



The Quality of Second-Hand Clothes Imported to Kenya and the Associated Environmental Impacts

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Table of Contents

List of Tables	4
Table of Figures	5
Definitions of Terms	6
Executive Summary	7
Chapter 1: Study Background	8
1.1 Background	12
1.2 Problem statement	12
1.3 Study objectives	13
Chapter 2: Methodology	15
2.1 Methodology and analytical framework	15
Chapter 3: Study Findings	18
<i>Objective A: Estimate the proportion of imported second-hand clothing that is disposed of as waste</i>	18
3A.1 Introduction	18
3A.2 Importers	18
3A.2.1 Source and composition of materials in second-hand clothing	18
3A.2.2 The quality of second-hand clothing imported into Kenya	20
3A.2.3 Sourcing, selection, inspection and grading	23
3A.2.4 Quality assurance	24
3A.2.5 Packaging and documentation	24
3A.2.6 Compliance with regulations and processes	25
3A.2.7 Content of the second-hand clothing imported into Kenya	29
3A.3 Retailers	29
3A.3.1 Role of retail traders in the second-hand clothing market	29
3A.3.2 Quality of the second-hand clothing sold by retailers	30
3A.3.3 Upcycling individual low quality second-hand clothes pieces	31
<i>Objective B: Estimate the proportion of textile waste in general household waste across Nairobi</i>	33
3B.1 Introduction	33
3B.2 Proportion of textile waste in household waste	33
<i>Objective C: Estimate the proportion of textile waste that is deposited at the Dandora dumpsite</i>	37
3C.1 Proportion of textile waste deposited at the Dandora dumpsite	37

3C.2	Upcycling of waste not deposited at the Dandora dumpsite	37
3C.3	Conclusion	38
	Objective D: Analyse the environmental impact of the second-hand clothes trade versus the manufacture of new clothes	39
3D.1	Introduction	39
3D.2	Environmental impacts associated with textile manufacture	39
3D.3	Environmental and economic impacts associated with the use of second-hand clothing	41
	Objective E: Demonstrate the economic, social and environmental impacts of the SHC trade more broadly and how it underpins the circular economy approach that the EU, African and US markets are starting to pay more attention to	44
3E.1	Introduction	44
3E.2	Linear vs circular economy	44
3E.3	Circular economy in the concept of SHC	45
3E.4	Role of second-hand clothing importers in contributing to circular economy	46
3E.5	A snapshot of circular economy globally	47
3E.6	Recommendations	48
	Conclusion	49
	References	51

List of Tables

Table 1: In-depth interview guides framework for stakeholders in the textile industry	16
Table 2: Survey questionnaire framework for end-users of second-hand clothing	16
Table 3: Defects classification (KEBS STANDARD, KS EAS 356:2019 (ICS 58.080.10)	22
Table 4: Permissible number of defectives (KEBS STANDARD, KS EAS 356:2019 (ICS 58.080.10)	22
Table 5: Microbiological limits (KEBS STANDARD, KS EAS 356:2019 (ICS 58.080.10)	22
Table 6: Domestic Waste Composition in Nairobi	33

Table of Figures

Figure 1: Proportion of respondents reporting awareness of textile recycling programs (Source: Household Interviews)	35
Figure 2: Linear Economy Model	43
Figure 3: Circular Economy Model	44

Definitions of Terms

Circular Economy: The circular economy is a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products for as long as possible. In this way, the life cycle of products is extended. A circular economy can increase competitiveness, stimulate innovation, boost economic growth and create jobs. Consumers are provided with more durable and innovative products that will improve their quality of life and reduce the cost of living in the long term. In a circular economy the traditional distinction between consumer and producer breaks down with the consumer being a partner or 'co-producer' in the production process. In the second-hand clothes industry, the suppliers, importers and traders collaborate closely together about the quality of the second-hand clothes.

Consumer Behaviour: The actions and decision-making processes of individuals when purchasing, using, and disposing of clothing and textiles.

Bale of Second-Hand Clothing: A bundle of clothes that is collected, sorted and compressed for resale or recycling purposes. A bale of clothing on average contains about 350 individual items of clothing.

Defects: A departure of a quality characteristic that results in a textile product not complying with its intended normal usage requirements. The Kenya Standards specify defects as serious, major or minor for the purposes of inspection.

Second-Hand Clothing: Also known as "used clothing" or "pre-owned clothing", it relates to garments and accessories that have been previously owned, worn or used by individuals and are available for resale or donation.

Sustainability: The practice of meeting current needs without compromising the ability of future generations to meet their needs. In the context of this report, it relates to reducing textile waste and its environmental impact.

Textile Downcycling: The process of recycling textiles into products of lower value or utility compared to the original item.

Textile Reuse: The act of using second-hand clothing for its original purpose without undergoing significant alterations.

Textile Waste: Discarded or unusable garments, fabrics, or textile materials that have been rendered unsuitable for their original intended purpose due to various types of damage including wear and tear, stains, rips, tears, holes, or any other factors that compromise the garment's functionality, appearance, or safety.

Textile Waste Management: Strategies and practices aimed at reducing, reusing, and recycling textile waste to minimise its impact on the environment and human health.

Upcycling: The creative process of transforming worn-out or old clothing items into higher-value products or garments.

¹ European Parliament. 2023. Circular economy: definition, importance and benefits. <https://www.europarl.europa.eu/news/en/headlines/economy/20151201STO05603/circular-economy-definition-importance-and-benefits>.



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The second-hand clothing (SHC) trade, commonly known as “mitumba” in Kenya, is a vital component of Kenya’s apparel market.



The sustained growth in imports reflects the growing demand among Kenyan households for second-hand clothing.

Executive Summary

The second-hand clothing (SHC) trade, commonly known as “*mitumba*” in Kenya, is a vital component of Kenya’s apparel market. It provides access to fashionable and quality garments at affordable prices to large sections of the population, and plays a significant role in the local economy through job creation and revenue generation. Data from the Kenya National Bureau of Statistics (KNBS) 2022 Economic Survey shows that Kenya imported 183,830 tonnes of second-hand clothing in 2021, a 39% increase from 132,565 tonnes in 2017. From 2016-2021 second-hand clothing imports averaged 159,705 tonnes annually.² The sustained growth in imports reflects the growing demand among Kenyan households for second-hand clothing. The Institute of Economic Affairs (IEA Kenya) reported that second-hand clothing and footwear contribute approximately Ksh 12 billion in tax revenue in the form of import duties and the industry employs approximately 2 million people.³

While there have been allegations of textile dumping in African countries, the evidence to support those allegations is insubstantial. The second-hand clothing trade is a vast industry which involves investment in cleaning, sorting and importing quality clothes for consumers. This investment does not lend itself to intentional dumping.

To address claims around textile dumping, the *Mitumba* Consortium Association of Kenya (MCAK) commissioned an evidence-led review that drew on available empirical evidence as well as a large number of interviews to examine how the sector is managed in relation to dealing with waste.

Study objectives

Our research had the following aims:

- A. Estimate the proportion of imported second-hand clothing that is disposed of as waste.
- B. Estimate the proportion of textile waste in general household waste across Nairobi.
- C. Estimate the proportion of textile waste that is deposited at the Dandora dumpsite.
- D. Analyse the environmental impact of the second-hand clothes trade versus the manufacture of new clothes.
- E. Demonstrate the economic, social and environmental impacts of the SHC trade more broadly and how it underpins the circular economy approach that the EU, African and US markets are starting to pay more attention to.

Summary of findings

SHC imported into Kenya meets the required quality standards: The findings of this research suggest that the quality of SHC imported and traded in Kenya generally meets the quality standards that are required for suppliers, importers and traders alike to achieve a viable and profitable business. Interviewed importers make clear that they have invested in internal quality control processes and benefitted from the external processes and infrastructure at

²Kenya National Bureau of Statistics .2022. Economic Survey.

³Institute of Economic Affairs.2021. The state of the second-hand clothes and footwear trade in Kenya. <https://ieakenya.or.ke/download/the-state-of-second-hand-clothes-and-footwear-trade-in-kenya/>

sorting centres to ensure that the garments they import into the country are in good condition and generally meet the expected quality standards. It is not in the interests of importers to import second-hand clothes that cannot be sold on given the cost of the clothes, transportation, shipping, importation, and so on.

Established processes and measures have ensured importation of quality SHC by importers: Research findings indicate that importation of quality SHC resulting in low levels of clothing waste is achieved through importers' adherence to internal and external processes and measures that prioritise quality items, collaboration with suppliers and key stakeholders such as government agencies, and high levels of compliance with government regulations. Importers are incentivised to comply with regulations such as the KEBS Standards EAS 356:2019, because the regulations describe the required content and quality of second-hand clothes imported into Kenya, safeguarding importers' interest to receive good quality second-hand clothes from suppliers. For suppliers, too, it is important to act long term to safeguard their customer base of importers of their products. Suppliers interviewed consider the KEBS Standards to provide effective guidelines for how to sort and produce the second-hand clothes products for the Kenyan market to benefit their customers. In addition, the PVoC (pre-verification of conformity) conducted by international inspection companies, such as SGS, Bureau Veritas, etc., accredited by KEBS, helps to minimise the risk that some suppliers would ship second-hand clothes of a quality which differs from what was agreed with the importer. Importers will often do their own research and investigation into any new potential supplier, which includes visits to the supplier, sample tests and negotiations, and shipments of trial containers with risk sharing agreements, before investing in the shipment of their goods.

Waste in imported SHC in the retail trade is no more than 2%: In line with findings from a previous study on the composition of solid waste generated in Nairobi County ⁴, indicative data from interviewed retailers suggests that approximately 4-12 pieces of clothing of SHC out of 350-600 pieces of clothing in one bale of clothing for children/ adults or babies respectively, translating to approximately 1-2%, end up as actual waste that is incinerated or dumped in the Dandora dumpsite. While there may be some damaged or unsellable clothing items, such items and the overall proportion of waste in imported SHC, as reported by retail traders, was relatively low at no more than 2%. Traders strive to ensure that every piece in a bale is sold to maximise their income, thus ensuring that as few pieces as possible are wasted.

Our data indicates that traders segregate some of these damaged items and sell them as material for recycling rather than passing them on to consumers. There is a demand from the cleaning industry for rags to be used as wipes and this presents an opportunity for traders. Recycling pieces of second-hand clothes as cleaning cloths mitigates the need for buying new cleaning cloths which are considered as environmentally harmful to produce as textile garments. It further extends the life of the second-hand clothes piece. Another source of demand for recycled material is the manufacturing industries that require lower quality textile materials such as floor mats, cushion stuffing and insulation material. ⁵

Recycling pieces of second-hand clothes as cleaning cloths mitigates the need for buying new cleaning cloths which are considered environmentally harmful to produce as textile garments.

⁴ Japan International Cooperation Agency (JICA). 2010. Preparatory Survey for Integrated Solid Waste Management In Nairobi City In The Republic Of Kenya. Final Report Volume 3 Supporting Report.

⁵ World Resources Institute. 2021. How a Partnership in Kenya Recycled 100,000 Kilograms of Fashion Waste. <https://www.wri.org/insights/closing-loop-textile-waste-recycling-kenya>

The global textile industry has overseen a doubling of clothing production between 2000 and 2015 driven by fast fashion, and is one of the most polluting industries in the world.

Textile waste accounts for approximately 0.39% of the total household waste generated in east Nairobi: The findings from the household survey, which focused on east Nairobi as a low-income area with assumed high second-hand clothing consumption, suggest that on average, a household generates approximately 3.5 kilograms (kgs) of textile waste per year. Highlighting the relative contribution of textile waste to the overall waste stream, survey results indicate that textile waste accounts for about 0.39% of the total household waste generated in a year. While the research was conducted in one area of Nairobi, it is fair to assume that there would be minimal variance across Nairobi as shown by a previous more in-depth study.⁶ This is further backed up by Taka Taka Solutions, a prominent waste collection service that confirmed textile waste makes up 1% of their total waste collection from households, commercial and industrial clients.⁷ This suggests that in over a decade, while the SHC market has seen increased demand, the level of textile waste has not increased.

A previous JICA⁸ study and our own household survey suggest that a negligible amount of textile waste from SHC (as a percentage of total waste) is deposited at the Dandora dumpsite: Out of all the waste generated in Nairobi that ends up at Dandora, the amount of textile waste is no higher than 2%. This textile waste is predominantly from end-of-life pieces of clothes or other textile waste and cannot be directly attributable to second-hand clothing newly imported to Kenya.

Reuse of clothes as second-hand clothing significantly reduces waste and pollution from production of new clothes: The global textile industry has overseen a doubling of clothing production between 2000 and 2015 driven by fast fashion,⁹ and is one of the most polluting industries in the world. It accounts for about 10% of global greenhouse gas emissions contributing to global warming, 35% of microplastics released into the environment, and produces 20% of global water waste.¹¹ The industry is damaging to the environment and people's health such as when dye houses dump untreated wastewater into local streams and rivers. The textile industry consumes enormous resources, including water and land. If the industry continues on its current path, by 2050 textiles production would use more than 25% of the total carbon budget.¹² The textile industry also produces a staggering amount of textile waste ending up in incinerators or landfills. In 2019, the total amount of discarded textiles from the textile industry in the EU was 12.16 million tonnes, of which 4.1 million tonnes of textile waste was deposited at landfills and 5.61 million tonnes was incinerated. Only 2.44 million tonnes of the discarded textiles were collected for reuse and recycling. Out of the collected clothes a small amount of 0.188 million tonnes (1.5%) were sold for reuse in the EU and 1.83 million tonnes (15%) were exported out of the EU¹³.

⁶ Japan International Cooperation Agency (JICA). 2010. Preparatory Survey for Integrated Solid Waste Management In Nairobi City In The Republic Of Kenya. Final Report Volume 3 Supporting Report

⁷ Personal communication, 18 September 2023.

⁸ Japan International Cooperation Agency (JICA). 2010. Preparatory Survey for Integrated Solid Waste Management In Nairobi City In The Republic Of Kenya. Final Report Volume 3 Supporting Report

⁹ Ellen MacArthur Foundation. 2017. A new textiles economy: Redesigning fashion's future.

