisation, textile offshoring, the use of synthetic fibres, and the emergence of fast fashion have had lasting effects on global trade, employment, and the environment.

The end of the Multifiber Agreement (MFA) enabled the globalisation of the fashion industry

The MFA regulated trade in textiles and clothing from 1975 to 1994. The agreement protected the domestic and less competitive textile industries of developed countries. It imposed volume restrictions or tariffs on products from developing countries with more competitive textile industries, abundant natural raw materials, and lower local production costs. Under the MFA, countries such as the USA, Canada and Japan were able to protect and enhance their textile industries. In contrast, countries such as China, India, Bangladesh, Vietnam, Thailand, Brazil and Mexico were affected by restrictions and limitations on exporting textiles and clothing to large markets with greater purchasing power.

With the elimination of the MFA in 1994, there was significant trade liberalisation in the textile and clothing sector, allowing for an increase in the volume of international transactions. As a result of the Doha Round of trade negotiations, the Agreement on Textiles and Clothing (ATPV) was introduced in 1995, a transitional instrument aimed at phasing out the quota system. Between 1995 and 2005 quotas and tariffs were reduced and finally eliminated in four steps (Kuwayama & Cordero, 2005).

In 2001, China became a member of the WTO. Before its accession, China was already the largest producer of textiles and clothing globally, with about 22 billion square meters of production in 1998 (Jacobs, 2001). China's opening to the global market has transformed the textile and apparel industry. Due to abundant, low-cost labour and the necessary technology and infrastructure availability, China became a pole of attraction for investments by companies looking to expand their textile production. This increased the country's exports of low-cost apparel to the global market.

A central plank of globalisation was the offshoring of clothing production

Multi-country operations allow companies to make decisions to optimise their comparative advantages and geographical locations. Thus, offshoring has emerged as a strategy to compete in national and international markets. In the textile and clothing industry, companies move their production to countries with lower labour costs or conditions favourable for the expansion of their production; textile offshoring can be developed in one or more countries and aims to reduce production costs and dependence on a single market (ILO, 2022).

Textile offshoring strategies may include:

a) Geographical offshoring: moving production to countries or regions where costs (labour, operational, infrastructure, taxes, etc.) are significantly lower by installing factories in the destination country. This strategy has been implemented in many countries such as China, India, Bangladesh and Vietnam.

b) Subcontracting or outsourcing: subcontracting some or all of a company's production to third parties located in countries with lower production or labour costs allows the company to reduce its operating costs and focus on design, marketing, and distribution. A variant is formalising the outsourcing of production through long-term contracts with local companies.

c) Creation of alliances or joint ventures: establishing strategic alliances or partnerships with local companies in destination countries enables companies to benefit from local market knowledge, experience, and access to local resources.

d) Supply chain relocation: moving stages of the supply chain in addition to production, such as sourcing raw materials or logistics, to lower-cost countries to increase efficiency and reduce costs.

Textile offshoring has negative impacts in the countries of origin due to reductions in investment, incomes, and skilled jobs, and the loss of knowledge of how to produce textiles and clothing. For the recipient countries, on the other hand, direct benefits include the creation of employment (though often of women paid low wages and provided with limited social protection) and attraction of investment, in addition to the development of value chains linked to textile production.

The 1980s marked the beginning of today's globalised textile supply chains. Gradually, textile production has been outsourced to developing countries. Garment cutting, assembly, and sewing is a light industry with low capital investment and is labour-intensive, which allows it to move easily from one territory to another. The fashion industry now has the most extensive international supply chain (Radner, 2016).

The expanded use of low-cost synthetic fibres has supported the emergence of fast fashion

The development of synthetic fibres has played a fundamental role in the economic history of the textile sector and its link with the phenomenon of fast fashion. Over time, introducing these fibres has revolutionised the fashion industry, allowing for faster, lower cost, and more diverse production of garments. Several studies account for this step, beginning with the commercial development of rayon and regenerated cellulose, which emerged in the early twentieth century to provide an alternative to natural materials such as cotton and silk. Nylon and polyester were introduced in the 1930s, saw important development during the Second World War as war gear, and became widely used in the textile industry. Over the following decades, significant advances were made in research and development around synthetic fibres, with acrylic, spandex and polypropylene, among others, expanding the options available to designers and manufacturers.

The production of synthetic textiles for the fashion industry has shown strong growth: between 1992 and 2010, it increased from 16 to 42 million tonnes per year. The year 2000 marked a new beginning in the composition of the textile market with polyester surpassing cotton in market share (36% compared to 33%). Synthetic fibres represent 64% of total fibre production, of which 54% is polyester. It is projected that, by 2030, synthetic fibres will represent 73% of global textile production, of which 85% will be polyester (Textile Exchange, 2022).

The industry has efficient production processes and low-cost labour in developing countries, low-cost raw materials (synthetic fibres) and the possibility of manufacturing garments at affordable prices for consumers. This has facilitated the emergence of fast fashion. This business model seeks to make sales independent of the season by developing new clothing inventories at greater speed, which keeps prices affordable. However, the enforcement of low costs, especially at the earlier stages of the value chain, often results in social issues for the workers involved.

The production process of this business model is based on working with more suppliers and lower volume orders, allowing a greater variety of styles and garments and shortening the lead time from the design of a garment to its sale by six weeks (Cline, 2012). The design of fast fashion brands does not have a unique or distinctive style. It can swing between different trends in a single season, moving from the era of trends to the era of micro trends (Radner, 2016).

Low-priced clothing and quick turnover of styles or micro trends generate an underutilisation of clothing. The average number of times an item is worn is seven or eight, after which it is discarded, a usage rate that has shown a 36% reduction over the past 15 years. Moreover, the durability of the garments made by fast fashion companies is low: half are discarded within a year.

It is important however to note that fast fashion, which is often affordable, is not the only source of textile waste: luxury brands also push new collections into the market throughout the year, setting new trends (which 'fast fashion' companies then copy), and their products may also end up being discarded.

The environmental impacts of the fashion industry are substantial and wide-ranging

Higher production levels and reduced clothing durability and use rates have increased textile waste. Furthermore, the lack of common strategies for dealing with garments after use leads to their disposal or export to developing countries, generating significant environmental impacts.

In 2018, the fashion industry emitted around 2.1 billion tonnes of greenhouse gases (GHG), equivalent to 4% of the global total. About 70% of the fashion industry's emissions come from upstream activities such as textile production, preparation and processing. The remaining 30% is associated with retail, the use phase, and the end of life of the garments (McKinsey & GFA, 2020). Currently, most textiles contain synthetic fibres that take centuries to decompose in the environment. Only 25% of clothing consumers discard is reused or resold (Changing Markets Foundation, 2023).

When textile waste is incinerated, a common practice globally, emissions include heavy metals, acid gases, particulate matter, and dioxins. These are extremely harmful to the environment and to human health as they contribute to various types of cancers, birth defects, lung and respiratory diseases, strokes, and cardiovascular diseases, among others.

The fashion industry must move from its current linear approach (take-make-waste) to a circular economy. Such a model would decouple value creation from the extraction of natural resources by designing clothes to be reused and recycled, thereby substantially reducing waste and pollution. At present, less than 1% of clothing is recycled into new textiles of equal or greater value than the original; most recycling transforms fabrics into products of lower value, such as insulating panels for construction, cleaning cloths or mattresses (downcycling).

The global trade in second-hand clothing has increased hugely in the last 30 years

Global trade in second-hand clothing equalled USD 9.3 billion in 2021 (see Figure 1). The volume of this trade grew almost sevenfold over the past three decades, from 541,000 tonnes in 1992 to nearly 3.6 million tonnes in 2021.

In 2021, the leading exporters of second-hand clothing were the European Union (30% of the value of global exports), China (15.6%) and the United States (15.2%). Until that year, the United States was the largest single-country exporter of second-hand clothing since at least 1992 (WITS, 1992-2021).

Exports of second-hand clothing from the EU to more than 100 countries – mainly in Asia and Africa (EEA, 2019) – in 2021 exceeded 1.8 million tonnes with a value of USD 1.66 billion. In the last decade, the United States has exported second-hand clothing predominantly to Africa and Latin America but also to high-income and upper-middle-income countries (Lee, Zhang, and Karpova, 2016). China has become a significant exporter of second-hand clothing over the last five years, becoming the world's second-largest exporter by value in 2020. In 2021, Africa was China's primary destination for second-hand clothing, particularly Kenya, Angola and Ghana, with the former alone importing 20% of China's second-hand clothing exports, its imports growing from USD 53 million in 2020 to USD 140 million in 2021.

Pakistan, the United Arab Emirates, Guatemala, Kenya, and Chile all saw strong increases in their volumes of imported second-hand clothing in recent years. Meanwhile, the United States, Canada and Japan maintained largely consistent export volumes without significant changes (see Figures 2 and 3).