<https://ellenmacarthurfoundation.org/a-new-textiles-economy>

¹⁰ European Commission, Directorate-General for Environment. 2023. Sustainable and circular textiles by 2030. Publications Office of the European Union. <https://data.europa.eu/doi/10.2779/96659>

¹¹ UNECE. 2018. Fashion and the SDGs: What role for the UN?

https://unece.org/DAM/RCM_Website/RFSD_2018_Side_event_sustainable_fashion.pdf

¹² Ellen MacArthur Foundation. 2017. A new textiles economy: Redesigning fashion's future.

<https://ellenmacarthurfoundation.org/a-new-textiles-economy>

¹³ Joint Research Centre (JRC). 2023. Workshop on textile waste management, organised by the JRC of the European Commission, 18 -19 April 2023

Reusing clothes rather than discarding them when no longer desired, significantly prolongs the life of clothing before it becomes end-of-life waste. It is estimated that the purchase of 100 pieces of second-hand clothing would save between 60 to 85 new garments.¹⁴ Thus, clothing reuse radically reduces waste, pollution and emissions from the textile industry.

Importers contribute to the circular economy through reuse and redistribution of pre-owned garments thus supporting sustainable consumption of clothing: Importers of SHC play a significant role in contributing to the circular economy by enabling the reuse and redistribution of pre-owned garments. This activity reduces the environmental impact associated with the production of new clothing items. By importing SHC, they indirectly reduce the environmental footprint associated with textile production. Furthermore, by offering affordable options, importers help reduce the demand for fast fashion and encourage a shift towards more sustainable consumption patterns. They also help to meet the welfare needs of the population as many households struggle to access relatively expensive new clothing while SHC offers attractive and affordable options.

Retailers contribute to the circular economy through prioritising repair, upcycling or downcycling of unsold second-hand clothing: From the few pieces in a bale of second-hand clothes that cannot be sold because of low quality or defects, retailers of SHC prioritise repairing and mending torn or damaged clothing, upcycling or using them to refashion other items, and selling worn-out clothing to other traders or businesses that specialise in different industries, including manufacturers or upholstery businesses. This approach contributes significantly to the circular economy by reducing waste, extending the lifespan of garments, and supporting local economies through collaborating with local tailors, seamstresses, and artisans for repair and alteration services. The relationship highlights the potential for synergies between those working in the *mitumba* trade and new textile manufacturing as there is scope for skilled tradespeople to be employed in both sectors.

Reusing clothes rather than discarding them when no longer desired significantly prolongs the life of clothing before it becomes end-of-life waste and radically reduces waste, pollution, and emissions from the textile industry.



¹⁴ Farrant, Olsen and Wangel. 2010. Environmental benefits from reusing clothes. The International Journal of Life Cycle Assessment, (15), 726–736. <https://link.springer.com/article/10.1007/s11367-010-0197-y>

Reusing clothes as second-hand clothing reduces solid waste generation and the amount of clothing waste that would have gone into a landfill or dumpsite, leading to significant reductions in environmental impact.

Chapter 1: Study Background

1.1 Background

Relative to global standards, a Kenyan household's average income is low, while families face constraints in affording necessities such as food, water, education and clothing. The average income earner in Kenya spends over 40% of monthly earnings to purchase food alone,¹⁵ with the remaining earnings spent on shelter, transportation, education, health and other needs. Most consumers find brand-new clothes expensive; they consider second-hand clothing to be an alternative in order to afford fashionable and "trendy" clothes, while they positively welcome the choice and quality of SHC. It is striking that SHC is becoming increasingly popular among environmentally conscious western consumers too.¹⁶

A previous household-level study in 2021 showed that most households buy new clothes, such as school or workplace uniforms, when required. Approximately 91.5% of households purchase second-hand clothes worth Ksh 1,000 and below, and 8.5% buy second-hand clothes worth Ksh 1,000 and above. On the other hand, 74.5% of all households bought new clothes priced below Ksh 1,000, and 25.5% bought new clothes priced above Ksh 1,000, confirming the price sensitivity of second-hand clothes.¹⁷

Kenya is one of the largest importers of SHC in sub-Saharan Africa. The SHC sector contributes significantly to the nation's employment and government revenues. In 2019, SHC represented 12.5% of the total imports of textiles in Kenya, valued at around Ksh 18 billion annually. Out of the 184,400 tonnes imported in 2019, the Government of Kenya received an average of Ksh 12 billion in import duty from second-hand clothes. Furthermore, the SHC and footwear industry employs about 10% of the extended labour force or approximately 2 million people directly in SHC but also throughout the supply chain including in many ancillary professions and activities: from transportation and warehouse management to HR and accountancy.¹⁸

Reusing clothes as second-hand clothing reduces solid waste generation and the amount of clothing waste that would have gone into a landfill or dumpsite. Research suggests that the purchase of 100 second-hand clothing pieces means that 60 to 85 fewer new garments have to be produced. The reduction in the environmental impact resulting from the collection of 100 garments for reuse ranges from a 14% decrease in global warming for cotton t-shirts to a 45% reduction of human toxicity for polyester/cotton trousers.¹⁹

¹⁵ World Economic Forum. 2016. Which countries spend the most on food? This map will show you.

<https://www.weforum.org/agenda/2016/12/this-map-shows-how-much-each-country-spends-on-food/>

¹⁶ Cochrane, Lauren. 2023. Cheap, cool and kind to nature: how secondhand became UK fashion's main attraction. The Guardian. <https://www.theguardian.com/fashion/2023/feb/12/secondhand-clothes-uk-fashion-cheap-cool-kind-to-nature>

¹⁷ Institute of Economic Affairs, MCAK. 2021. The state of the second-hand clothes and footwear trade in Kenya.

<https://ieakenya.or.ke/download/the-state-of-second-hand-clothes-and-footwear-trade-in-kenya/>

¹⁸ *ibid*

¹⁹ Farrant, L., Olsen, S. and Wangel, A. 2010. Environmental benefits from reusing clothes. The International Journal of Life Cycle Assessment, (15), 726–736. <https://link.springer.com/article/10.1007/s11367-010-0197-y>

We also know that carbon emitted from the transportation of bales of second-hand clothes through sea, air, or land is less than that emitted in industries producing new clothes.²⁰ According to the Kenyan government and major stakeholders like the Kenya Association of Manufacturers, embedding a circular economy will provide opportunities for the country to retain liquidity and improve the prospects for entrepreneurship and employment.²¹ The second-hand clothing industry effectively minimises resource consumption and waste through clothing reuse, where customers are primary partners and suppliers²², and it plays a significant role in transitioning to a circular economy and achieving carbon neutrality globally. Extending the lifespan of garments and reducing the demand for new clothing production minimises waste, conserves resources, and decreases carbon emissions associated with the fashion industry in the following way:

- **Waste Reduction:** Second-hand clothing helps divert textiles from landfill and dumpsites, reducing the amount of waste generated by the fashion industry.
- **Resource Conservation:** By reusing and repurposing garments, the second-hand clothing industry reduces the need for raw materials and manufacturing processes required for new clothing production. This leads to a significant conservation of resources such as water, energy, and land. While the revival of the domestic textile industry is a key objective for the East African Community (EAC), there is a potential trade-off between green transition policies and growth/job creation with the latter being given priority.
- **Carbon Emissions Reduction:** The production of new clothing involves carbon-intensive processes, including raw material extraction, textile manufacturing, transportation and retail. Second-hand clothing reduces the demand for new production, thereby lowering carbon emissions associated with these processes.
- **Consumer Awareness and Behaviour Change:** The second-hand clothing industry promotes a shift in consumer behaviour, encouraging individuals to buy pre-owned items instead of always opting for new garments. That shift fosters a mindset of environmentally responsible consumption and reduces the carbon footprint associated with fast fashion.

1.2 Problem statement

One externally commissioned report claims that “20–50% of second-hand clothing bales imported into Kenya have been found to be unusable, culturally or climatically unsuitable, size inappropriate, unsellable, soiled or damaged beyond repair and consequently discarded as waste”.²³ The report also argues that major traders were found to have sold tonnes of unsellable used clothing to *fagia* traders, who cut these into pieces which are then supplied as industrial rags and later used as industrial fuel, further contributing to air pollution and emissions.

The second-hand clothing industry effectively minimises resource consumption and waste through clothing reuse, playing a significant role in transitioning to a circular economy and achieving carbon neutrality globally.

²⁰ Shah, A. n.d. Investing in circular economy is a sure way for sustainable growth.

<https://kam.co.ke/investing-in-circular-economy-is-a-sure-way-for-sustainable-growth/>

²¹ Vehmas, K., Raudaskoski, A., Heikkilä, P., Harlin, A. and Mensonen, A. 2018. Consumer attitudes and communication in circular fashion. *Journal of Fashion, Marketing and Management*. 22(3). 189-208.

<https://doi.org/10.1108/JFMM-08-2017-0079>

²³ Changing Markets Foundation. 2023. Trashion: The stealth export of waste plastic clothes to Kenya.

<https://changingmarkets.org/wp-content/uploads/2023/02/Trashion-Report-Web-Final.pdf>

The *Mitumba* Consortium Association of Kenya (MCAK) is concerned about the accuracy of these claims given the reliability of the evidence so far provided. MCAK is representative of the 2 million individuals involved in the *mitumba* trade in Kenya. The aim of this report is to provide an evidence-based review of the SHC sector in Kenya and its environmental impact focused on waste generation.

1.3 Study objectives

- A. Estimate the proportion of imported second-hand clothes that is disposed of as waste.
- B. Estimate the proportion of textile waste in general household waste across Nairobi.
- C. Estimate the proportion of textile waste that is deposited at the Dandora dumpsite.
- D. Analyse the environmental impact of the second-hand clothes trade versus the manufacture of new clothes.
- E. Demonstrate the economic, social and environmental impacts of the SHC trade more broadly and how it underpins the circular economy approach that the EU, African and US markets are starting to pay more attention to.

Chapter 2: Methodology

2.1 Methodology and analytical framework

2.1.1 Research design

The research adopted a cross-sectional research design involving primary data collection and a desk review to obtain comprehensive answers to the study's objectives. Specifically, the study utilised more than one investigative approach covering content analysis of documents, reports and other relevant literature and data, while gathering in-depth insights from numerous interviews with those at the frontline of the industry. The use of different data sources and methods of data collection means the study is able to offer a rounded perspective on the SHC landscape.

2.1.2 Sampling

Two approaches consisted of gaining insights firstly from the *mitumba* industry and secondly from households as consumers of SHC.

An in-depth examination of the perspectives of SHC importers and traders in and around Nairobi involved gaining unique insights into the quality assessment processes and challenges faced within the SHC market. Importers and traders of SHC in Nairobi constitute a relatively small and interconnected community, making it challenging to identify suitable participants through purely random methods. Thus, a snowball sampling approach was adopted (until data saturation was achieved) to recruit a total of 120 participants who had experience and expertise in the SHC trade. The interconnected nature of the SHC trade facilitated the snowballing process, allowing for the identification of additional participants through referrals from initial contacts.

To add to the richness of the *mitumba* industry's insights, a survey was deployed to assess the perceptions of households utilising SHC in Nairobi. Households from selected low-income locations were targeted, mainly Tassia, Mathare, Kibera and Fedha, adopting a stratified random sampling technique to select a diverse group of individuals who purchase clothing second-hand. Different socio-economic backgrounds and age groups were included to obtain a comprehensive dataset. A total of 216 surveys were successfully completed across households with a history of using SHC.

2.1.3 Data collection

All data collection took place between June and July 2023. Semi-structured in-depth interviews were undertaken to investigate the perspectives and experiences of importers and traders, mainly in Nairobi. This approach allowed for a nuanced analysis of their insights and perceptions about the quality of second-hand clothing. A qualitative approach allowed us to capture detailed information while identifying underlying themes and patterns. The questions were designed to elicit information on various issues relating to the quality of SHC, such as sourcing practices, grading procedures, perceived variations in quality, and the challenges facing the industry. The interviews were conducted in-person at the participants' business locations or via telephone, depending on preferences and availability. Each interview lasted approximately 40 minutes. A total of 120 qualitative interviews with importers, wholesale suppliers and retailers of SHC, and relevant organisations²⁴, were successfully completed.

²⁴ Garbage collectors, Nairobi County Government, *Mitumba* Consortium Association of Kenya (MCAK)

Table 1: In-depth interview guides framework for stakeholders in the textile industry

Module	Objective	Target
In-depth Interview Guide I		
A	Establish the composition of second-hand clothing imported into Kenya, and related quality control processes	Importers and traders, <i>Mitumba</i> Consortium Association of Kenya (MCAK), and County Government of Nairobi
B	Understand if there is any waste content in second-hand clothing, and strategies for minimisation of potential clothing waste	
C	Understand the policies, regulations or guidelines that apply to management of second-hand clothing imported into Kenya	
D	Understand the economic, social and environmental impact of second-hand clothing imported into Kenya	
In-depth Interview Guide II		
A	Understand the policies, regulations or guidelines that apply to management of the textile industry in Kenya	Nairobi County Ministry of Environment, Climate Change and Forestry
B	Understand the dynamics of general waste and its management in Dandora dumpsite	
C	Understand the environmental implications of the second-hand clothing trade in Kenya from a circular economy perspective	
In-depth Interview Guide III		
A	Understand waste composition in the Dandora dumpsite and waste management practices	Garbage Collectors and Landfills

For the research on household consumption of SHC, a structured survey questionnaire was used. Face-to-face interviews were conducted with the selected households to ensure a high response rate and clarify any questions that respondents raised. The structured questionnaire was designed to gather data on various aspects of second-hand clothing quality. It included the following sections: demographic information to understand the SHC end-users' background; SHC consumption behaviour; quality perception; factors influencing purchasing decisions; and satisfaction with SHC purchases. A total of 216 interviews with individuals at household level were completed.

Table 2: Survey questionnaire framework for end-users of second-hand clothing

Module	Objective	Target
Survey Questionnaire		
A	Understand factors influencing the purchase decisions of end-users of second-hand clothing	End-users of second-hand clothing
B	Understand the composition of household waste and proportion of textile waste in general household waste	

2.1.4 Data analysis

The qualitative interviews with importers and traders were recorded and transcribed verbatim to ensure accuracy and confidentiality. The data analysis followed a thematic approach. Data coding was undertaken to identify recurring themes and patterns related to the quality of second-hand clothing. The researchers used qualitative data analysis software to manage the

data and facilitate the coding process.²⁵ The coding scheme was iteratively refined as new insights emerged from the data.

The survey data from end-users of SHC was cleaned, coded, and analysed using a statistical analysis software package. Descriptive statistics were used to summarise demographic characteristics and participants' responses. Triangulation of the qualitative data from the importers and traders of SHC and the survey data from households was then undertaken to ensure the credibility of the findings, comparing perspectives from different participants.

2.1.5 Ethical considerations

Prior to the interviews, informed consent was obtained from all participants, including assuring them of anonymity and confidentiality.²⁶ The informed consent described the purpose of the interview, how their data will be used, the steps taken to protect their identity, and any potential risks. The research adhered to ethical guidelines to protect the rights and privacy of the participants throughout the study.

²⁵ NVivo software was employed to facilitate systematic data analysis. The software enabled efficient organisation, coding, and retrieval of qualitative data to support thematic analysis of the qualitative data.

²⁶ Where names and phone numbers were collected such as in interviews with stakeholders (traders, government, county and businesses), data de-identification involving removing personal identifiers was carried out. Additionally, aggregated reporting was carried out thus preventing the identification of any individual's perspective. Where raw verbatim data was used such as direct quotes from stakeholders, care was made not to identify them by name or position.

The second-hand clothing (SHC) industry, also known as the *mitumba* trade, plays a significant role in Kenya's economy, providing employment opportunities

Chapter 3: Study Findings

Objective A: Estimate the proportion of imported second-hand clothing that is disposed of as waste

3A.1 Introduction

The second-hand clothing (SHC) industry, also known as the *mitumba* trade, plays a significant role in Kenya's economy, providing employment opportunities – including many relatively skilled jobs – as well as an affordable option for clothing to a large section of the population. However, an externally commissioned report has recently made claims about the quality of SHC imported into Kenya, alleging that a large quantity of waste is produced leading to adverse environmental, health, and economic consequences. This study aims to understand the quality of SHC that is imported and traded within Kenya, focused on estimating the proportion of waste in imported second-hand clothing bales.

This objective aligns with two key themes in the study:

- a. Quality assessment: We sought to assess the overall quality of SHC imported and traded in Nairobi, Kenya. This involved examining various aspects of the clothing, such as its condition, durability, appearance, and potential defects. We sought to gain an understanding of the overall quality of second-hand clothing contained in the bales of interviewed traders, and if the clothing meets acceptable standards or if it contains waste.
- b. Waste identification: Waste in the context of SHC refers to garments that are unsuitable for wear due to excessive damage, stains, tears, inappropriateness for the domestic market, or other defects. We sought to estimate the extent of waste, if any, in imported second-hand clothing.

Our findings indicate that waste in imported clothing is low at 1-2%. While the level of compliance with government regulations for the industry were not in the scope of this research, our interviews suggest that the economic and reputational cost of not complying means that exporters and importers are ensuring good quality SHC is entering the country. Where possible, waste items are sold at a low cost to other industries for use such as cleaning rags and upholstery stuffing. Overall, this is a thriving growth sector providing the population with high-demand products and jobs. The government can support further growth by reducing the high taxes and duties imposed on the sector, and stimulating investment by ending uncertainty about the sector's future, ruling out any further consideration of an import ban on SHC.

3A.2 Importers

3A.2.1 Source and composition of materials in second-hand clothing

In Kenya, the second-hand clothing industry thrives as a significant source of affordable garments for many Kenyans. Importers play a crucial role in this market by bringing in large quantities of second-hand clothing from various suppliers around the world.

Sources of Kenya's Used Clothing Imports (HS 6309)

Unit: \$million USD

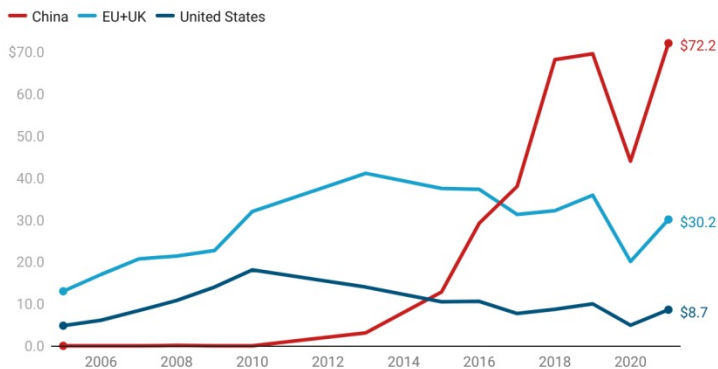


Chart: Created by Dr. Sheng Lu · Source: UNComtrade (2023) · Created with Datawrapper

According to the Observatory of Economic Complexity (OEC), the top exporters of SHC in 2021 were the United States (\$834M), China (\$709M), the United Kingdom (\$386M), Germany (\$359M), and South Korea (\$324M), while the top importers of SHC in the same period were Ghana (\$214M), Pakistan (\$180M), Ukraine (\$177M), United Arab Emirates (\$173M), and Kenya (\$169M).

Data from the Kenya National Bureau of Statistics 2022 Economic Survey shows that Kenya imported 183,830 tonnes of second-hand clothing in 2021. In the 5-year period from 2016 to 2021, second-hand clothing imports averaged 160,638 tonnes per year.²⁷ Second-hand clothing and footwear contribute about Ksh 12 billion in tax revenue in the form of import duty and the industry employs approximately 2 million people.²⁸

A considerable proportion of the SHC imported into the country comes from donations made by individuals, organisations, and charitable institutions worldwide. The donated items are then collected by relevant organisations and wholesalers, who sort and package them for export.

Our research found that importers establish partnerships with suppliers and exporters based in several countries to source SHC: within the European Union, Germany, the United Kingdom and the Netherlands; within North America, the United States and Canada; as well as China. The importers interviewed told us that the SHC are collected and prepared at various sorting centres in Europe, North America and China, where they had been supplied from a range of sources, including individual donations, thrift stores, and second-hand clothes collection companies. Many western consumers typically buy new clothes according to seasonal variations and rapidly changing fashion trends, regularly restocking their wardrobes. However, environmental awareness is rising, so donating good quality clothing is recognised as socially useful and important, whereas historically a primary motivation would have been to make space for new items.²⁹ At sorting centres, the collected items are processed based on quality, style, and category. After sorting, the clothing goes through a grading process to determine its market value. Finally, the selected items are packaged and exported to countries like Kenya, where there is constant demand for affordable second-hand clothing.

Second-hand clothing and footwear contribute about Ksh 12 billion in tax revenue in the form of import duty and the industry employs approximately 2 million people.

²⁷ Kenya National Bureau of Statistics. 2022. Economic Survey.

²⁸ Institute of Economic Affairs. 2021. The state of the second-hand clothes and footwear trade in Kenya. <https://ieakenya.or.ke/download/the-state-of-second-hand-clothes-and-footwear-trade-in-kenya/>

²⁹ Paço, A., Leal Filho, W., Ávila, L.V. and Dennis K. 2021. Fostering sustainable consumer behavior regarding clothing: Assessing trends on purchases, recycling and disposal. *Textile Research Journal*. 91(3-4):373-384. doi:10.1177/0040517520944524.

Our study found that the SHC imported into the country encompasses a diverse mix of natural fibres, synthetic fabrics, and blended materials. The study also observed that fashion trends and the production era of garments can also influence the materials used. Fast fashion items have a heavier concentration of cheaper synthetic fibres which are in turn more difficult to recycle without causing more environmental damage.

Interviewees noted that SHC imported into the country are a mix of garments crafted from natural fibres, synthetic or blended fabrics. Common natural fibres are cotton, linen, silk, and wool which importers favoured for their breathability, comfort, and durability. It was noted that cotton garments are most common and come in various forms, including lightweight cotton for summer attire and thicker cotton blends for colder weather. Many EAC countries no longer have capacity to manufacture cotton products domestically.

In relation to synthetic fabrics, interviewed SHC importers and traders have indicated that polyester is the most prevalent material and a popular choice in the clothing industry due to its durability, wrinkle-resistance, and ease of care. Blended fabrics such as cotton-polyester blends combining two or more materials were also cited by the interviewed SHC importers and traders as abundant in the SHC imported into the country.



“Normally these bales are composed of kids’ clothes, adult clothes, beddings and also shoes. The materials used to make the clothes are cotton, silk and polyester. So, it’s a mixture; but sometimes you encounter bales that contain maybe silk only, so it depends on the bales but the ones that are mixed have cotton, silk and polyester.”

Importer (Kisumu, Kenya)



“I sell everything though packaged differently. I have kids’ clothes, ladies, men. Most of them are cotton where it’s specified but if it’s not specified you will find mixed or cotton.”

Importer (Gikomba Market, Nairobi, Kenya)



“There’s a good mixture of natural and synthetic fibre. On the natural, you will get cotton, you’ll get silk, you’ll get wools; and on the synthetics, you’ll get polyester and acrylics.”

Importer (Gikomba Market, Nairobi, Kenya)

3A.2.2 The quality of second-hand clothing imported into Kenya

The second-hand clothing industry plays a crucial role in reducing waste by extending the lifecycle of garments. The protocols for importation of used textiles and used footwear into Kenya is set out in the Standards (Verification of Conformity to Standards and Other Applicable Regulations) Order, 2020 and further guided by Kenya Standard KS EAS 356:2019 Textiles – Requirements for Inspection and Acceptance of Used Textile Products and KS 1533:1999 Code of Practice for Inspection and Acceptance Criteria for Used Foot Wear.

According to Kenya Standards, all samples must be inspected for defects specified in Table 3. If found to comply with the required classification, the samples are then examined for visual defects, undergo physical tests and chemical analysis as shown in Table 4, and finally microbiological examination as outlined in Table 5. During the Covid-19 pandemic the Ministry of Health in Kenya devised further protocols relating to the handling of second-hand clothes which importers, traders and customers were required to follow. These included social distancing, wearing of face masks, regular washing of hands, provision of wash basins, strict hygienic conditions in shops and sales outlets, and the proper discarding of waste. After a temporary ban on the import of second-hand clothes in 2020 was lifted, all importers were required to register with KEBS and provide their physical address facilitating swift inspection by the health authorities. All containers of second-hand clothes imported into Kenya were required to undergo further fumigation at the facility of the importer.



The study noted that importers of second-hand clothing (SHC) typically follow a series of processes and measures to ensure that they import only quality items.

Table 3: Defects classification (KEBS STANDARD, KS EAS 356:2019 (ICS 58.080.10))

Classification	Visual defect	Other Physical Defect	Chemical Analysis
Serious	Holes, Tear, Ladder, Stain, Missing Component, No Care Label, No Size Designation, Abrasion Mark, Burns, Broken Yarn, Blot, Colour Smear, Crease Streak, Misregister, Spirality, Bursting, Open Seams, Fading, & Open Folds	Breaking Strength Tear Strength Stretch Recovery Shrinkage Abrasion Pilling Crease Recovery Mass/Unit Area Bursting Strength	Blend Composition, Colour Fastness to: Laundering, Washing, Dry-cleaning, Weathering, Light Rubbing, Bleaching, Perspiration, Hot Pressing, pH Value, & Chlorinated Water
Major	Neppiness, Stain, Terry off, Terry-on-Plain, Under-raising, Water Mark, Reppiness, Weft Crackiness, Wrong Yarn, Warp/Weft Bow, Skewness, Pilling, Shading, Finger Marks, Bad Odour, Mottled Appearance, Strippiness, & Dropped Stitch		
Minor	Gout, Slub, Warp/Weft Bar, Double Yarn, Thick Place, Misdraw, Reediness, Reed Mark, Coloured Flecks, Start/Stop Mark, Needle Line, Straying End, & Bruise		

Table 4: Permissible number of defectives (KEBS STANDARD, KS EAS 356:2019 (ICS 58.080.10))

Consignment (number of bales)	Sample Lot size (bales)	Number of samples (garments)	Permissible number of defectives				
			Defectives with Visually Observed Defects			Physically Tested	Chemical Analysis
			Serious	Major	Minor		
1 to 3	1	10	Nil	1	2	Nil	Nil
4 to 9	2	20	1	2	3	Nil	Nil
10 to 27	3	30	2	3	4	Nil	Nil
28 to 81	4	40	2	4	5	1	Nil
82 to 243	7	70	3	5	7	2	1
244 to 729	10	100	5	7	10	3	2
Above 730	15	150	7	8	15	4	3

Table 5: Microbiological limits (KEBS STANDARD, KS EAS 356:2019 (ICS 58.080.10))

SL. No.	Characteristic	Acceptable limit (count/gram)
(i)	Total plate count	300
(ii)	Candida albicans	Nil
(iii)	Streptococcus faecalis	50
(iv)	Trychophyton Sp	Nil
(v)	Microsporium Sp.	Nil

In the study, we examined the various aspects of importers' responsibilities, including quality control and the impact of their practices on the quality of SHC imported into the country. The study noted that importers of second-hand clothing (SHC) typically follow a series of processes and measures to ensure that they import only quality items. When asked about the strategies that they employ to minimise any potential waste from the SHC they import to the country, they cited adherence to processes and measures that prioritise quality items. Specifically, the importers' commitment to quality control and collaboration with charities and recycling programs where they source SHC significantly enhances the quality of SHC imported and traded in Kenya.

Our research indicates that through these processes and measures, mainly around inspection and grading, authentication, quality assurance and packaging and documentation, the SHC importers attempted to ensure that only viable and quality garments are made available for resale. These measures play a pivotal role in the sustainability of the second-hand clothing industry while contributing to the reduction of clothing waste in the country. A detailed discussion of the processes and measures put in place by importers follows next.