The nominal average price of second-hand clothing fluctuated between USD 0.76 per kg in 2001 and USD 0.99 per kg in 2021 and reached a peak of USD 1.07 in 2013. If the unit price were adjusted for inflation it would have reduced in real terms over the last ten years.

From 2017 to 2021, second-hand clothing exports were more concentrated than imports. Tables 4 and 5 show that the top three exporting countries account for >60% of total exports, while the top three importing countries account for just under 20% of total imports. UN COMTRADE data also shows that Germany, the Netherlands, and Poland are significant exporters and importers, suggesting they function as hubs for intra-EU second-hand clothing trade (European Environmental Agency, 2023).

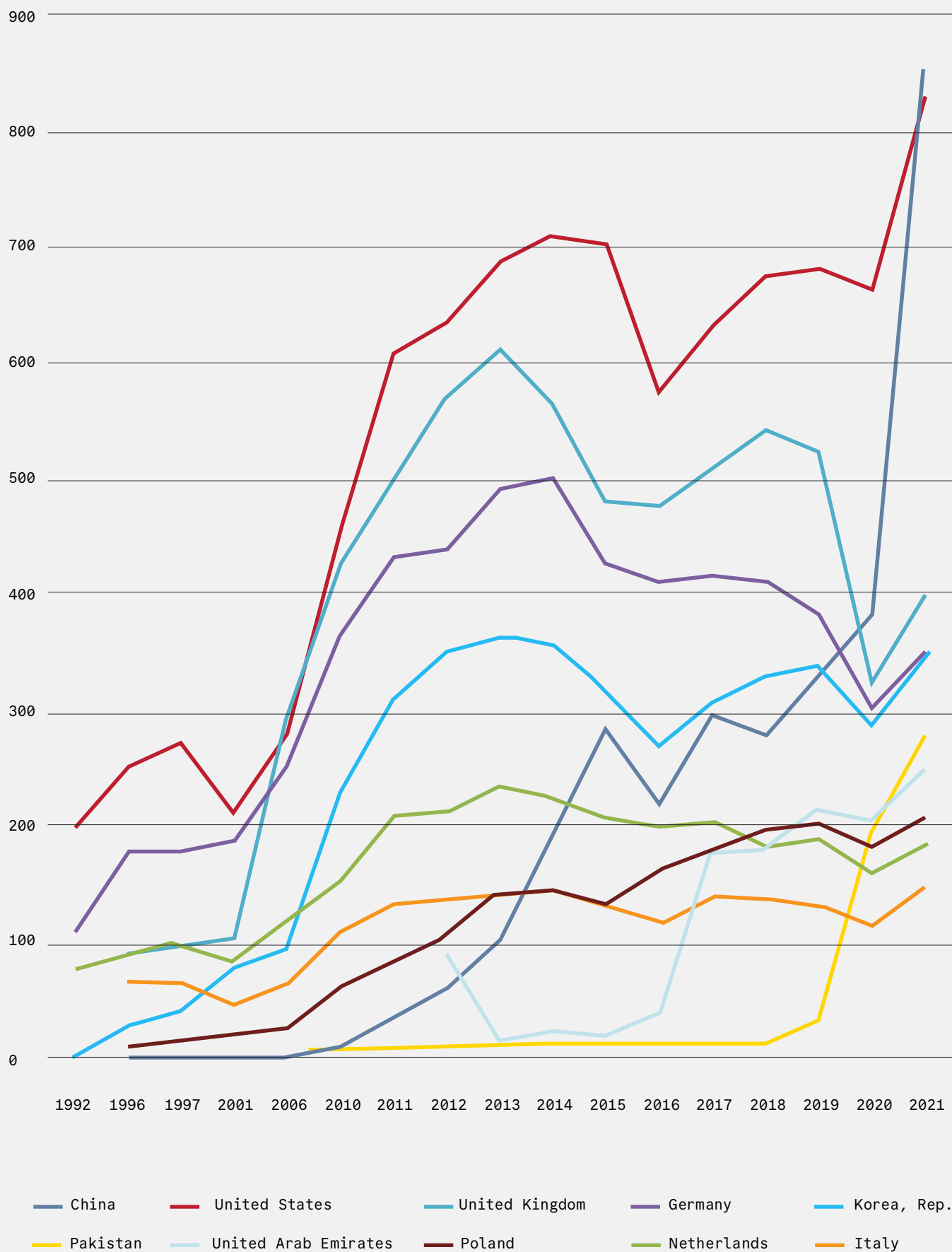


Figure 1. Global exports of second-hand clothing (USD million) 1992-2021*
Source: UN COMTRADE

* The figures and tables in this report use the nomenclature HS 1988/92 (H0), HS Code 6309: Worn Clothing And Other Worn Textile Articles.

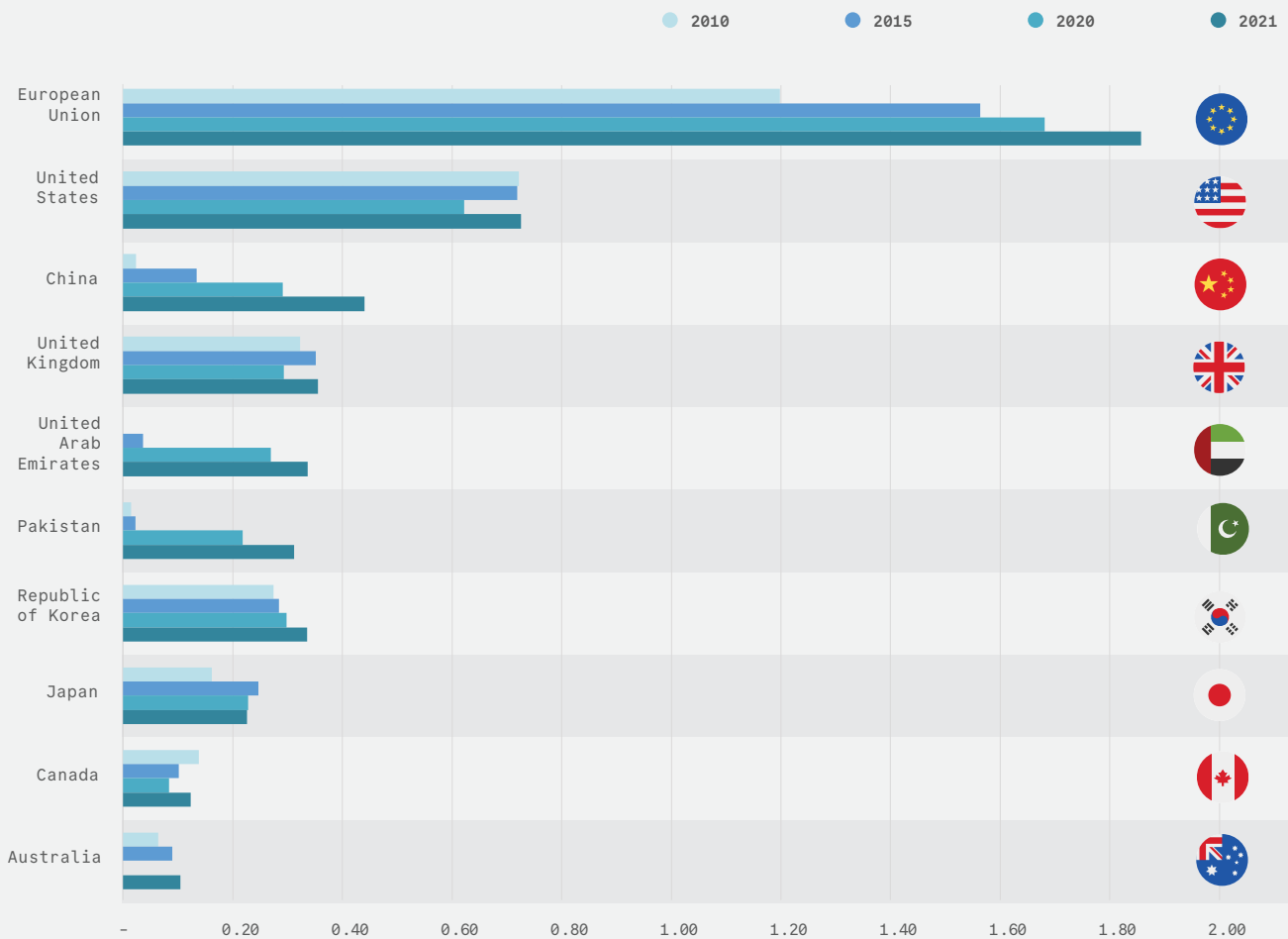


Figure 2. Top ten exporting countries of second-hand clothing by volume (million tonnes) 2010-2021

Source: UN Comtrade

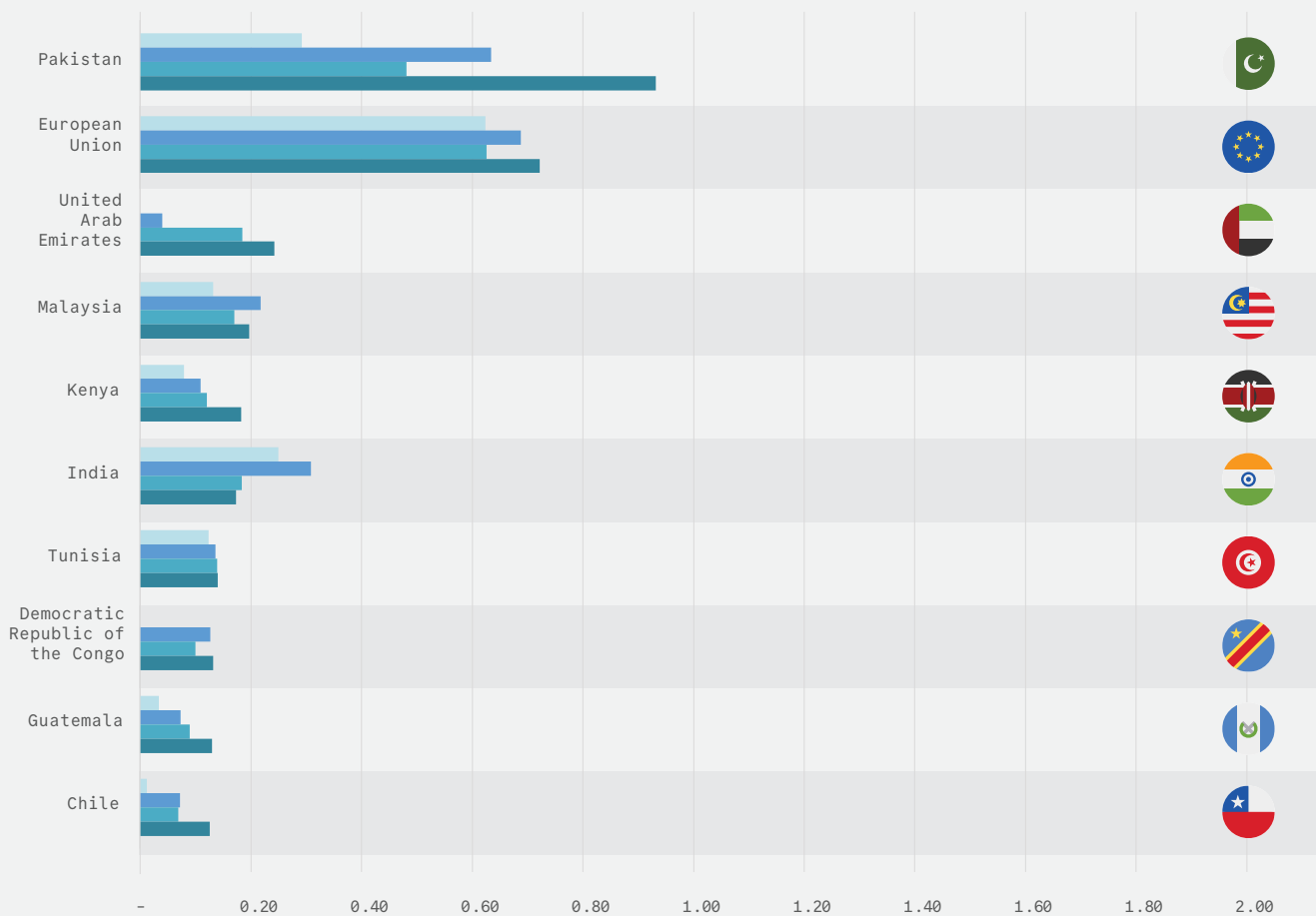


Figure 3. Top ten importing countries of second-hand clothing by volume (million tonnes) 2010-2021

Source: UN Comtrade

Table 4. Top 10 exporters of second-hand clothing by value (USD million) FOB¹⁸ 2017-2021

Exporters	2017	2018	2019	2020	2021	2021 share of global total	Compound Annual Growth Rate (in %) (2017-2021)
European Union	1,521.2	1,582.8	1,523.8	1,311.3	1,659.7	30.4%	2.2
China	298.1	279.4	334.1	382.1	852.6	15.6%	30.0
United States	632.0	674.9	681.5	663.3	830.9	15.2%	7.1
United Kingdom	507.3	543.0	522.6	320.4	397.9	7.3%	-5.9
South Korea, Rep.	307.0	328.8	337.0	288.9	347.0	6.3%	3.1
Pakistan	10.6	13.4	33.1	198.4	276.6	5.1%	125.8
United Arab Emirates	179.5	184.0	216.6	204.6	249.4	4.6%	8.6
Canada	133.2	137.4	130.6	89.0	142.1	2.6%	1.6
India	72.5	79.3	82.3	80.1	85.1	1.6%	4.1
Japan	85.3	86.5	94.9	66.1	84.1	1.5%	-0.3
Total TOP 10	3,265.6	3,408.9	3,399.1	2,966.1	4,088.2	74.9%	5.8
Total world	4,344.5	4,460.3	4,510.3	4,069.2	5,465.7	100.0%	5.9

Source: UN Comtrade

Table 5. Top 10 importers of second-hand clothing by value (USD million) CIF¹⁹ 2017-2021

Importers	2017	2018	2019	2020	2021	2021 share of global total	Compound Annual Growth Rate (in %) (2017-2021)
Pakistan	240.2	283.3	230.5	204.3	401.5	10.4%	13.7
Ukraine	154.4	154.9	183.9	154.5	174.2	4.5%	3.1
Kenya	126.3	167.2	173.9	114.7	172.6	4.5%	8.1
Chile	97.4	115.4	113.1	75.6	166.4	4.3%	14.3
Netherlands	100.7	134.4	130.3	133.4	162.3	4.2%	12.7
Guatemala	107.3	107.5	121.2	98.2	157.2	4.1%	10.0
Russian Federation	149.4	142.0	129.5	120.6	140.8	3.7%	-1.5
Honduras	87.1	90.6	90.2	76.2	123.9	3.2%	9.2
Poland	64.3	132.7	119.3	105.2	121.3	3.1%	17.2
United Arab Emirates	58.0	82.0	100.5	81.5	110.7	2.9%	17.5
Total TOP 10	1,184.9	1,404.6	1,392.5	1,164.3	1,730.9	44.9%	9.9
Total world	3,659.6	4,033.5	3,818.9	3,126.6	3,851.7	100%	1.3

Source: UN Comtrade

18 Free on board. For more information see <https://comtrade.un.org/data/MethodologyGuideforComtradePlus.pdf>19 Cost, insurance, and freight. For more information see <https://comtrade.un.org/data/MethodologyGuideforComtradePlus.pdf>

In 2021, Asia was the largest importer of second-hand clothing (28%), followed by the EU (24%) and Africa (19%). Latin America and the Caribbean accounted for 16% of global imports, and Europe (non EU) accounted for 11%. Only North American countries are net exporters (see Figure 4).