3A.2.3 Sourcing, selection, inspection and grading

According to the interview data, importers of SHC establish relationships with reliable suppliers and source second-hand clothing from trusted markets. The suppliers operate sorting centres where the collected unsorted clothes which include all sorts of categories, seasons, styles, fashion and wear and tear are sorted into the categories that are suitable for the local market where the importer will sell their products. A sorting centre typically employs between 200-500 sorters who inspect each piece of clothing and categorise them based on 400 criteria or more, thus ensuring that only what is suitable to a given market is included. Sorting centres are situated in many countries in the EU as well as North America and China. Many are also based in countries outside the EU where labour costs are lower. Through visiting the sorting centres where they source the SHC and having agents permanently based at the centres who monitor the sorting process, importers have been able to apply rigorous criteria to identify garments that meet desired quality standards.

The importers interviewed told us that the SHC suppliers perform a thorough inspection of each piece of clothing to assess its condition and determine its suitability for resale, as well as to identify and remove any potential waste content from the garments. This inspection process typically involves checking the overall fabric quality and identifying any damage, notably tears, stains or missing accessories such as buttons and zips; the item is then graded accordingly. The laborious and costly nature of the sorting and exporting process indicates it is not in suppliers' interests to export SHC that cannot be sold on due to low quality.

Importers of second-hand clothing establish relationships with reliable suppliers who operate sorting centers to categorize clothing based on rigorous criteria, ensuring only suitable garments for the local market are included.



“Okay, as he has said, all the clothes are consolidated in the sorting centres. Sorters employed by the sorting centre sort the clothes into different grades per what we should take. Then they’re baled, mostly in 45 kgs, in different categories. These categories include ladies, children, and men, and baled into 45 kgs, then arrangements for shipping start from there.”

Importer (Gikomba Market, Nairobi, Kenya)

“What we do is that, at the sorting centres, we’ve already prescribed to them what to pack to us; we also travel to the sorting centres to see and classify what is imported to Kenya in terms of quality, sizing, in terms of seasonality, so whatever they are bringing here is something that has already been pre-discussed, and that is exactly what they prove to do. So, whatever comes to us is basically what we need because we do not take very heavy winter items and have a preferred range for sizing. And, according to Kenyan regulations, some things cannot be imported, like underwear and infant towels.”

Importer (Gikomba Market, Nairobi, Kenya)

Importers have a rigorous quality assurance process for second-hand clothing sourced from certain locations.

3A.2.4 Quality assurance

Importers have a dedicated authentication process for SHC sourced from certain locations. For example, one of the importers indicated that they travel to the supplier and randomly select bales from the total inventory for evaluation prior to shipping the bales to Kenya. The selected bales are thoroughly inspected and evaluated to assess the quality of the garments. According to those interviewed, the inspection includes checking for factors such as fabric condition, presence of stains or damage, colour fading, and overall wear and tear. Thereafter, the importers provide feedback to the supplier based on the results of the sample evaluation and proceed with negotiations for the purchase if the quality is satisfactory. If after receiving the bales in Kenya there are concerns regarding the quality of the garments, they discuss potential solutions with the supplier, including compensation and finding alternative suppliers.



“For quality control purposes; I buy a few bales from those who have imported already like the original Chinese importer in Nairobi to test the quality. If it's good then now I order my own container through them. I can't just buy blindly because I have never been to China. The not-so-good qualities are usually packed in grade two; so, you have an option of buying the grade two bales. These I usually stock in small numbers for my customers from the remote towns who do not buy as often as my customers from town. And there are customers who specifically prefer grade two clothes depending on the market they sell to. In town you can sell items expensively but remotely not, the customers in those areas prefer cheaper items.”

Importer (Kisumu, Kenya)

3A.2.5 Packaging and documentation

Suppliers generally ensure proper packaging to protect the clothing during transportation once inspection and quality control processes are completed. For example, the interviewed importers told us that the suppliers use appropriate packaging materials, such as polybags, and employ labelling techniques to identify the type, size, and other relevant information of each item in line with the Kenya Bureau of Standards (KEBS) requirements. These requirements are enforced by PVoC (Pre-Export Verification of Conformity) inspectors at the suppliers' location and by KEBS upon arrival at the port in Kenya. Punitive measures are taken in cases of non-compliance. Interviewees believe that this inspection process is the reason there is generally high compliance by suppliers, although determining the precise level of compliance would require further research. Importers also prepare comprehensive documentation – including item descriptions – to maintain transparency and accuracy throughout the import process while meeting stipulated requirements and regulations.



“The items are usually graded: grade one and grade two. And also, we have the company quality control team in China. We normally have specifications for the packing and sorting of the items, so they normally ensure they go by our item specifications and what we need. In case there is any complaint, we raise it to them. The bales you are currently seeing at the shop are a combination of grade one and two.”

Importer (Kisumu, Kenya)

“In our company we have our quality control team that ensures that the specifications we give are what they bring but from the government side I don't think I have heard of any other than the bales weight limitations. There is a time they had banned the importation of 90 kgs bales. It could have been informed by cases of containers being overloaded though am not sure.

Importer (Kisumu, Kenya)

3A.2.6 Compliance with regulations and processes

As part of the process to ensure importation of quality SHC into the country, importers must comply with relevant local and international standards and regulations. Specifically, interviewed importers cited standards such as EAC Standard (Appendix (b) ii) KEBS Standard (Appendix (b) i), protocols (Appendix (b) iii) and custom codes (EAC Customs Union (Appendix (b) iv) related to second-hand clothes imports. These cover pre-verification, packaging of bales into standard weights, compliance with quality and grading standards, and certification as per legal and safety standards.

The regulations for importation of used textiles and used footwear into Kenya are set out in the Standards (Verification of Conformity to Standards and Other Applicable Regulations) Order, 2020 and further guided by Kenya Standard KS EAS 356:2019 Textiles – Requirements for Inspection and Acceptance of Used Textile Products and KS 1533:1999 Code of Practice for Inspection and Acceptance Criteria for Used Foot Wear. The general requirements are that all used textiles and used shoes intended for importation into Kenya should be subject to physical examination and certification under the PVoC (Pre-export Verification of Conformity to Standards) requirements. The regulations also require that each shipment will be accompanied by a Certificate of Conformity (CoC) issued by the PVoC service provider responsible for inspecting the shipment.

The interviewed importers of SHC highlight the influence of government policies and regulations on handling SHC. The Kenyan government's specific guidelines to ensure the proper sorting, processing, and distribution of imported SHC aim to maintain quality standards and prevent the dumping of low-quality clothing in the country. These regulations are intended to ensure high levels of compliance with the quality and grading standards in the second-hand clothes trade. For example, the PVoC inspectors investigate the quality and grading of the second-hand clothes at the suppliers, and will not issue CoC in any case of non-compliance. Without the CoC accompanying the shipping documents, the goods are not allowed to enter Kenya upon arrival unless the goods are inspected at the entry port at a high cost to the importer with the risk that the goods might be compounded.

Furthermore, the high import costs in duty and taxes, which are considerably above average import duties in Kenya, help to ensure quality compliance as importers and traders would otherwise lose money. Membership in associations such as Gikomba Market, Business Community and the *Mitumba* Consortium Association of Kenya has enabled importers to collaborate with relevant government agencies and departments at the national and local level in enforcing the laid regulations on SHC, thus contributing to ensuring only minimal clothing waste associated with second-hand imports.

While such regulations have driven up standards, there is more that can be done to ensure that all traders, suppliers, importers and retailers conform to the stipulated requirements. The best *mitumba* stakeholders want the industry to be based on quality, and welcome government intervention and regulation to achieve that.

Government policies and regulations, such as the Pre-export Verification of Conformity to Standards (PVoC) requirements, play a crucial role in ensuring the importation of quality second-hand clothing (SHC) into Kenya.

Importers contribute to the extension of the lifecycle of clothing, reducing the need for new production while lowering the environmental impact associated with the manufacturing and disposal of textile items.



“Another policy is about business licensing and trade practices; you have to get a license, adhere to safety and health standards, and adhere to labour laws and regulations; those are the common business regulations that we observe when trading second-hand clothes. Like the ban on importation of innerwear and infant towels, it is a government policy from the Ministry of Health, and of course, that one will guide us when importing bales. Then the other one is the ability to trade the items. For example, if you go to the sorting centres, you’ll find roller skates and ice skates. So, in Kenya, you cannot import ice skates because you cannot trade them; the roller skates, you can import them because some can sell them. So, there are government regulations, those that we follow and then there are complimentary by-laws and business objectives.”

Importer (Gikomba Market, Nairobi, Kenya)

“These clothes are usually sorted from their countries of origin and inspected by SGS, global testing, inspection, and Certification Company before the container is packed. Upon arrival at the Kenyan port, SGS cross-checks the container again to ensure the initial quality standards are upheld. Inspection officers sometimes open a few bales in random containers to ascertain quality. I do think this process contributes to elimination of waste.”

Importer (Gikomba Market, Market)

From an environmental perspective, second-hand clothing importers play a key role in reducing textile waste and promoting sustainability. The regulations are needed to encourage a ‘race to the top’, ensuring that as many importers as possible comply. Adhering to the prescribed processes and measures ensures that only items in good condition and with market value are imported. In doing so, importers contribute to the extension of the lifecycle of clothing, reducing the need for new production while lowering the environmental impact associated with the manufacturing and disposal of textile items.

Interviews with importers have revealed a sequential process by which they efficiently manage the importation, distribution, pricing, and selling of SHC. Importers have suggested that through this process they have been able to effectively eliminate potential waste and unsold inventory, finding suitable buyers for clothing and ensuring that it gets reused or recycled. This approach aligns with sustainable practices while reducing the environmental impact associated with textile waste through adopting a more sustainable and responsible approach to managing SHC. Importers ensure that the clothes they are receiving are of good quality, otherwise they would lose considerable amounts of income by not being able to sell what they have imported. They travel to visit their suppliers regularly and give them updates on shifting market conditions and changes and improvements that needed in the sorting of the clothes. They negotiate carefully with suppliers, and resolve any previous quality issues to ensure the viable continuation of the business.

Second-Hand Clothing Import Process

This section outlines the process by which SHC are imported

Step 1: Identifying Sources of Second-Hand Clothing:

- a. Market research: The importer conducts extensive market research to identify potential sources of second-hand clothing. The importer will look at various options including textile sorting centres, clothing collection drives, auctions and thrift stores to acquire second-hand clothing.
- b. Networking: The importer builds relationships with wholesalers and sorting centres in different countries to establish a trusted network for sourcing a steady supply of second-hand clothing.
- c. Supplier verification: The importer carefully verifies the credibility and quality of potential suppliers to ensure the authenticity and condition of the second-hand clothing that is sourced.

Step 2: Importing Second-Hand Clothing:

- a. Negotiation and purchase: The importer negotiates and finalises contracts or purchase agreements with the suppliers covering prices, quantities, and shipping terms.
- b. Shipping and customs: The importer arranges for the transportation and handling of customs clearance, documentation, and any necessary import procedures for the purchased clothing from the source country to their own warehouse. This is the central hub where all the clothing is stored, organised, and prepared for selling to wholesalers and retailers as well as distribution to the importer's retail shops where relevant.
- c. Sorting and quality control: Upon arrival at the warehouse, the importer categorises the bales based on type, demographic target, season and style.

Step 3: Wholesale and Retail Distribution:

- a. Wholesale and retail distribution: The importer establishes relationships with wholesalers and retailers in the target market and promotes its second-hand clothing inventory to potential buyers through various marketing channels, including direct sales, trade shows, and online platforms. Wholesalers and retailers place orders for specific quantities and types of clothing based on perceived market demand and customer preferences. The importer also welcomes walk-in wholesalers and retailers who visit their physical location(s) or showroom(s). They provide them with access to the inventory, allowing retailers to browse and select the items they wish to purchase in bulk or for their retail store.
- b. Order fulfilment: For both wholesale and retail orders, the importer prepares the selected items for shipping or pickup. They prepare bales securely and ensure proper labelling to avoid any confusion during delivery. The importer may collaborate with shipping and logistics companies to handle the transportation and delivery of the orders.
- c. Delivery and distribution: The prepared orders are shipped to wholesalers and retailers based on the preferred delivery method. Some importers track the shipments and provide necessary tracking information to the recipients. For walk-in customers, they may arrange for immediate pickup or coordinate delivery at their convenience.
- d. Continuous stock replenishment: As the importer receives new inventory and processes more second-hand clothing, they continuously replenish their stock to meet the demands of wholesalers, retailers, and walk-in customers. This ensures a steady supply of second-hand clothing for their clients.

The key is utilising local distribution networks, understanding SHC market segments and consumer preferences, as well as the influence of established partnerships and existing governance structures supporting the SHC trade in Kenya.

Step 4: Distributing to the Importer's Retail Shops

- a. Sorting and categorisation:** At the importer's warehouse, the bales are sorted according to different categories, such as gender, type (e.g., shirts, pants, dresses), sizes, season and quality. This process ensures that the clothing can be easily located and retrieved when needed.
- b. Inventory management:** The importer operates its own retail shops where it sells second-hand clothing directly to customers. Some importers manage inventory levels across their retail shops, analysing sales data and customer demand to ensure appropriate stock levels are maintained. The importer distributes the selected clothing items from its inventory to its retail shops, ensuring a diverse and appealing collection for customers to choose from.
- c. Pricing and tagging:** Based on sales trends and customer preferences, the importer allocates suitable quantities and varieties of second-hand clothing to each retail shop, considering factors such as location, target market, and seasonal demands. This business model involves coordinating logistics, such as transportation and inventory management, to ensure that each shop receives an appropriate selection of clothing based on its size, target market, and demand.
- d. Display and selling:** In the importer's retail shops clothing is displayed in an organised and appealing manner to attract customers. The shop staff arrange the clothing on racks, shelves, or mannequins, making it easy for customers to browse and select items for purchase. The clothing is sold at market prices and transactions are processed at cash registers.
- e. Monitoring and inventory management:** Throughout the selling process, the importer keeps track of inventory levels at each retail shop. Regular monitoring is conducted to identify popular items, slow-moving stock, or any changes in customer preferences. This information helps in adjusting the selection and quantity of clothing for future orders.

The importers of SHC indicated that the process just described helps to ensure consistent importation of quality SHC, thus contributing to minimisation of clothing waste. The key is utilising local distribution networks, understanding SHC market segments and consumer preferences, as well as the influence of established partnerships and existing governance structures supporting the SHC trade in Kenya. This approach is widespread across the *mitumba* industry given that the success of the business lies in cooperation between the supplier and the importer, ensuring that the quality of the clothes are up to the standards and the requirements of the market.

- **Local distribution networks:** To ensure a healthy market, the interviewed importers collaborate closely with retailers, wholesalers, and other platforms, helping to ensure efficient distribution channels to reach consumers. They generally have well-organised distribution networks that as far as possible match their supply of second-hand clothing with the local demand.
- **Market segmentation and consumer preferences:** Importers understand their market segments and consumer preferences, while they target specific consumer groups and align their product selection with local preferences. This market-driven approach has played a crucial role in

minimising clothing waste, as importers are able to match supply with demand, thus avoiding accumulating unsold inventory. A key issue here is to match supply to seasonal changes, for example, having enough winter clothing to meet consumer demand when temperatures fall. The interviewed importers also highlighted strategies such as flexible price points for clothing depending on seasons to manage and curate inventory.

- **Governance and partnerships:** Interviewed importers of SHC highlighted the influence of government policies and regulations on handling SHC. As we have seen, the Kenyan government has specific guidelines to ensure the proper sorting, processing, and distribution of imported SHC. These regulations aim to maintain quality standards and prevent the dumping of low-quality clothing in the country. Membership in associations such as Gikomba Market, Business Community and *Mitumba* Consortium Association of Kenya has enabled importers to collaborate with relevant government agencies and departments at the national and local level in enforcing the laid regulations on SHC, contributing to the reduction of clothing waste associated with second-hand imports. Government intervention has helped to drive up standards. There is generally a high level of compliance since it is in the suppliers' and importers' own interests to maintain a high standard of quality in imported second-hand clothing due to the high costs of importation.

As such, adherence to processes and measures by importers of second-hand clothing is essential for economic implications, consumer satisfaction, compliance with regulations, reputation building, and environmental impact. By adopting such practices, importers can foster a thriving market, meet consumer expectations, comply with legal requirements, establish a positive reputation, and contribute to wider environmental sustainability efforts.

3A.2.7 Content of the second-hand clothing imported into Kenya

As demonstrated, importers typically operate on a large scale and have efficient systems in place for handling and redistributing SHC. Interviewed importers have invested in processes and infrastructure to help ensure that the garments they import into the country are in good condition and largely meet quality standards. This approach helps to minimise the amount of unsuitable clothing that would otherwise end up in landfill. Importers act as intermediaries in the process, facilitating the transfer of used clothing from one region to another.

3A.3 Retailers

3A.3.1 Role of retail traders in the second-hand clothing market

Retail traders play a crucial role in the second-hand clothing market as intermediaries between wholesale suppliers and buyers including end-users.³⁰ Wholesale suppliers distribute SHC in large quantities to retailers and individuals, thus enabling economies of scale. Furthermore, study data from the interviewed retail traders shows that they acquire SHC from wholesale suppliers in bulk and then sort, categorise, and display the items in their retail spaces, and finally reselling them through open spaces in markets, physical stores or online platforms. These traders can range from market stall operators, road-side sellers, small boutique shops to larger vintage stores or online platforms specialising in SHC.

Adherence to processes and measures by importers of second-hand clothing is essential for economic implications, consumer satisfaction, compliance with regulations, reputation building, and environmental impact.

³⁰ Institute of Economic Affairs, MCAK. 2021. The State of Second-Hand Clothes and Footwear Trade in Kenya. <https://ieakenya.or.ke/download/the-state-of-second-hand-clothes-and-footwear-trade-in-kenya/>

The emphasis on quality and durability in SHC demonstrates demand for well-made, long-lasting garments that ensure better value for money and encourage consumers to be mindful of their choices while promoting sustainable consumption

In terms of the impact on clothing waste generation from second-hand clothing, retailers as intermediaries in the SHC trade contribute to the extension of the lifespan of used garments, thus reducing the amount of clothing that would otherwise end up in a landfill.

3A.3.2 Quality of the second-hand clothing sold by retailers

Indicative data from interviewed retailers demonstrates that approximately 4-12 SHC pieces out of 350 SHC pieces (approximately one bale for children or adults) or 600 pieces of SHC (approximately one bale for babies' clothing), translating to approximately 1-2% out of the total number of pieces in a bale, end up as actual waste that must be disposed of. As the sorting done at the suppliers' sorting centres is complex work requiring manual labour to distinguish the different grades and categories of clothes, it is inevitable that some mistakes will occur due to human error. It is to be expected that a few pieces will still end up as unsuitable for the intended market. Some retailers indicated that they burn these pieces of clothing waste as a means of disposal. Other retailers reported discarding the waste in garbage collection points in the market which eventually ends up buried in landfill.



“Unsold clothes are clothes that I cannot sell completely. These are clothes that cannot be repaired or recycled – those clothes that have defects or worn out, damaged, stained, faded, shapeless. I encounter unsellable clothes once in a while but not as frequent. For example, I may end up with 3-4 jackets out of 3 bales every end month (less than 1%). I throw them away in the dustbin, pit latrine or burn them.

SHC Retailer, Kitale, Kenya

Indicative household survey data shows that the factors influencing the purchase decisions of SHC end-users mainly evolve around cost-savings (75% of respondents), and quality and durability of the garments (48% of respondents). The consideration of cost savings as a crucial factor when purchasing SHC underscores the point that SHC is not waste. Instead, it highlights the sustainability and value of SHC use by promoting affordability, extending product lifespans, and reducing waste. The emphasis on quality and durability in SHC demonstrates demand for well-made, long-lasting garments that ensure better value for money and encourage consumers to be mindful of their choices while promoting sustainable consumption. Importers confirmed that SHC is more affordable when compared to new clothing, making it accessible to consumers with lower purchasing power.



“...Secondly, our local manufacturing capacity cannot meet the population's demand, which is where second-hand clothes come in: they are quality, fashionable, and affordable to the majority. For instance, here you can find an original Levi's trousers at 1,000 Ksh, while the same item goes for 14,000 Ksh in modern stores. Not many people can afford that.”

Importer, Kisumu, Kenya

“It is just normal fashion preferences. Since we have a very big customer profile, the preferences are just as diverse as the clothes themselves because we do not have a specific age bracket. Some things might be for older adults, some things may be for the outgoing kids, so what may contribute is the normal fashion preference.”

Importer, Gikomba Market, Nairobi, Kenya

3A.3.3 Upcycling individual low quality second-hand clothes pieces

Where clothing waste was recorded, we found that affected retailers prioritised repairing and mending the torn or damaged clothing, in so doing contributing to reducing waste, extending the lifespan of garments, and supporting local economies through collaborating with local tailors, seamstresses, and artisans for repair and alteration services. By addressing minor damage such as rips, loose buttons, broken zippers, or frayed hems, the retailers restore the functionality and aesthetics of the garments, making them usable once again. This approach extends the lifespan of each item, reduces the number of garments that end up in landfill and limiting the need for new clothing production, while encouraging a more sustainable pattern of consumption.



“Yes, there are cost implications associated with effectively managing and recycling waste from unsold second-hand clothes. We do repairs, resizing and buying the accessories needed for the repair and paying the tailors which end up eating into my profit margin. Despite all the adjustments, I am forced to sell them at the same price.”

SHC Retailer, Kisii Market, Kenya

“There is no waste generated from the second-hand clothes. Such clothes that cannot sell I normally offload as “fagia” (rags) very cheaply say at Ksh 20-30.”

SHC Retailer, Kisumu, Kenya

Of the 2% volume of worn-out or damaged SHC clothing that cannot be repaired or restored, some retailers we interviewed indicated that they find other ways to upcycle, refashion or reuse the items, not least using them as patches to repair torn clothing. This process breathes new life into worn-out clothing, providing unique and sustainable alternatives for consumers. Other retailers reported that they sell the worn-out clothing to other traders or businesses in different industries. For example, some retailers indicated that they sell the clothing to cleaning companies or industrial manufacturers for cleaning machinery, wiping surfaces, or other industrial uses. Retailers also sell the worn-out clothing to manufacturers or upholstery businesses for stuffing sofa-sets, pillows, or other upholstery items. The traders will make efforts to find solutions for each garment as far as possible. The reality of doing business ensures that traders are compelled to find innovative solutions to make money out of as many textile items as possible to sustain themselves economically.



“There’s no waste because we have many tailors in this market, and what seems to be a potential reject can be repaired to make it usable. If completely worn out, the cloth can be used for patching purposes. The small cloth cuttings generated during the tailoring process are usually stashed in sacks and then sold to the nearby carpenters, who use them for making sofa sets. This implies that the market typically has no waste as one can rarely come across disposed of clothes; the only waste is mostly paper.”

SHC Retailer, Gikomba Market, Nairobi, Kenya

Where clothing waste was recorded, we found that affected retailers prioritised repairing and mending the torn or damaged clothing

The efforts of the retailers can be seen as helping to create a more sustainable and environmentally friendly SHC industry, encouraging consumers to make more thoughtful choices and reducing the environmental impact of clothing production. By repurposing and selling worn-out clothing, retailers are diverting items from landfill and giving them a new lease of life. This practice reduces waste, conserves resources, and minimises the need for new materials. It contributes directly to the circular economy by promoting reuse while reducing the environmental impact associated with the production of new clothing. Most of these efforts are based on the initiatives of individual retailers who seek to maximise their income. The local textile recycling sector is in its infancy and needs significant development. However, with the right investment there are great opportunities to further extend the circular economy to include recycling, in the process creating many additional job opportunities.



Objective B: Estimate the proportion of textile waste in general household waste across Nairobi

3B.1 Introduction

Our research aimed to assess the proportion of textile waste present in general household waste in Nairobi and in waste disposed at landfill. The purpose is to gain insight into consumers' general textile waste disposal practices. The research focused on understanding the scale of the issue, the potential environmental impacts, and the need for effective waste management strategies to address the issue.

By achieving this objective, the study sought to accomplish the following goals:

- a. Estimate the textile waste in general household waste:** The primary goal was to assess the proportion of textile waste in the total general household waste stream. The study aimed to quantify the weight or volume of textile waste (including clothing, fabric scraps, and related materials) relative to the total household waste generated by residents.
- b. Estimate the contribution of textile waste to the Dandora dumpsite:** Landfills are the ultimate destination of a significant proportion of waste in general, and understanding the percentage of textile waste in this category will provide valuable insights into the textile industry's contribution to landfill pollution. A review of available literature on solid waste generated in Nairobi was carried out to crosscheck and validate the findings of household surveys.
- c. Identify factors influencing textile waste generation and disposal:** To further investigate textile waste in household waste, the study explored factors influencing textile waste generation and disposal patterns within households and landfill sites. Understanding these factors may help design targeted interventions to reduce textile waste generation and improve waste management practices.

Overall, it has been established through primary and secondary research that textile waste as a percentage of total waste is low in Nairobi. There is evidently a high level of consumption of SHC in Nairobi among a broad section of the population, especially those on the lowest incomes, for whom new clothes are often too expensive. Also, while textile waste as a percentage of total waste is already low, SHC would make up only a proportion of the total textile waste. For waste that does exist both nationally and locally, improved waste and recycling programs could result in better outcomes for people and the environment.

3B.2 Proportion of textile waste in household waste

In 2010, a study by Japan International Cooperation Agency (JICA)³¹ carried out a computation of the waste composition of domestic waste generated in Nairobi City which determined textile waste to amount to 1.4% of the total waste generated.

³¹ Japan International Cooperation Agency (JICA). 2010. Preparatory Survey for Integrated Solid Waste Management In Nairobi City In The Republic Of Kenya. Final Report Volume 3 Supporting Report

In 2023, Taka Taka Solutions, a prominent waste collection services in Nairobi confirmed that the total waste collected from households, commercial and industrial clients, textile waste makes up around 1%.

Table 6 Domestic Waste Composition in Nairobi

Domestic Waste Composition			Nairobi-2009*1
Organic Waste			
1	Food Waste		63.8%
2	Paper	Recyclable Paper	4.0%
3		Recyclable Cardboard	0.5%
4		Mixed Paper	1.8%
5		Diapers	7.5%
	Paper - Total		13.8%
6	Plastics	Plastic Sheet	3.3%
7		Recyclable Plastics	3.0%
8		PET Bottles	0.6%
9		Other Plastics	0.3%
	Plastic - Total		0.3%
10	Rubber and Leather		0.6%
11	Textiles		1.4%
12	Yard Waste		0.9%
13	Lumber and Logs		0.8%
14	Other Organic Wastes		0.7%
	Organic Waste-Total		92.5%
Inorganic Waste			
15	Glass	Returnable Bottles	0.4%
16		Other Live Bottles	0.9%
17		Glass bins	0.0%
18		Broken Glass	0.2%
	Glass-Total		1.5%
19	Metals	Tin Cans (steel cans)	0.2%
20		Aluminium cans	0.1%
21		Copper	0.0%
22		Other Metals	0.6%
	Metals - Total		0.9%
23	Dirt, Ash, Stone, Sand		4.7%
24	Unclassified Residual Waste		0.2%
25	Batteries - Dry Cells		0.0%
26	Other Domestic Hazardous Wastes		0.1%
	Inorganic Waste Total		7.5%
	Total		100.0%

Source: *1 - Waste Amount and Composition Survey by JICA Survey Team, 2009

To put the textile waste generation into context, the survey also estimated the total household waste generated per year across low-income areas. This includes all types of waste produced by households such as organic waste, paper, plastic, glass, and other materials. In 2023, Taka Taka Solutions, a prominent waste collection service in Nairobi confirmed that of the total waste collected from households, commercial and industrial clients, textile waste makes up around 1%.³² This finding indicates that in over a decade, while the SHC market has seen increased demand, the level of textile waste has not increased.