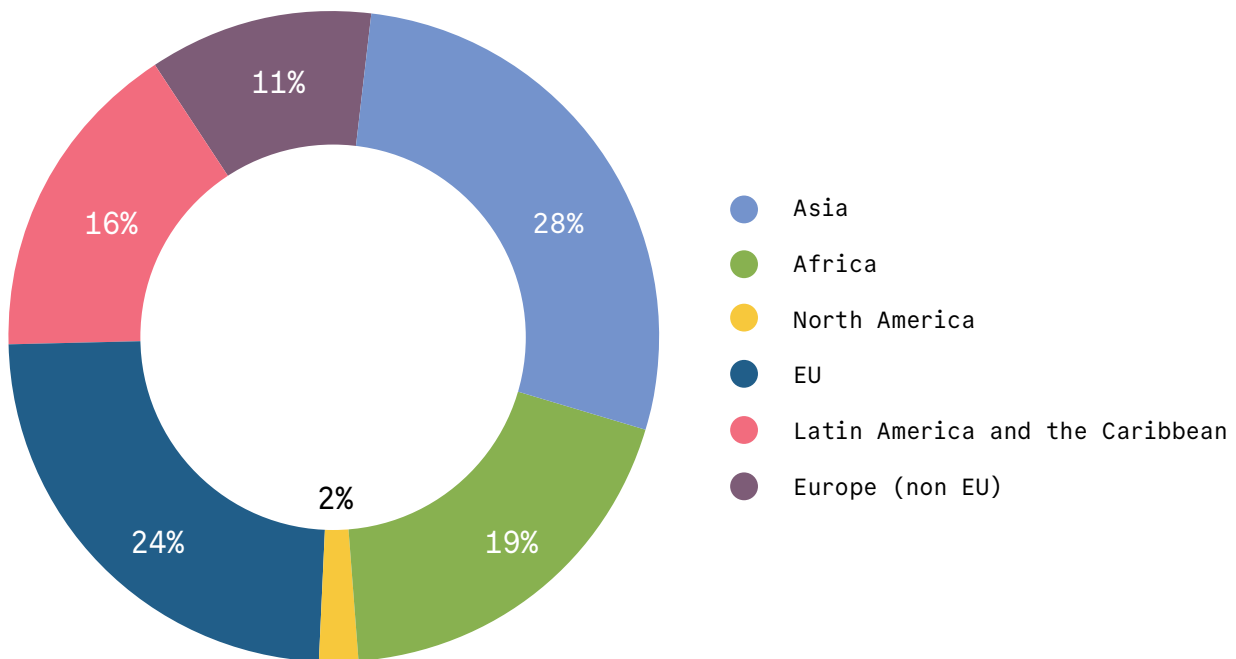


Figure 4. Regional share of total imports of second-hand clothing by value, 2021

Source: WITS data based on UN Comtrade

Conclusion

The globalisation of the fashion industry, facilitated by the end of the Multifiber Agreement and characterised by the offshoring of clothing production to developing countries, has been supercharged by the continuous expansion and use of low-cost synthetic fibres, mainly polyester, and the emergence of a fast-fashion culture in consuming markets. These developments have caused the trade in second-hand clothes – alongside those in new clothes, but with a time lag – to expand quickly. The industry suffers from an environmental crisis of GHG emissions, air and water pollution, and waste, the ill effects of which are felt where the textiles are produced, worn and disposed of, and increasingly where they are exported to when they cannot be dealt with.

Recommendations

Chile recognises that addressing the harmful effects of second-hand clothing imports, particularly in the Atacama Desert, requires action at home and abroad. Strategies must adequately consider both the central role of the nations involved and the local reality of the most affected populations. It should also be acknowledged that a multi-level approach is more appropriate where multiple national and sub-national authorities play a decisive role.

The policy recommendations of this study are therefore presented according to their geographical scope and grouped as follows:

- ✘ Trade agreements between exporters and importers of second-hand clothing
- ✘ Domestic policies in countries that export second-hand clothing (with a focus on the EU)
- ✘ Domestic policies in countries that import second-hand clothing (with a focus on Chile)

Make changes to international trade agreements : EU-Chile example

1. **As part of the 2023 Interim Trade Agreement between the EU and Chile**, which includes a chapter on Trade and Sustainable Development, step up bilateral cooperation on initiatives covering sustainable consumption and production, circular economy, green growth, and pollution reduction. These efforts would be facilitated by making changes to the trade policies of both parties:
 - a. **Develop minimum international criteria for second-hand clothing exports** to ensure that Chile and other importing countries only receive garments that have a market value, or that can be recycled. Such criteria would incentivise the automatic classification of second-hand textiles and the development of more effective sorting operations.
 - b. **Agree between both parties on legal definitions of ‘textile waste’ and ‘second-hand clothing’** and establish quality restrictions on their import from the EU and other exporting countries. Clear definitions of textile waste and the point at which second-hand clothing is deemed a secondary material will help reduce ambiguity and give importers more certainty about avoiding waste in their used clothing imports.
2. **Use this agreement as a template for other bilateral trade agreements** between the EU and other countries to which it exports textiles and between Chile and other countries from which it imports textiles to help reduce the global trade in textile waste.

3. **Set internationally agreed standards to clearly distinguish between second-hand clothing and textile waste and establish mechanisms to track their trade flows** by building on existing UN work in partnership with international and regional players, including the EU.

Policymakers could evaluate the possibility of classifying imported second-hand clothing at source, applying detailed criteria to distinguish it from waste, and improving the traceability of its trade in line with international standards (e.g., UNECE-UN/CEFACT information exchange standards). Restrictions could be placed, for example, on dirty, worn, and torn clothing. As the OECD, UNECE, and WTO have recommended, such standards should be non-discriminatory and should not create unnecessary obstacles to trade.

The experience of the East African Community in developing the *Draft East African Standard for Textiles - Requirements for Inspection and Acceptance of Used Textiles Products* could be instructive when setting such standards (see Appendix 5). The work of the World Customs Organization is also relevant when developing clear definitions that facilitate the detection of illegal cross-border movements of goods.

Pursue domestic policy action in importing countries: **Chile example**

a. *Minimise future imports of waste textiles*

1. **Step-up customs controls:**
 - a. **Adopt administrative measures at the port of Iquique** to ensure digital traceability of flows of second-hand clothing and textile waste from there to ZOFRI and to other parts of Chile, based on international standards (i.e. the UNECE-UN/CEFACT traceability standard)
 - i. **Digitise all shipment, transport, and control procedures** to help avoid smuggling and transporting waste to illegal dumps in the Atacama Desert or elsewhere.
 - ii. **Introduce automated customs declarations, electronic cargo tracking, risk-based inspections, and digital inventory controls** to improve traceability. In addition, provisions for infrastructure improvements should be in place to ensure that goods destined for bonded warehouses can be transported from the port of entry safely and efficiently.

- c. **Improve customs procedures at ZOFRI** and mandate their integration into the Foreign Trade Single Window (SICEX).
 - d. **Use customs cooperation** and mutual support agreements with Chile's main trading partners to increase information exchange. These agreements can serve as effective mechanisms for customs officials to track exports before they are shipped to Chile or when they are sent to a third country and then re-exported to Chile.
2. **Establish a Circular Economy Strategy for Textiles** covering the entire process from import, through incorporation into new production processes, to delivery of recycled products and repair services. Textile waste, whether it comes from second-hand clothing entering the country or from new clothing purchased by nationals, requires a strategy to prevent it from becoming waste and to keep it as a productive factor in the economy.
 3. **Set up public-private alliances to undertake recycling projects and other circular economy activities** through tax-extension schemes and funds to support entrepreneurship, innovation, and job creation for vulnerable groups, particularly in the Tarapacá region.

Textile recycling is imperative in the Tarapacá region due to the large number of garments that enter its territory annually. However, the opportunity for closed loop or fibre-to-fibre recycling to make new garments is limited due to the technical difficulty of separating blended fibres, meaning most current potential is in down-cycling (recycling a higher-value product into a lower-value product). There are, however, circular economy textile enterprises in the area engaged in upcycling projects that would benefit from public-private alliances that facilitate the development of their work through tax-extension schemes, free traffic of goods outside the tax-extension zone, and financing funds for entrepreneurship and innovation.

Support for circular economy enterprises in the area would help generate jobs and position the Tarapacá region as a centre of textile innovation. This promotion of the circular economy of textiles should include the expansion of textile repair and reuse services in the region, understanding these practices as elemental when it comes to extending the life of garments and offering quality jobs to women in situations of economic vulnerability and to populations, such as the region's large migrant population, that have limited employment opportunities in other sectors. It would build upon the context of vibrant cross border trade in the Andean region, especially with Bolivia (P.S. of) and Peru, which is vital to build economic hubs and offer development and employment for the region and its inhabitants.

(b) Address the negative effects of previous – and any future – imports of waste textiles

1. **Improve the legal framework for waste management**, including textile recycling, by speeding up the preparation, approval, and enforcement of laws on Extended Producer Responsibility and recycling (Law 20.920).
2. **Implement a regional solid waste control plan** involving inspections of sanitary landfills, clean points, and dumps to increase the enforcement capacity of regional health authorities. Enhancing the control capacity of the regional health authority concerning

illegal textile dumping by implementing a Prioritized Regional Plan for solid waste control into annual territorial planning would involve conducting inspections of sanitary landfills, clean points and landfills to ensure compliance with regulations. Additionally, the regional health authority should keep the registry of illegal dumps in the Alto Hospicio commune up to date to identify potential sources of risk to public health and the environment. Public resources should be increased to support this effort, and better coordination and information sharing should be established with other public services, such as the Ministry of National Assets (since some textile micro-dumps are located on public land).

3. **Accelerate the adoption of the Chilean draft law on the environmental quality of soils** to provide the mechanisms and resources necessary to restore soil in the Atacama Desert contaminated by textile waste. To ensure the population's well-being and biodiversity, the government must provide the resources to assess the impact on the soil of illegal textile dumping. The proposed bill is expected to provide the mechanisms and resources for soil remediation in the Atacama Desert, which has been polluted by textile waste.
4. **Evaluate the environmental impacts of textile dumps.** There is general agreement on the negative impact of textile dumps in the Atacama Desert. However, to date, no study has measured the environmental impacts (on air, soil, and groundwater) of the decomposition of textiles under the climatic conditions of the Atacama Desert or the impact on the health of nearby populations. Assessments of this nature would form the basis of an environmental mitigation policy for existing dumps.