³² Personal communication, 18 September 2023.

Our survey findings (Box 1) suggest that that the average household in the survey locations in Nairobi generated approximately 3.5 kgs of textile waste annually, accounting for only 0.39% of the total household waste in the same period. As such, only a small proportion of household waste is actually textile waste. That textile waste mainly constitutes end-of-life items of clothing which arguably have little bearing on the import of second-hand clothes, given all clothes inevitably wear out and become textile waste, whether initially purchased as new clothes or second-hand clothing. Although the proportion of textile waste in household waste is small, there is still scope to divert end-of-life clothing into recycling processes if the right infrastructure is in place.

Data from households surveyed in our research (Figure 1) showed that virtually all respondents (96%) purchased SHC, indicating the very high demand for SHC in Nairobi.

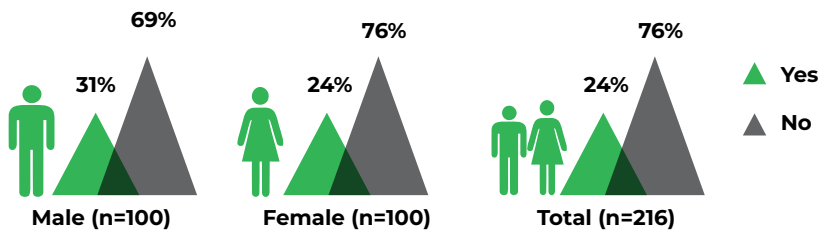


Figure 1: Proportion of respondents reporting awareness of textile recycling programs (Source: Household Interviews)

Additionally, approximately one in every two surveyed individuals who acquire SHC cited durability – which plays a crucial role in determining the longevity and usability of the SHC – as a vital influencing factor when purchasing SHC. That means a relatively low number of textiles ending up in general household waste. A key factor influencing textile waste generation and disposal is awareness and availability of textile recycling programs. Survey data showed that only 27% of respondents interviewed at household level were aware of the importance of textile recycling programs with facilities where consumers can dispose of end-of-life clothing and textiles. This finding has implications both for the environment and for the progress of sustainable waste management efforts.

It is clear that people may not be participating in textile recycling programs. Moreover, there may be insufficient textile recycling facilities available. While some individuals were aware of the importance of recycling, the lack of nearby or easily accessible recycling centres where consumers can dispose of end-of-life clothing discouraged them from participating in recycling.

Our survey findings underscore the need for increased education, outreach, and investment in recycling facilities. Experience in other countries and sectors demonstrates that measures to change consumer behaviour such as making it easier to put clothes into recycling helps to ‘nudge’ consumers towards positive ‘pro-social’ patterns of behaviour. Raising awareness about the benefits of textile recycling and making recycling options more accessible will be crucial in improving waste management practices, reducing environmental impacts, and promoting a circular economy in the textile industry. The end goal is for the consumer to become a partner or co-producer.

It is clear that people may not be participating in textile recycling programs.

The calculations in Box 1 below, based on the indicative household survey data collected, are similar to the previous study carried out by JICA in 2010 which found the proportion of textile waste (of all household waste) generated in Nairobi in 2009 was 1.4%. The variation in findings for textile waste between JICA's study and this study may well reflect differences in methodology.

BOX 1: COMPUTATION OF THE PROPORTION OF TEXTILE WASTE IN HOUSEHOLD WASTE

To calculate the proportion of textile waste disposed from a household in a year:

Step 1: Calculate the total amount of general household waste disposed of in a year.

Step 2: Calculate the total weight of general household waste disposed of in a year.

Step 3: Calculate the total weight of textile waste disposed of in a year.

Step 4: Compute the proportion of textile waste relative to the total waste.

Step 1: Calculate the total amount of general household waste disposed of in a year.

- Given that the household disposes of 6.6 bin bags per month, and each bag holds up to 50 litres of waste:
- Total bin bags disposed of in a year = 6.6 bags/month * 12 months = 79.2 bags/year
- Step 2: Calculate the total weight of general household waste disposed of in a year.
- Total weight of general household waste = Total bin bags * Volume per bag * Density given the density of general household waste is 0.229 kg/l = 79.2 bags/year * 50 litres/bag * 0.229 kg/l \approx 906.84 kg/year

Step 3: Calculate the total weight of textile waste disposed of in a year.

- Given that the household disposes of approximately 10 pieces of textile per year, and each piece weighs 352 grams:
- Total weight of textile waste = Number of textile pieces * Weight per piece = 10 pieces/year * 352 grams/piece = 3,520 grams/year
- Total weight of textile waste = 3,520 grams/year * 1 kg / 1000 grams = 3.52 kg/year

Step 4: Compute the proportion of textile waste relative to the total waste.

- Proportion of textile waste = (Total weight of textile waste) / (Total weight of general household waste) = 3.52 kg / 906.84 kg \approx 0.00388
- Proportion of textile waste as a percentage \approx 0.00388 * 100 \approx 0.388%
- Therefore, the proportion of textile waste disposed of from the household in a year is approximately 0.388%.

Objective C: Estimate the proportion of textile waste that is deposited at the Dandora dumpsite

3C.1 Proportion of textile waste deposited at the Dandora dumpsite

A 2010 study in Nairobi quantified household waste generation at source in different zones of Nairobi, and yielded a mean waste generation rate of 0.65 kgs per capita per day.³³ According to the Kenya National Bureau of Standards (KNBS) population projections, the population of Nairobi County in 2023 is estimated at 4,750,056 persons³⁴. Using the above mean per capita waste generation rate, it is estimated that Nairobi generates approximately 3,088 tonnes of domestic waste per day.

One study from 2009 suggests that domestic waste accounts for 68% of the total waste generated in Nairobi with the remaining 32% being non-domestic waste.³⁵ Therefore, the non-domestic waste equivalent to 32% can be estimated at 1,452 tonnes per day with the total waste generated in Nairobi County currently amounting to 4,540 tonnes per day. In 2010, a survey for integrated solid waste management in Nairobi City by JICA³⁶ found that total textile waste at the Dandora dumpsite was 1.89% of total waste. With a current waste average of 4,540 tonnes per day, textile waste would equate to 85.81 tonnes per day.

3C.2 Upcycling of waste not deposited at the Dandora dumpsite

JICA's 2010 study found that high income areas generated the most waste per capita at 0.621 kg per day followed by middle income and low-income areas that generated 0.474 and 0.360 kg per day per capita respectively.

Waste diverted from the Dandora dumpsite includes waste reduction at source, recovery of recyclable material at junkshops, materials recovered from composting of biodegradable waste by different entities, amounts recovered by the Material Recovery Facilities (MRFs), and waste recovered at the waste disposal site. One study found that in high-income neighbourhoods in Nairobi, collection systems are adequate with waste collected several times a week and households storing their waste in bins provided by the collection company. Yet in low income areas, there are little to no collection services.³⁷

Solid waste recycling and reuse activity in the low-income areas is made up of plastic, glass bottles, paper, cardboard and cans that are reused and then disposed of when no longer of use. In high-income areas, domestic workers sell these materials to middlemen who then sell on to small scale recyclers who use them to produce other items. Scavenging in solid waste is carried out in both areas prior to collection and at the disposal site.

JICA's 2010 study found that high income areas generated the most waste per capita at 0.621 kg per day followed by middle income and low-income areas that generated 0.474 and 0.360 kg per day per capita respectively.

³³ Kasozi, A. and Blottnitz, H. 2010. Solid Waste Management in Nairobi: A Situation Analysis Technical Document accompanying the Integrated Solid Waste Management Plan.

https://www.ecopost.co.ke/assets/pdf/nairobi_solid_waste.pdf

³⁴ Kenya National Bureau of Statistics. 2022. Summary Report on Kenya's Population Projections.

<https://www.knbs.or.ke/download/summary-report-on-kenyas-population-projections-2019-kphc/#>

³⁵ Ngau and Kahiu. 2009. ISWM Secondary Data Report on Solid Waste Inventory in Nairobi: Report of the National Technical Taskforce (NTT) on Preparation of An Integrated Solid Waste Management Plan for Nairobi.

³⁶ Japan International Cooperation Agency (JICA). 2010. Preparatory Survey for Integrated Solid Waste Management In Nairobi City In The Republic Of Kenya. Final Report Volume 3 Supporting Report.

³⁷ Waweru, S. and Kanda, E. 2012. Municipal Solid Waste Management in Kenya: A Comparison of Middle Income and Slum Areas.

While textile waste is only a small component of household waste, it remains an area of concern for waste management and sustainability efforts

Burning is common in low-income areas including throwing items into open pits and burying them, while in high-income areas, burning is minimal, but disposal is mostly dependent on the waste collection company that takes the waste to the Dandora dumpsite.

3C.3 Conclusion

Our research indicates that only a very small proportion of waste in households and in the waste deposited at the Dandora dumpsite is textile waste. The 2010 JICA study established the proportion of textile waste in household waste in Nairobi to be 1.4%, while our survey of low-income households found a similarly low textile waste figure which we estimate to be 0.39%. This textile waste primarily consists of end-of-life pieces of clothing and textile waste from the local textile industry. The research suggests that the importation of second-hand clothing makes up a very small amount of the total waste generated in Nairobi.

While textile waste is only a small component of household waste, it remains an area of concern for waste management and sustainability efforts. Like most African countries, Kenya is experiencing a continued population explosion alongside economic migration from rural areas to the cities, both of which cause waste management problems. It is generally accepted that infrastructure for disposing of waste in Kenya is inadequate, especially for recycling.

Textile waste disposed of in the Dandora dumpsite is only 1.89% of the total waste



Objective D: Analyse the environmental impact of the second-hand clothes trade versus the manufacture of new clothes

3D.1 Introduction

The global textile sector is very significant as it provides products such as clothing which are essential to meet the basic needs of the population. The industry is projected to generate about 1.74 trillion USD in revenue ³⁸ in 2023, and an additional 7.46 trillion USD from 2024 to 2027. Textile production is one of the largest contributors to climate change in terms of carbon produced. It consumes a lot of resources, including water and land. In 2016 it was projected that by 2020, textile production and the amount of resources consumed was likely to increase by 15%, while the amount of freshwater used was projected to increase by 12% amounting to 240 billion cubic metres. ³⁹ The thriving SHC sector globally provides an opportunity to reduce the environmental impact of new clothing production.

3D.2 Environmental impacts associated with textile manufacture

- **Water consumption and pollution:** The European Environment Agency estimates that the manufacture of a single cotton t-shirt consumes about 2,700 litres of fresh water, enough to meet a single person's drinking needs for 2.5 years ⁴⁰. According to Sphere standards, this equates to six months of total basic water needs that encompass survival needs, water intake (drinking and food), basic hygiene practices, and basic cooking needs.⁴¹ The textile industry is also known to be one of the main contributors to water pollution all over the world, causing more than 20% of the registered levels of water pollution in countries like Turkey, Indonesia and China. ⁴² The textile industry uses large volumes of water and also generates significant volumes of wastewater in parts of the world where water is a very scarce resource. A process like dyeing constitutes a particularly important problem in this respect, as dye houses are notorious for not only exhausting local water supplies, but for dumping untreated wastewater into local streams and rivers. It is striking that recycling a cotton T-shirt is also environmentally damaging – further underlining the importance of reuse models.
- **Greenhouse gas emissions:** The textile industry is responsible for about 10% of global greenhouse gas emissions, with 1.7 million tonnes of CO₂ emitted annually and is a major contributor to global warming.⁴³ These emissions are due to the energy-intensive nature of materials and processes used in the production, finishing, and maintenance of textiles, and the volume of products manufactured each year.

³⁸ Statista. 2022. Revenue of the apparel market worldwide from 2014 to 2027.

³⁹ Quantis. 2018. Measuring Fashion: Environmental Impact of the Global Apparel and Footwear Industries Study.

https://quantis.com/wp-content/uploads/2018/03/measuringfashion_globalimpactstudy_full-report_quantis_cwf_2018a.pdf

⁴⁰ European Environment Agency. 2023. Textiles and the environment: the role of design in Europe's circular economy.

<https://www.eea.europa.eu/publications/textiles-and-the-environment-the/textiles-and-the-environment-the>

⁴¹ The SPHERE Association. The SPHERE Handbook. Chapter 2: Minimum Standards in Water Supply, Sanitation and Hygiene Promotion.

https://ec.europa.eu/echo/files/evaluation/watsan2005/annex_files/Sphere/SPHERE2%20-%20chapter%20%20-%20Min%20standards%20in%20water.%20sanitation%20and%20hygiene%20prom.pdf

https://ec.europa.eu/echo/files/evaluation/watsan2005/annex_files/Sphere/SPHERE2%20-%20chapter%20%20-%20Min%20standards%20in%20water.%20sanitation%20and%20hygiene%20prom.pdf

A significant amount of energy is also required for processes such as sewing, gluing, welding and seam taping equipment.

- **Raw materials:** The production and use of raw materials such as cotton and other natural fibres has extensive environmental impacts. Approximately half of all textiles are made of cotton and its production provides income for more than 250 million people worldwide, employing almost 7% of all labour in developing countries.⁴⁴ However, cotton production requires huge quantities of land, water, fertilisers and pesticides. Non-raw materials are not a better solution, as polyester is derived from fossil fuels, is non-biodegradable, and can discharge microplastic fibres which release toxins into the environment that can end up in the human food chain.
- **Processing and garment production:** Various processes of garment production such as spinning materials into yarn, weaving yarn into fabrics, and finishing techniques such as dyeing are processes that require significant amounts of energy, water and chemicals. More than 1,900 chemicals are used in the production of clothing of which 165 are classified by the EU as hazardous to health or the environment.⁴⁵ A significant amount of energy is also required for processes such as sewing, gluing, welding and seam taping equipment. Dyeing can require up to 150 litres of water per kilogram of fabric. Where environmental legislation is not strict or well enforced, the wastewater is often discharged unfiltered into the environment. Many textile recycling processes currently use a significant quantity of chemicals; there are processes that require fewer chemicals but they are yet to go mainstream in the industry.
- **Transport and distribution:** These processes are a major contributor in terms of environmental impact as clothing is commonly transported over large distances to reach consumers. This also involves the generation of a significant amount of solid waste as the boxes, bags and wrapping that the clothes are packaged in are ultimately discarded.
- **Consumer use:** This stage is known to have the largest environmental footprint in the lifecycle of clothes. During use significant environmental impacts are realised owing to the water, energy and chemicals used in washing, tumble drying and ironing, and the resulting microplastics that are usually shed into water.
- **End-of-life:** Across the world, the fact remains that all clothes are eventually thrown away and burned in incinerators or end up in landfill. However, before reaching end-of-life, once the owners of the clothes dispose of them, clothes can be re-used as second-hand clothes, or recycled. There is usually a high level of demand in developed countries and a large proportion is exported to developing countries in East Asia or Africa. A significant issue at this stage is about the producer pays principle: the primary responsibility for disposing of SHC as waste lies not with the *mitumba* industry or the Kenyan government, but with textile producers and the fast fashion industry, predominantly located in the West and Asia, China in particular. These businesses should be supporting developing countries to improve their waste management infrastructure and investing in recycling capacity.

⁴² Paraschiv, D., Tudor, C. and Petrariu, R. 2015. The Textile Industry and Sustainable Development: A Holt–Winters Forecasting Investigation for the Eastern European Area. *Sustainability*. 7(2). 1280-1291. <https://doi.org/10.3390/su7021280>

⁴³ Climate Seed. 2022. Textile Industry: Environmental Impact and Regulations. <https://climateseed.com/blog/secteur-du-textile-impact-environnemental-et-r%C3%A9glementation>

⁴⁴ WWF. n.d. Cotton: Overview. <https://www.worldwildlife.org/industries/cotton>

⁴⁵ EPRS. 2019. Environmental impact of the textile and clothing industry. What consumers need to know. European Parliamentary Research Service. [https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI\(2019\)633143](https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI(2019)633143)

- **Recycling:** Though some countries have high collection rates for reuse and recycling, second-hand clothes are often exported to countries with no collection infrastructure of their own. Due to less developed technologies for recycling, less than 1% of all materials used in clothing are recycled back into clothing. ⁴⁶ This is a key point that is too rarely acknowledged – recycling is not a magic solution to the problems of fast fashion and over-production – given that current recycling models can in themselves have an adverse environmental impact. The textile and fashion industry has been too reluctant to embrace reuse rather than recycling as the key driver of sustainability. Technologies to recycle clothes into virgin fibres are still inadequate; as a result clothes are recycled mechanically including being cut up and shredded resulting in a reduction in quality of the material and a loss of about 75% of their value which limits their use in manufacturing of new clothes. As such, recycled clothing does not necessarily result in new clothes but rather textiles being down-cycled into insulation material, wiping cloths or mattress stuffing. Chemical recycling technologies are available to produce virgin fibres of a high quality for polyester and nylon, but still remain scarce for cotton and blends.

In developing countries such as Kenya, there is little infrastructure to dispose of large amounts of textile waste, some of which is burnt, while the rest ends up in dump sites and in the ecosystem. Decomposing clothes release methane, a harmful greenhouse gas whilst the majority of synthetic fabrics like polyester are non-biodegradable. Others may contain hazardous chemicals which are released into the natural environment.

3D.3 Environmental and economic impacts associated with the use of second-hand clothing

The use of second-hand clothing has many environmental and economic benefits relating to the process of acquisition and usage. These include;

- a. Minimising solid waste generation, particularly textile waste: Second-hand clothing prolongs the time until a piece of clothing becomes waste. Most quality garments that are bought second-hand still have another 10 years of life. Purchasing second-hand clothing prevents more clothes and textiles ending up in landfills or incinerators.
- b. Saving the consumer money: As an example, a family that reuses old baby clothes for a new baby would make 50% savings on clothes that they would have had to buy.
- c. Earning an extra income: Individuals owning used clothes can sell them to another individual who wants or needs them. This is particularly important for women and young people who are able to establish thriving micro-businesses and earn additional income.
- d. Reducing water and energy consumption: Reusing clothes is an effective way of significantly reducing the amount of water used for clothing production, as the need for new garment fabrication is reduced. Clothes with a higher lifespan that are durable and worn for a long time also have a reduced environmental impact.

In developing countries such as Kenya, there is little infrastructure to dispose of large amounts of textile waste, some of which is burnt, while the rest ends up in dump sites and in the ecosystem.

⁴⁶ Ellen MacArthur Foundation. 2017. A new textiles economy: Redesigning fashion's future. <https://ellenmacarthurfoundation.org/a-new-textiles-economy>

A reduction in consumption and production minimises the environmental impact associated with resource extraction and production, such as water usage, energy consumption, and deforestation.

- e. Reducing greenhouse gas emissions: The global fashion industry emits 1.7 billion tonnes of CO₂ each year which is more than all air and sea travel combined. According to current trends, the greenhouse gas emissions emitted by the fashion industry are expected to rise by 50% by 2030. Every individual that buys second-hand clothing can prevent more than 500 pounds of carbon emissions each year and reduce their water, waste, and carbon footprint by more than 80%.⁴⁷ It is estimated that 600 kgs of used clothing on the market is equivalent to saving 220 kgs of carbon emissions, nearly 150 trees, and over 3.5 billion litres of water.⁴⁸
- f. Minimising the use of hazardous substances: The production of cotton requires a large amount of water, pesticides and fertilisers. It is estimated that cotton farming consumes 4% of worldwide nitrogen and phosphorous fertilisers, 16% of all insecticides, and 7% of all herbicides, and that the production of 1 kg of cotton that is used for textile manufacturing requires up to 3 kgs of hazardous chemicals.⁴⁹ The chemicals involved in the production of cotton in large quantities are hazardous and detrimental to the environment. It is important that this is taken into consideration in the context of sustainability and circular economy.
- g. Reducing resource consumption: Our research suggests that in the households surveyed, purchasing SHC reduced demand for new clothing. A reduction in consumption and production minimises the environmental impact associated with resource extraction and production, such as water usage, energy consumption, and deforestation.
- h. Extending product lifespan: In our research we found that the majority of consumers of SHC utilised different strategies to extend the lifespan of their garments. 70% of surveyed respondents stated that they utilise proper washing and care to maintain the quality of their clothing. A further 44% reported mending and repairing clothing.
- i. Repurposing and upcycling old clothes: Asked if they have ever transformed old clothes into other items to give them a new life or different use, 65% of surveyed respondents replied in the affirmative, showcasing a positive trend towards sustainable fashion practices. The motivations behind these transformations primarily revolve around cost savings (74%), creativity and preserving style and fashion (58%), and environmental concerns (34%). Participants engaged in various methods, with sewing and alterations into other items being the most popular method for transforming old clothes into reusable items. These findings demonstrate a more responsible approach to clothing consumption by textile users, contributing to textile waste reduction and promoting a more sustainable and circular fashion industry.

⁴⁷ Alliance for Sustainability. 2022. Sustainability Tip: 7 reasons to buy clothing second-hand rather than new. <https://afors.org/2022/07/24/sustainability-tip-7-reasons-to-buy-second-hand/>

⁴⁸ Ecohotel. N.d. Why Second-Hand Clothing Is Better For The Planet. <https://ecofoote.com/why-second-hand-clothing-is-better-for-the-planet/>

⁴⁹ Yousefi, Y. 2020. Environmental and Social Impacts of Fast Fashion. <https://sdwatch.eu/2020/02/environmental-and-social-impacts-of-fast-fashion/>

- j. Taxes and levies: The taxes levied on second-hand clothes are import duties, a railway development levy, and an import declaration levy. Cumulatively, the importer incurs about Ksh 1.5 million per container in taxes. Given 185,000 tonnes of textiles are contained in 8,000 40-foot containers, the government of Kenya receives an average of Ksh 12 billion annually in import duty from second-hand clothes. As such, the sector contributes at least Ksh 1 billion in revenue per month. This figure is in addition to costs such as a business permit and a fire safety certificate that may cost around Ksh 10,000 and Ksh 5,000 respectively per year. Traders also pay a turnover tax rate of 3% of their gross sales. Related businesses such as transportation and storage services also pay sales tax, income and corporate tax that generate additional revenue. These taxes are very high, above the average for other commodities imported in Kenya. While it can be said that the high costs of importing second-hand clothes help to ensure stakeholders maintain good quality, these may be viewed as punitive tariffs on a product that has positive environmental benefit and is good for the Kenyan economy. The general customs duty on imported SHC is 35% where most other imported commodities are 10-25%. In addition to this, the Kenyan tax office has imposed thresholds which make it even more expensive to import clothes. For example, customs duty is a minimum of 0.40 USD/kg. If the calculated duty of 35% is below 0.40 USD/kg, which is often the case, the duty will be 0.40 USD/kg. There is a threshold on the weight of the container as well. For example, a 40-foot container of shoes will weigh approximately 16,000 kgs. However, the duty shall always be based on a threshold weight of 22,000 kgs, drastically increasing the level of the duty. There is a compelling case for the government of Kenya to lower duties and taxes to a level playing field with other commodities.
- k. Consumer demand: Second-hand clothes are both trendy and affordable for most users while providing a wide range of options for consumers on high and low incomes. Brand new clothes are relatively expensive and, in some cases, perceived to be of poor quality. SHC gives consumers choice generating business competition which in the long run benefits both consumers and businesses. Crucially, SHC has an appeal across both middle class and low-income households, both in western and developing countries. The SHC trade also complements the responsible manufacturing of new textiles as it creates a working system where consumers end up getting the best prices and quality of goods while incentivising manufacturers to create better products.
- l. Providing employment: The SHC industry employs at least 2 million people in Kenya which is 10% of the extended labour force of about 20,641,175 persons.⁵⁰ It is a vital source of income contributing to improving the living standards of many households, ensuring the provision of basic needs, and in turn reducing poverty levels in the country. The SHC trade employs scores of workers including loaders, transporters, tailors, traders, storage facility owners and employees, landlords of business premises, security providers, and food vendors among others. Many of these roles are relatively well paid and secure.

Second-hand clothes are both trendy and affordable for most users while providing a wide range of options for consumers on high and low incomes.

⁵⁰ Kenya National Bureau of Statistics. 2020. Labour Force Survey.

The linear economy depends on increasingly scarce resources which are prone to disruptions in supply and volatile prices driving economic vulnerability.

Objective E: Demonstrate the economic, social and environmental impacts of the SHC trade more broadly and how it underpins the circular economy approach that the EU, African and US markets are starting to pay more attention to

3E.1 Introduction

The circular economy is “a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products, for as long as possible”.⁵¹ The term “circular economy” was coined by Allen Kneese in 1988, however, the idea of the circularity of economy and the need to reduce consumption had previously been raised in the book “Spaceship Earth” by Kenneth Boulding as far back as 1966. Viewing Earth depicted the world as a single spaceship with limited resources both in terms of what can be taken from it (i.e. natural resources) and what can be disposed of (i.e. pollution and garbage). The concept has continually evolved and a popular extension is the idea of ‘doughnut economics’ expounded by the economist Kate Raworth.⁵² Doughnut economics focuses on various factors of modern societies and economies and their interdependence, emphasizing the need to work with and within the cycles of the living world. This means as far as possible sharing, repairing and regenerating resources.

3C.2 Upcycling of waste not deposited at the Dandora dumpsite

The linear economy model (Figure 2) assumes that resources are infinite and can be taken and wasted without any consequences. This model or school of thought encourages producers to extract materials without considering ecological impacts, and encourages consumers to overuse and generate excessive amounts of waste. The linear economy model has been at the core of the western capitalist system for many decades.



Figure 2: Linear Economy Model

Yet the increasing adoption of the linear model globally has resulted in accelerated resource depletion, pollution, excessive waste, climate change, social inequality, and increased vulnerability to economic and environmental impacts. The linear economy depends on increasingly scarce resources which are prone to disruptions in supply and volatile prices driving economic vulnerability.

⁵¹ European Parliament. 2023, Circular economy: definition, importance and benefits. <https://www.europarl.europa.eu/news/en/headlines/economy/20151201STO05603/circular-economy-definition-importance-and-benefits>

⁵² Doughnut Economics Action Lab. n.d. About Doughnut Economics. <https://doughnuteconomics.org/about-doughnut-economics>

In contrast, the goal of the circular economy model is to minimise waste, maximise resource efficiency, and create a more sustainable economic system. The circular economy operates on a closed-loop system, constantly circulating materials and resources. This model focuses on reusing, repairing, and recycling, providing significant environmental and economic benefits while making the consumer a co-producer (Figure 3).

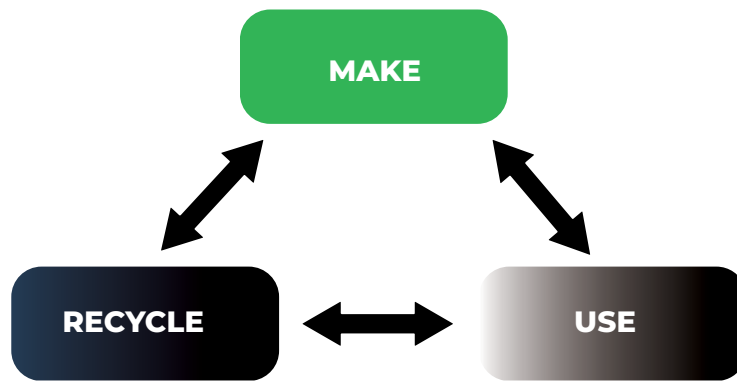


Figure 3: Circular Economy Model

Products are designed to have longer lifespans, reducing waste and the need for constant replacement, in turn significantly reducing the demand for virgin resources. Economic opportunities are created by fostering the development of new green industries and jobs. Positive environmental impacts such as reduced environmental degradation are achieved by reducing waste and resource consumption, minimising pollution and emissions, lowering greenhouse gas emissions, and the conservation of natural resources. In the circular economy, the products and the materials contained in them are highly valued and the aim is to limit the leakage of resources out of the loop as much as possible.⁵³ The circular economy implies the reduction of waste to a minimum by keeping materials of products that have reached their end of life within the economy. This can be achieved by recycling, refurbishing, reusing, repairing existing materials and products.