Pursue domestic policy action in exporting countries : EU example

1. **Make circular economy considerations central to the design of clothing**, with mandatory targets to improve the quality, durability, repairability, and recyclability of garments. This includes design for disassembly and end-to-end traceability of garments and fibres, including their origin. This is key to targeting investments in recycling facilities appropriate to the fibre composition of large future flows of textiles.
2. **Introduce an Extended Producer Responsibility (EPR) system** that holds companies that put products on the market responsible for those products after use, incentivising improvements in quality, and increases in rates of repair, reuse, and recycling. Such a system can be introduced as part of the EU regulatory framework and should be calibrated according to the amount of clothing produced, its recycling and repair potential, and the degree to which it conforms to social and environmental standards.
3. **Develop more sorting and recycling plants** by providing financial incentives to scale up affordable technologies and solutions that support recycling, particularly blended fibres. Policymakers should explore fiscal and non-fiscal incentives for innovation, and the introduction of mandatory recycling targets for manufacturers would stimulate the demand from manufacturers for recycled fibres.
4. **Incentivise and facilitate increased levels of traceability and transparency in fashion value chains** through the expanded use of DPPs, improved labelling, and more significant data collection on the flows of items domestically and internationally.

5. **Run awareness-raising campaigns** to encourage consumers to make more informed choices about their clothes, such as buying fewer items of better quality, renting rather than buying some garment types, and circulating clothes to peers after use.
6. **Take measures to tackle fast fashion and ultra-fast fashion** by, for instance, levying a fee per garment to take account of its environmental impacts, charging consumers for returning clothes after a short period (to reduce the number of second-hand clothes going to waste), restricting advertising of certain products, and mandating retailers to include an item's reuse, repair, recycling potential and environmental impact alongside its price. Some of these measures have recently been passed by the lower house of the French parliament (BBC, 2024).

Conclusion

No single solution can reduce the massive volume of used garments, most of which have little economic value, that end up as textile waste around the developing world, including in the Atacama Desert. A multi-level approach that is well coordinated between exporting and importing countries and that involves national and subnational authorities alongside affected communities is needed.

Implementing this mix of measures requires the engagement of multiple authorities and stakeholders concerned with local environmental and social issues. As this study reports, their members are aware of the multidimensionality of the challenges to be addressed and have already implemented solutions on a small scale.

In the end, systemic solutions are needed to reduce the volume of new clothes put on the market, ensure clothes are designed to be free of toxic chemicals, and encourage longer use phases and multiple cycles of reuse—a circular economy for fashion.

UNECE and ECLAC will engage with government partners in the EU and Chile on the issues raised in this report, reach out to stakeholders across the value chain to convene working groups on systemic solutions, and seek to align legislation in the EU and Chile. The overarching aim is to increase the circularity of textile flows domestically and internationally.

An example of outreach to government partners is the partnership between ECLAC and the Chilean government on Technical Assistance. Objectives for this programme include incorporating an international trade dimension into Chile's National Strategy for Circular Economy in Textiles (ENECT), promoting complementarity between Chile's EPR Law and ENECT, and developing public-private cooperation to increase levels of traceability and transparency in the fashion industry value chains.



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Appendices

Appendix 1: List of interviewees

Organisation	Name	Position	City
Circle Economy	Hilde van Duijn	Head of Global Value Chains	Amsterdam, The Netherlands (NLD)
	Jessica Soto	President	
Circular Economy Trade Association	Paulo Araya	Vice president	Santiago, Chile (CL)
	Rocío Bertín	Associate	
Empresas Portuaria de Iquique S.A (EPI)	Magdalena Balcells	Chairwoman of the Board	Iquique, CL
	Rúben Castro	General Manager	
Holland Circular Hotspot	Freek van Eijk	Director	Amsterdam, NLD
Integrated Foreign Trade System (SICEX)/ Ministry of Finance	Bárbara Matamala	Director	Santiago, CL
	Viviana Nuñez	Analyst	
Ministry of Environment (MMA)	Tomás Saieg	Head of the Circular Economy Office	
	Loreto Vera	Professional in the Circular Economy Office	
Municipality of Alto Hospicio	Edgar Ortega	In charge of the environment	Alto Hospicio, CL
Regional Customs Directorate Iquique	José Luis Santana	Head of Department of Free Trade Zone Iquique	Iquique, CL
	Ricardo Aceituno	Regional Director of Customs Iquique (S)	
PACE	Heyd Mas	Program manager	The Hague, NLD
Port of Iquique	Magdalena Barcells	Chairwoman of the Board	Iquique, CL
	Rubén Castro	CEO	
Independent Profesional	Douwe Jan Joustra	Consultant	Amsterdam, NLD

Organisation	Name	Position	City
Program to Accelerate the Circular Economy (PACE)	Ramona Liberoff	Executive Director	The Hague, NLD
Regional Government of Tarapacá	Pablo Zambra	Manager of decontamination, human development and sustainability	Iquique, CL
Regional Ministerial Secretariat for Transport (SEREMI-Tarapacá)	Roderick Solis	Director	Santiago, CL
Regional Ministerial Secretary of Environment of the Tarapacá Region	Jessica Alarcón Muñoz	Professional of Circular Economy and Climate Change	Santiago, CL
	Paula González Pizarro	Professional of Circular Economy and Climate Change	
Sustainability and Climate Change Agency	Ambrosio Yobanolo	Deputy Director of Planning and Management Control	Santiago, CL
	Nora Fredericksen Neira	Senior Coordinator of Agreements and Sustainable Production	
Undersecretary of International Economic Relations	Angélica Romero	Head of Trade and Sustainable Development a	Santiago, CL
	Vanessa Maynou,	Focal Point, OECD Department	
The Hague University of Applied Sciences	Kim Poldner	Professor	The Hague, NLD
	Ishwari Thopte	Senior Researcher	
Utrecht University	Denise Reike	Lecturer and Researcher	Utrecht, NLD
ZOFRI S.A.	Alfredo Leyton	Chairman of the Board	Iquique, CL
	Jaime Soto	CEO	
	Miguel Ángel Perret	Operations Manager	
ZOFRI Users Association	Dario Blanco Leiva	CEO	Iquique, CL
	Samet Hozer	Importer and Exporter Sardes LTDA	

Appendix 2 : The role of ZOFRI

ZOFRI²⁰ was created in 1975 as part of the public policy for Extreme Zones, which sought to promote investment, entrepreneurship, and employment in the areas furthest from the country's political centre, near borders, and under unfavourable development conditions. The Extreme Zone Policy provided fiscal benefits to firms in the duty-free zones, wage subsidies, credits for investment, and subsidised sales.

ZOFRI is governed by the Free Trade Zone Law²¹, which eliminates import tariffs for merchandise entering such zones. Tariffs are applied only to merchandise sold in the national customs territory outside the "Free Trade Extension Zone"²². The law defines a free trade zone as:

*"The area or unitary portion of territory perfectly demarcated and close to a port or airport protected by the presumption of customs extraterritoriality. The merchandise can be deposited, transformed, finished or commercialised in these places without restriction."*²³

Law Decree N°1055 of 1975 of the Ministry of Finance establishes the Free Trade Zone of Iquique and the Free Trade Zone of Punta Arenas. Exemptions from income tax and value-added tax are the main fiscal benefits received by users of free trade zones and the free trade zone Management Company (ZOFRI S.A.)²⁴. In addition, free trade zone users do not pay customs duties or import tariffs. While the most-favoured-nation tariff is 6%, the average tariff applied in 2021 in ZOFRI was 0.77%²⁵.

Specific import procedures apply to free trade zones and goods in transit. Foreign goods destined for free trade zones must be accompanied by a Request for Shipment to Free Trade Zones. The goods may remain in such a zone for resale or further processing or to be brought into the national customs territory or to a free trade extension zone. Goods in transit must be accompanied by a Declaration of Transit and the International Freight Document – Transit Declaration (WTO, TPR2003).

20 ZOFRI is managed by ZOFRI S.A., a state-owned enterprise regulated by the System of State-owned Enterprises (Sistema de Empresas Públicas -SEP). CORFO, the Chilean Agency for Economic Development, owns 72.6% of the property. In addition, some public agencies play an indirect role in regulating of the free trade zone. In this regard, the Comptroller General of the Republic guarantees that the budget authority (DIPRES), the National Customs Service, and the regional government abide by and correctly interpret free trade zone law.