3E.3 Circular economy in the concept of SHC

Second-hand clothing as a business is feasible both economically and environmentally. It is much more sustainable to reuse clothing than to produce new clothing which will have a detrimental impact on the environment in terms of natural resources and carbon emissions. The circular economy model presents opportunities such as reduced pressure on the environment, increased competitiveness, innovation by forcing businesses and stakeholders to collaborate and take risks, growth, and jobs. On the other hand, challenges exist in the form of changing consumer behaviour, developing new business models, financing, upskilling, among others. There is also a fear that the circular economy will lead to loss of jobs and living standards due to the move away from the linear production system. A key question for public policy is how best to compensate the ‘losers’ in the shift towards more sustainable production systems.

In the circular economy, the products and the materials contained in them are highly valued and the aim is to limit the leakage of resources out of the loop as much as possible.

⁵³ European Parliamentary Research Service (EPRS). 2016. Closing the Loop - New Circular Economy Package. Briefing. Members’ Research Service. https://www.europarl.europa.eu/RegData/etudes/BRIE/2016/573899/EPRS_BRI%282016%29573899_EN.pdf

Importers of SHC play a significant role in contributing to the circular economy by facilitating the reuse and redistribution of pre-owned garments.

3E.4 Role of second-hand clothing importers in contributing to circular economy

Importers of SHC play a significant role in contributing to the circular economy by facilitating the reuse and redistribution of pre-owned garments. First, by acquiring used clothing from various sources and distributing the garments to new markets and alternative channels, they extend their lifespan and prevent them from ending up in landfill. Increased reuse also reduces the environmental impact associated with the production of new clothing items. The production of new clothing requires substantial amounts of energy and water, contributing to environmental degradation.

Secondly, importers of SHC promote affordability of SHC. Importers make these items accessible to consumers who may have limited budgets or prefer more sustainable fashion choices. By offering affordable options, importers help reduce the demand for fast fashion and encourage a shift towards more sustainable consumption patterns.

3E.5 A snapshot of circular economy globally

Global: UNEP acknowledges that transforming the textile value chain into one that is sustainable and circular will allow us to address the negative environmental and social impacts, while also supporting people, prosperity and equity. However, this approach requires all stakeholders to use their resources and efforts to work together towards a common goal. UNEP has developed a Roadmap to Sustainability and Circularity in the Textile Value Chain which contains three priorities to deliver system change.⁵⁴ These are:

- a. Shifting consumption patterns – optimising design, business models and consumer behaviour. The existing quantified goals under this priority are:
 - Clothing utility is doubled
 - Circular consumer offers make up 60% of textile market revenue.
- b. Infrastructure investment – investing in shared physical technology and systems. The existing quantified goal under this priority is:
 - The industry adopts 100% renewable energy.
- c. Improved practices – optimising practices and behaviour in existing sites, companies and processes. The existing quantified goals under this priority are:
 - 100% of priority materials are preferred and low climate impact
 - 45% of polyester recycled
 - Source 100% sustainable cotton.

Europe: In March 2020, the European Commission published its new Circular Economy Action Plan which presented new initiatives for the entire life cycle of products in order to modernise and transform our economy while protecting the environment.⁵⁵ The Plan covered a range of areas from electronics, textile, plastics to waste.

⁵⁴ United Nations Environment Programme. 2023. Sustainability and Circularity in the Textile Value Chain - A Global Roadmap. <https://www.oneplanetnetwork.org/knowledge-centre/resources/sustainability-and-circularity-textile-value-chain-global-roadmap>

⁵⁵ European Commission. 2020. Circular Economy Action Plan: The European Green Deal. <https://data.europa.eu/doi/10.2775/458852>

Directly relevant to the textile industry is the more recent EU strategy for sustainable and circular textiles⁵⁶ that addresses the production and consumption of textiles and proposes coordinated actions to alter how textiles are produced and consumed. The strategy aims to ensure that textile products in the EU market are durable, repairable, recyclable and environmentally sustainable. It also seeks to ensure that consumers benefit longer from high quality affordable textiles while ensuring that re-use and repair services are more profitable and available. It also aims to make the textile sector competitive, resilient and innovative with producers taking environmental responsibility for their products and having sufficient capacities for recycling, minimal incineration and landfilling. The EU strategy is very important but at this stage it remains relatively aspirational, not least because the strategy requires member states to adopt this approach; it cannot be enforced by law. As a result, there is a great deal of variation across the member-states of the EU.

United States: The United States Government also recognises that circular economy innovation can contribute to decarbonisation and net-zero goals, as well as enhancing economic growth and jobs, environmental justice, cleaner air and water, supply chain security, and other important priorities. In 2022, the Biden Administration launched its major policy initiative to achieve net-zero by 2050 focused on five themes. One of the five priorities is accelerating innovation in industrial products and fuel to create a net-zero, circular economy.⁵⁷ More broadly, there are a range of market initiatives and innovations around the US, and state-level regulations supporting the circular economy. The second-hand clothes market within the US is expected to experience phenomenal growth with projections forecasting it to be a US \$57 billion market by 2032, growing faster than the apparel market overall.⁵⁸

Kenya: In Kenya, progress is being made towards circularity involving collaborative efforts between government agencies and the private sector. These have been evident in the energy sector with the development of renewable energy such as hydropower, geothermal and solar energy sources. In terms of policy and regulatory frameworks, in addition to existing policies on waste management and legislative provisions on a clean environment, policies and legislation to support the circular economy include a ban on single-use plastic bags in 2015, the Sustainable Waste Management Act of 2021, the ongoing development of an Extended Producer Responsibility Policy, and the revision of the building code to include principles of circularity in the construction sector. A ban on the scrap metal trade through the Scrap Metal Act of 2015 has enabled progress to make the scrap metal trade sustainable and efficient.⁵⁹ Interventions in resource efficiency and proper waste management have given rise and purpose to various agencies to deal with organic waste, material recycling, minimising food spoilage, return programs, and bottles recycling.

Although there is currently no focused strategy directed towards the textile sector, circularity is cross cutting and will apply to processes such as waste generation and management, as well as fostering innovations in tune with circularity and promoting the circular economy.

The EU strategy is very important but at this stage it remains relatively aspirational, not least because the strategy requires member states to adopt this approach;

⁵⁶ European Commission. 2022. EU strategy for sustainable and circular textiles.

https://environment.ec.europa.eu/publications/textiles-strategy_en

⁵⁷ The White House. 2022. U.S Innovation to Meet 2050 Climate Goals: Assessing Initial R&D Opportunities.

<https://www.whitehouse.gov/wp-content/uploads/2022/11/U.S.-Innovation-to-Meet-2050-Climate-Goals.pdf>

⁵⁸ Thredup. 2022. Resale Report.

https://cf-assets.thredup.com/resale_report/2023/thredUP_2023_Resale_Report_FINAL.pdf

⁵⁹ Kenya Institute for Public Policy Research and Analysis. 2022. Circular Development-Accelerating the Agenda in Kenya.

<https://kippra.or.ke/circular-development-accelerating-the-agenda-in-kenya/>

It is imperative that a more focused effort is made to accelerate progress in ensuring the textile industry becomes more environmentally sustainable.

The banking sector has also made steps towards implementation of green financing initiatives in East Africa and will hopefully be a major source of support towards the textile industry and promotion of clothing reuse (second-hand clothing) and their proper recycling.

There remains a need for a comprehensive policy framework that integrates the various sectors and key stakeholders, charting the path towards the common agenda of circularity. Under Kenya's Vision 2030⁶⁰, Kenya aims to be a nation that has a clean, secure and sustainable environment by 2030 with flagship projects including the Solid Waste Management System Initiative that calls for the development of solid waste management systems in five leading municipalities and in the planned economic zones.

3E.6 Recommendations

With the evident impact on the environment of production and the rising costs of fuel and materials globally, it is imperative that a more focused effort is made to accelerate progress in ensuring the textile industry becomes more environmentally sustainable. This will include strategies to reduce the impact on the environment causing less pollution and using less resources, notably extending the lifecycle of clothing by making better quality clothes, reusing them, and recycling textiles and fabrics to produce different products. The second-hand clothing industry has an important role to play in the future of a circular economy and there are impactful actions that brands, manufacturers, government and SHC traders can take both at the macro and micro level.

- **Extending the life of clothing:** If clothes were to be worn for longer, greenhouse gas emissions and the amount of solid waste generated would be lower. Improved collection for re-use, repair and up-cycling is an effective strategy to extend the lifetime of clothing. This can be made possible by brands selling used clothes in the same stores, offering collection, repair and replacement services, or offering upcycling services or instructions on how to do so.
- **Improved collection and recycling:** Circular fashion seeks to reduce waste to a minimum and keep materials within the consumption loop for as long as possible with the option of selling them as second-hand clothing or recycling them. While brands can offer collection and recycling, national infrastructure in countries around the world can be improved to ensure greater adoption of reuse and upcycling. While the technology and know-how to recycle more sustainably improves, the focus should remain on increasing reuse.
- **Keeping the environment clean:** At a micro-level in Kenya, individual traders can ensure that they operate conscientiously and ethically, discarding waste via the most appropriate channels. This can be achieved by government implementing sanitation and waste management measures such as sufficient waste collection points with regular collection and disposal, particularly targeted at low income areas.
- **Support SHC growth alongside textile manufacturing:** Kenya's Vision 2030 aspires for Kenya to host a thriving textile manufacturing industry. With the global appetite for more sustainable growth and production rising, manufacturers will need to balance aspirations for economic and jobs growth alongside environmental goals. The global demand for SHC shows that the sector provides an opportunity for increased economic and jobs growth in Kenya which can sit alongside the textile manufacturing industry. The SHC sector should be supported through a targeted reduction in government taxes and duties currently imposed in the sector which remain relatively high compared to other industries.

⁶⁰ Government of the Republic of Kenya. 2007. Kenya Vision 2030: The Popular Version. <https://planning.go.ke/wp-content/uploads/2020/11/Vision-2030-Popular-Version.pdf>

4. Conclusion

This research study has confirmed that approximately 1%-2% of the total number of items in a SHC bale end up as waste that needs to be disposed of. The presence of waste in a bale is inevitable given that errors will always arise in the sorting process. Some of the pieces that are considered waste are burnt and others discarded as garbage, ending up in dumpsites. Some retailers prioritise repairing and mending the damaged clothing to reduce waste, extending the lifespan of garments and supporting local economies by helping customers to choose repair over disposal. Upcycling or repurposing is another approach, such as using textiles as patches to repair torn clothing, selling to other traders or businesses like cleaning companies, or to industrial manufacturers for use as raw materials. These efforts by the retailers help create a more sustainable and environmentally friendly fashion industry by encouraging consumers to make more thoughtful choices and reducing the overall environmental impact of clothing production. Most of these efforts are based on the individual initiative of retailers seeking to maximise their income. With the right investment, there are great opportunities to further extend the circular economy to include recycling, in the process creating many more job opportunities.

The average household in low income areas of Nairobi according to our survey generates approximately 3.5 kgs of textile waste annually, accounting for only 0.39% of total household waste. This finding is corroborated by a previous study that estimated the proportion of textile waste in waste generated in Nairobi City to be 0.72%, less than 1% and considered negligible. The textile waste from the households interviewed appears to constitute of end-of-life pieces of clothing, whether initially purchased as new clothes or second-hand clothing. A low proportion of respondents are aware of the importance of textile recycling programs and are not actively participating in or pushing for textile recycling programs. The lack of nearby or easily accessible recycling centres inevitably constrains the progress of sustainable waste management efforts. A low awareness level and insufficient textile recycling facilities are a major constraint on recycling.

Since textile waste disposed of in the Dandora dumpsite is only 1.89% of total waste, which consists of mostly end-of-life pieces, we conclude that the import of second-hand clothes does not directly affect the waste generated in Nairobi. As Nairobi is a critical hub for the SHC trade, a reasonable assumption would be that this low level of waste would be a pattern evident across the country.

The SHC trade actively contributes to the circular economy by promoting reuse and reducing the environmental impact associated with the production of new clothing. Environmental and economic impacts associated with the textile industry are numerous. A great deal of research has shown that textile production contributes to air and water pollution, with significant consumption of raw materials including land and water resources. The textile sector is identified as one of the highest contributors to climate change due to the high levels of carbon produced during production, processing, transport and distribution, consumer use, end-of-life and recycling processes. As presented in this report, the positive impact of the SHC sector is clear, notably reducing greenhouse gas emissions, saving money, minimising solid waste generation, reducing pollution and use of hazardous substances, extending life of clothing, reducing energy and resource consumption, repurposing and upcycling old clothes, meeting consumer demand, as well as the provision of employment opportunities among other benefits.

The SHC trade actively contributes to the circular economy by promoting reuse and reducing the environmental impact associated with the production of new clothing.

Overall, this is a thriving growth sector providing the population with high demand products and jobs.

As such, the SHC trade plays a significant role in contributing to the circular economy by facilitating the reuse and redistribution of pre-owned garments, by acquiring used clothing from various sources, and distributing garments to new markets and alternative channels, extending their lifespan and preventing them from ending up as waste in dumpsites and landfills. In Kenya, there is no specific policy or legal framework associated with the textile industry or second-hand clothing industry and its adoption of the circular economy approach. However, the textile industry is identified as one of the manufacturing sectors in the Kenyan Government's "Big Four Agenda" that aims to develop key sectors to drive Kenya's economic growth. The existing legal and policy framework that includes the Kenya Vision 2030 and the Solid Waste Management System Initiative is providing the space in which the textile industry and SHC stakeholders can work to adopt the circular economy approach within their industry. Overall, this is a thriving growth sector providing the population with high-demand products and jobs. The government should support further growth by reducing the relatively high taxes and duties imposed on the sector, and by ensuring a stable regulatory environment to incentivise business investment.



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