21 Decree with Force of Law N°2 of 2001.

22 Free Trade Zone Law, Art. 10.

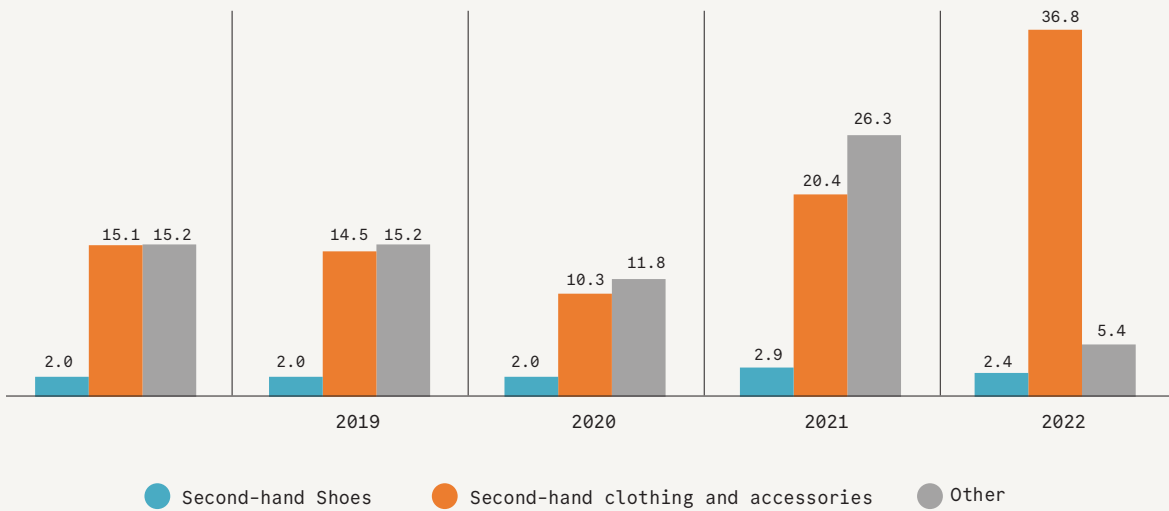
23 Free Trade Zone Law, Art. 2.

24 The tax regime that benefits companies and people who operate in the free zone, as well as ZOFRI S.A., contemplates the following franchises: i) Exemption from payment of Corporate Income Tax; ii) Exemption from payment of Value Added Tax (VAT) for operations carried out under the regime of free zone.; iii) Exemption from payment of VAT for services provided between users within the free-zone area; and iv) Credit equivalent to 50% of the income tax rate. First Category (rent) has been paid for Complementary and additional Global Tax.

25 National Customs Service.

Appendix 3: Chilean imports of second-hand clothing

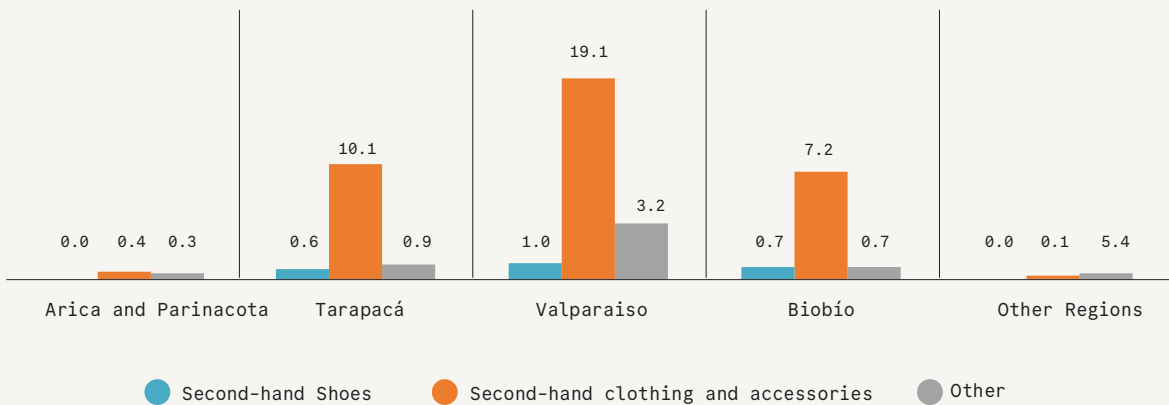
According to the Chilean National Customs Service, in 2022, second-hand clothing imports into Chile consisted of second-hand clothing and accessories (USD 36.8 million), second-hand shoes (USD 2.4 million) and other (USD 5.4 million). From 2018 to 2022, second-hand clothing imports overall grew at an average compound annual growth rate (CAGR) of 8.4%, with the category second-hand clothing and accessories growing at an average CAGR of 25%, from USD 15.1 million in 2018 to USD 36.8 million in 2022 (see Figure A1).



The region of Valparaíso in central Chile is the main entry point of second-hand clothing, accounting for 52.5% of total imports by value. The Tarapacá region in the North ranks second with a share of 26.1%, followed by the Biobío region with 19.2% (see Figure A2).

Figure A1. Imports of second-hand clothing into Chile (USD million) 2018-2022

Source: Chilean National Customs Service



According to Chilean National Customs Service data, from 2017 to 2022, an average of 32,027 tonnes of second-hand clothing was imported yearly. Imports peaked in 2022 at 36,971 tonnes and reached their lowest level in 2020 at 28,417 tonnes. The average cost of second-hand clothing and accessories was USD 1.17 per kilogram. San Antonio and Iquique were the main entry points for this merchandise in terms of value in 2022, but Iquique led in volume (40% of the total) – see Table A1.

Figure A2. Imports of second-hand clothing into Chile by destination region (USD million), 2022

Source: Chilean National Customs Service

Table A1. Imports of second-hand clothing into Chile by volume and value (CIF), 2022

Products	USD CIF Value	Share (in %)	Kg	USD per kg
Used shoes	2,377,802	5.3	1,308,137	1.82
Arica	11,483	0.0	16,603	0.69
Iquique	647,693	1.5	425,424	1.52
Metropolitana	12,556	0.0	121	103.89
San Antonio	744,394	1.7	411,601	1.81
Talcahuano	665,323	1.5	329,962	2.02
Valparaíso	296,354	0.7	124,425	2.38
Second-hand clothing and accessories	36,830,773	82.6	31,391,911	1.17
Antofagasta	57,312	0.1	77,800	0.74
Arica	412,868	0.9	1,057,120	0.39
Iquique	10,087,797	22.6	13,029,657	0.77
Los Andes	15,525	0.0	2,267	6.85
Metropolitana	17,664	0.0	871	20.29
San Antonio	11,997,555	26.9	9,284,722	1.29
Talcahuano	7,250,455	16.3	3,266,292	2.22
Valparaíso	6,991,596	15.7	4,673,182	1.50
Bed linen, Table linen, Toilet linen and kitchen linen	1,809,650	4.1	1,870,339	0.97
Arica	216,894	0.5	422,285	0.51
Iquique	514,642	1.2	686,674	0.75
Los Andes	5,447	0.0	761	7.16
Metropolitana	6,774	0.0	74	91.64
San Antonio	552,334	1.2	438,228	1.26
Talcahuano	274,130	0.6	165,648	1.65
Valparaíso	239,429	0.5	156,669	1.53
Other	3,578,986	8.0	2,400,979	1.21
Arica	45,206	0.1	175,893	0.26
Iquique	389,387	0.9	465,285	0.84
Metropolitana	248,375	0.6	28,444	8.73
San Antonio	1,419,563	3.2	1,001,745	1.42
Talcahuano	449,738	1.0	269,740	1.67
Valparaíso	1,026,717	2.3	459,872	2.23
Total Imports	44,597,212	100	36,971,367	1.21

Source: Author calculations based on Chilean Customs data

Appendix 4: The Latin American Perspective

Note on data: *The information and diagrams obtained from WITS and UN Comtrade exhibit the initial destination of exported second-hand clothing. This is important when examining statistics on merchandise entries into ZOFRI and the Port of Iquique, which mainly cater to the Arica and Parinacota region, the Tarapacá region, and the neighbouring countries of Bolivia (P.S. of) and Paraguay. Cargo in transit to Bolivia (P.S. of) represented 35% of total cargo in 2022 (Memoria Annual EPI, 2022).*

Textile and second-hand clothing trade in Latin America

According to UN Comtrade data, the value of second-hand textiles and clothing imported into Latin America has increased enormously over the past three decades, from USD 31.3 million in 1992 to USD 608.8 million in 2021. In 1992, Chile, Bolivia (P.S. of) and Mexico were the three leading importers of second-hand clothing, with purchases totalling USD 27.2 million. In 2021, Chile was the top regional importer, followed by Guatemala, Honduras, Nicaragua and El Salvador. From 1992 to 2019, only Guatemala experienced continuous growth, while Nicaragua saw a slight decline in 2018. Chile, the leading Latin American importer in this period, experienced import drops in 2013-2015, 2019 and 2020.

Much of the second-hand clothing imported into Latin America comes from the United States and the European Union. In the case of Chile, however, China and the United States account for 27.5% and 25.2% of the value of used imported clothing, respectively, followed by the European Union and the Republic of Korea. Within the EU, Germany, Poland, Spain and the Netherlands are the predominant exporters of second-hand clothing to Latin America. Of the top 10 importers of second-hand textiles and clothing from the European Union, Chile is the only trading partner from Latin America (see Table A2).

Table A2. Top five importers of second-hand clothing in Latin America, 2021

Country (Income Level) ²⁶	Imports		Source of imports			
	Thousands of USD	Thousands of tonnes	Partners	Thousands of USD	Thousands of tonnes	USD per kg
Chile (High Income)	166,388	126.3	China	45,818	12.1	3.77
			United State	41,867	54.9	0.76
			South Korea	18,775	7.5	2.50
			Unspecified	17,715	13.9	1.27
			EU27+UK	17,703	12.6	1.38
			Pakistan	11,708	9.6	1.22
Guatemala (Upper-middle income)	157,358	130.3	United States	155,268	129.4	1.20
			EU27	460	0.33	1.41
			Canada	419	0.5	0.83
			China	134	0.03	4.79
Honduras (Lower middle income)	123,926	65.9	United States	121,500	64.5	1.89
			EU27	1,197	0.88	1.35
			Canada	405	0.5	1.76
			Pakistan	190	0.1	1.84
Nicaragua (Lower middle income)	88,505	52.5	United States	77,470	46.2	1.68
			EU27	3,967	2.3	1.71
			Canada	3,514	1.68	2.09
			Oman	964	0.27	3.55
El Salvador (Lower middle income)	62,250	35.3	United States	59,780	33.8	1.77
			EU27	1,379	0.71	1.95
			China	286	0.2	1.42
			Canada	139	0.19	0.74

Source: WITS based on UN Comtrade

26 World Bank classification

Latin American bans and restrictions on second-hand clothing imports

The trade in second-hand clothing depends on institutional and regulatory frameworks that determine its administrative processes, patterns, and trends and the roles of stakeholders (importers, traders, retailers, regulators, and inspection authorities, among others). Some countries in Latin America have banned the import of second-hand clothing for health reasons or to protect their domestic textile industries (see Table A3). These bans divert exports to countries without restrictions, which can lead to smuggling. For example, in 2020, the National Confederation of Micro and Small Entrepreneurs in Bolivia (P.S. of) estimated that the smuggling of second-hand clothing generated USD 70 million of losses to the domestic textile sector.

Table A3. Latin American countries with bans on second-hand clothing trade

Country	HS code and tariff	Measure	Legal basis	Requirements and exceptions
Argentina	NCM 6309.0010	Temporary import ban on second-hand clothing, clothing accessories, blankets and travelling rugs in bulk or similar packaging due to sanitary reasons.	Decree N°333 of 15 May 2017, Ministry of Production	The measure excludes second-hand clothing whose final purpose is donation through private and public charitable organisations.
	6309.0090			
Bolivia (P.S. of)	6309.00.00	Import ban on second-hand clothing and accessories, including shoes and other products, considered unhygienic (except with the express permission of the relevant authority).	Supreme Decree N°27340/2004	A sanitary disinfection certificate is required. It is issued by the Ministry of Health and Sport or by the competent authority in the country of origin.
	20%		Supreme Decree N°28614, February 1 st , 2006	
			Supreme Decree 28761 of June 21 st , 2006.	
Brazil	6309.00		Supreme Decree 29521/2008	Only used-clothing donations may be imported and are subject to non-automatic licensing.
	6310.00			
	35%			
Colombia	6309.00	Import ban on second-hand clothing	Andean Community Decision N°331/1995	A certificate of disinfection issued by a sanitary authority in the country of origin is required.
	10%		Decree N°074, 2013 Ministry of Trade, Industry and Tourism	The entry of worn clothing for donation purposes must be authorised by the Ministries of Finance and Production through a bi-ministerial resolution, identifying the beneficiary and the destination of the merchandise.
			Decree N°456, February 28 th , 2014, Ministry of Trade, Industry and Tourism	

Country	HS code and tariff	Measure	Legal basis	Requirements and exceptions
Ecuador	6309.000 5.5/kg+ 10%	Import ban on second-hand clothing and shoes to protect people's health.	Andean Community Decision N°331/1995 Resolution N°020, COMEXI, June 1 st , 1999.	No exception
México	6309.00.01 20%	Import ban on second-hand clothing		Donations in case of emergency or disaster.
Paraguay	6309 6310 35%	Import ban on second-hand clothing and footwear to protect people's health.	Decree N°7084/00 bans used-clothing imports. Decree N° 6432/05 of 26 September 26 th , 2005	
Peru	6309.00.01 11%	Import ban on second-hand clothing to protect people's health and the national clothing industry	Andean Community Decision N°331/1995 <i>Supreme Decree N°057-2004</i> <i>Law N°28514, May 20th, 2005</i>	Donations to the private sector require authorisation from the Peruvian Agency for International Cooperation, while donations to the public sector require authorisation from the Peruvian Council of Ministers (Consejo de Ministros del Perú).
Dominican Republic	63.09	Import ban on clothing, bedding and table linen, china and kitchenware, put into disuse by clinics, hospitals and sanatoriums or of undetermined origin, brought into the country for commercial purposes and charity.	Worn clothing is banned under DRNA CAFTA and Law No. 458 (1/3/1973) for public health reasons.	The measure exempts clothing, toiletries, bed and table linen, household furniture, crockery and kitchenware which have been used for the personal use of a passenger or a family under the provisions National Tariff Law No. 170, dated June 4 th , 1971

Source: UNECE / ECLAC analysis

A second group of Latin American countries allows the import of second-hand clothing but only under certain conditions, such as meeting specific sanitary requirements. These restrictions aim to safeguard public health and the environment. This group includes Chile, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Uruguay (see Table A4). In general, second-hand clothing is subject to import tariffs in these countries, except those with free trade agreements. The most common requirement is a sanitation certificate issued by a competent authority in the exporting country.

Table A4. Latin American countries allowing second-hand clothing imports with restrictions

Country	Tariff line and tariff rate	Requirement	Legal Basis
Chile	6309, 6310	Import of second-hand clothing requires fumigation and a certificate of sanitation issued at the origin before customs clearance	Resolution 1101 Agriculture and Livestock Service (SAG)
	Tariff Rate 6% MNF US-Chile FTA duty-free.		
Costa Rica	6309	Establishes health requirements to be met by imported second-hand clothing packed in bulk or customs clearance and marketing. It also establishes a registry and mandatory sanitation.	Decree N°42t468 Technical Regulation 494 of July 9 2018
	14% DR-CAFTA duty-free		
El Salvador	6309	Imports of second-hand clothing require a health certificate issued by the exporting country and the second-hand clothing must be disinfected and certified in El Salvador before customs clearance.	
	Tariff rate 15% 6310- 15% DR-CAFTA duty-free		
Nicaragua	6309-15%	Health certificates are required. HS 6310, textile items (i.e., rags) are restricted to imports used solely for the recovery of fibres.	
	6310 5%-10%		
Uruguay	6309	A certificate of disinfection is required that includes a notarized statement from a commercial firm that the articles have been disinfected or dry-cleaned.	
	Tariff rate 20% 6310 Tariff rate 0-20%		

Source: Authors based on US International Trade Administration. Office of Textile and Apparel. <https://www.trade.gov/textile-and-apparel-market-report-worn-clothing-requirements>

Second-hand clothing imports in Latin American regional and bilateral trade agreements

Most Latin American countries that impose quantitative restrictions on second-hand clothing imports have safeguarded these measures in their bilateral and regional trade agreements in line with their domestic laws and regulations. This is the case with, for example, Costa Rica, Mexico and Peru. Those countries that allow the import of used garments have not included any restrictions in their trade agreements, making it challenging to apply restrictions once the agreement has entered into force.

The Andean Community approached the second-hand clothing import question early with the aim of safeguarding the health of the population and protecting local industry. Decision 337 of the Commission of the Cartagena Agreement dated August 20, 1993, authorised member countries to apply non-tariff measures to imports of second-hand clothing. The Decision allows the adoption of restrictive measures, such as minimum value requirements, sanitary measures, and certificates of origin, among others.

In the Common Market of the South (Mercosur), the Treaty of Asunción does not refer to second-hand clothing trade. However, in 1994, it issued Resolution GMC No. 109/94, which is still in force, that establishes: “1) *Instruct the Mercosur Trade Commission (CCM) to submit to the Common Market Group (GMC) until March 31, 1995, draft Common Regulations on the imports of used goods. 2) Until the Regulations mentioned in Article 1 are approved, the States Parties shall apply their respective national legislation to the imports of used goods in trade with third countries and intra-Mercosur trade.*” The provision includes second-hand clothing, but no regulation for importing used goods has been approved to date. In practice, only Paraguay restricts second-hand clothing imports. The Economic Complementarity Agreement No. 35 signed between Mercosur and Chile establishes in Article 2, paragraph l) that: “*Used goods will not benefit from the Trade Liberation Program of this Agreement.*”

Peru has included restrictions on the trade of second-hand clothing in all its bilateral trade agreements, while in the DR-CAFTA free trade agreement²⁷ only the Dominican Republic maintained restrictions on used garments according to its domestic legislation. The US-Chile Free Trade Agreement has a provision that applies to imports of used goods, including second-hand clothing; according to Article 3.4 of the agreement, Chile committed to eliminate the 50% surcharge applied to used goods imports, with certain exceptions.

27 Free trade agreement between the United States and Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and the Dominican Republic. For more information see: <https://ustr.gov/trade-agreements/free-trade-agreements/cafta-dr-dominican-republic-central-america-fta>

Appendix 5: The African experience

Kenyan and East African codes of practice for second-hand clothing

Kenya is one of the largest importers of second-hand clothing in Sub-Saharan Africa and has become a dumping ground for worn-out and worthless textile products. These imports have had significant impacts, including on the domestic textile industry and the environment.

Although there is no statutory framework governing the trade of second-hand clothes in Kenya, a “Code of Practice for Inspection and Acceptance Criteria for Used Textile Products” (hereinafter “the Code of Practice”) has been in place since 1999. This code outlines conformity criteria for used garments and requirements of the relevant Kenya Standards, including other requirements on microbiological examinations, packaging, sampling and acceptance. It also defines key terms such as used garment, defect, grade, bale and consignment. The Code of Practice also establishes criteria for packaging (each consignment must be packed in clear, transparent and waterproof material)²⁸.

Each bundle must not exceed 50 kilos and must contain second-hand clothing of the same type, for example, men’s shirts, men’s jackets, men’s trousers, women’s dresses, women’s blouses, boys’ shirts, etc. Regarding labelling, the Code indicates that each bundle must be marked with the following information: (i) Mass of bale in kilograms; (ii) Type of garments; (iii) Grade (Super, First or Second. Grades shall not be denominated Gold, Diamond or Silver); (iv) Supplier’s name and address; (v) Consignee’s name and address; (vi) Country of origin; (vii) Size category (whether for adults or children). The code also bans imports of the following textiles items: i) used nightwear including pyjamas, nightdresses and nightgowns; ii) hospital wear; iii) used bath towels; and iv) used undergarments including women’s slippers, men’s underpants, brassieres, camisoles, socks, stockings and underwear.

In 2020, Kenya updated the Protocol for imports of used textiles and used footwear, which mandates that all used textiles and shoes intended to enter Kenya shall be subjected to physical examination and certification under the Pre-export Verification of Conformity to Standards (PVoC) requirements. In addition, the supplier shall make a self-declaration confirming that a shipment is free from items prohibited by a Code of Practice for Inspection and Acceptance Criteria for Used Footwear.

The East African Community (EAC) has also made progress in developing a standard for used textile products²⁹. In April 2023, the EAC released the third edition of its Draft East African Standard for Textiles - Requirements for Inspection and Acceptance of Used Textiles Products (DEAS-RIAUTP), which specifies general requirements, sampling and test methods for garments, whether made of textile, plastic-coated fabric, fur or any combination of these materials³⁰.

Like the Kenyan Code of Practice, the Draft East African Standard (see Table A5) includes key definitions such as used textile product, defect, inspection, consignment, lot, grade, bale, sleepwear, hospital textiles, high visibility garments, undergarments, and country of supply. Bales will be allowed a permissible number of defects when visually examined for the defects listed in the draft regulation.

28 https://www.ids.trade/files/news/2006/Kenya_Code_used%20Textiles.pdf

29 The EAC is comprised of Burundi, Kenya, Rwanda, Uganda, and Tanzania. In 2016 it established a policy to phase-out the import of second-hand clothing and textile which it abandoned in 2017.

30 https://members.wto.org/crnattachments/2023/TBT/UGA/23_8885_00_e.pdf

Table A5. Draft East African Standard: Requirements for Inspection and Acceptance of Used Textiles Products

Concepts	Definitions
Used textile product/ used garment	Textile product, including apparel, apparel accessories (such as but not limited to, gloves, hat, bags and belts), soft furnishings (towels, bed linen, curtains, carpets, etc.), that has been used previously and is to be offered to a subsequent user.
Defect	Lack of quality characteristic that results in a textile product not complying with its intended normal usage requirements.
Grade	Indicator of category or rank related to features or characteristics that cover different sets of needs for products or services intended for the same functional use.
Consignment	Part of or all the goods sent to a person or a place for any purpose. All used textile products received by whatever means through any port of entry or that are on transit shall be understood to be consignments.
Inspection	Activities such as measuring, examining, gauging one or more characteristics of a product or service and comparing these with specified requirements to determine conformity.
Grade	Indicator of category or rank related to features or characteristics that cover different sets of needs for products or services intended for the same functional use.
Bale	Collection of used textile products packed together in a suitable material that may or may not be bound with metallic or textile strips.
Lot	Collection of bales from which samples shall be drawn and inspected to determine compliance with the acceptance criteria.

Source: East African Standards. *Draft East African Standard Textiles — Requirements for inspection and acceptance of used textile products Third edition (2023)*

Ghana

According to the OR Foundation, which works in Ghana on trade and textile waste from imported second-hand garments, extended producer responsibility (EPR) laws must be implemented under three principles (see Table A6). These principles are key to encouraging the development of new, cleaner and more responsible production and consumption practices in the global textile trade.

Table A6. Key principles in the implementation of EPR laws for textiles

Principle	Result
Internalisation of waste management costs	CSR tariffs should be aligned with the waste management costs faced by producers, determined based on the reusability, recyclability, durability, etc. they possess in accordance with circular economy criteria along the reverse supply chain globally. In addition, these tariffs should generate financial incentives for waste treatment in a circular manner. The OR Foundation recommends that base rates start at USD 0.50 per newly produced garment.
Global accountability	EPR programs must cross borders and seek spaces for coordination and response to reality in the countries of origin and destination of garments, following the globalised flows of the clothing trade. Funds need to be distributed to enable circular infrastructure in the country of destination and origin and to account for losses and damages incurred in economically and environmentally vulnerable communities.
Disclosure to drive circularity goals	To achieve eco-modular EPR tariffs, programmes should require companies to disclose production volumes along each eco-modulated tranche. This information must be available per company to achieve the goal of reducing new clothing by 40% within five years, associated with an increase in the reuse and remanufacturing of existing materials in a balanced manner.

Source: Source: The OR Foundation

Collecting tariffs from companies makes it possible to make transparent the true cost of textile-waste management in importing countries. EPR schemes assign responsibility to producers rather than traders, incentivising them to design and manufacture garments in line with the principles of the circular economy, thereby maintaining the value of textiles and facilitating their post-use marketing, to the benefit of those for whom this market is their main source of income. The OR Foundation argues that the responsibility of companies involves the implementation of return schemes, which classify and treat products once consumers have stopped using them. Financial responsibility is taken when producers provide the resources to manage products safely and effectively after use.

Reversing direction in the used clothing crisis: Global, European and Chilean perspectives

Since 2012, the Alto Hospicio Municipality in the Chilean Atacama Desert has witnessed the fast growth of large illegal dumps of discarded clothing and textile products. Several tens of thousands of tonnes of textile waste cover around 300 hectares, some of which are burned on-site. Most clothes are made of synthetic fibres, and their incineration releases heavy metals, acid gases, particulates, and dioxins, harming the health of people nearby and damaging the local environment.

Such dumps – also present in Ghana, Kenya, and Pakistan, among other countries – are symptoms of the problem of developing countries importing large volumes of low-value textiles, which they struggle to use in economically and environmentally beneficial ways. While local circumstances in each importing country are unique, the underlying cause is the export of large volumes of second-hand clothes from developed countries, driven by changes in the global fashion industry in recent decades.

In this context, in 2023, the United Nations Economic Commissions for Europe (UNECE) and for Latin America and the Caribbean (ECLAC) conducted a global study on second-hand clothing flows and the business models driving them, with a focus on Europe as an origin and Chile as a destination.

The study includes the results of fieldwork undertaken in the second-hand clothing markets of the Tarapacá region of Chile. It formulates policy recommendations that aim to improve the economic, social, and environmental outcomes of the global trade in second-hand clothes.

Information about overall activities of the UNECE Economic Cooperation and Trade Division on Circular Economy is available at: <https://unece.org/trade/CircularEconomy>

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